



Turning DATA INTO Decisions

BY LISA PETRIDES

CHIEF ADMINISTRATIVE AND FINANCIAL officers across the higher education spectrum are seeking more effective ways to turn institutional data into useful institutional knowledge, particularly in response to today's external pressures.

In the new era of accountability for education, for example, college and university leaders play a crucial role in ensuring that their institutions use the data they generate to more effectively plan, operate, and manage. Performance-based-funding mandates place increased pressure on institutions to find ways to leverage existing program resources. Faced with declining state budgets across the country, moreover, business officers are looking for ways to make cost-effective decisions.

A 2002 study conducted by the Institute for the Study of Knowledge Management in Education (ISKME) with leaders from more than 30 colleges and universities nationwide found that most institutions already have systems for using data for decision making. Many leaders say they do not make decisions until data have been mined, studied, and evaluated. The demand to meet external requests for information, however, places an enormous amount of pressure on colleges and universities.

According to Roger Lowe, vice president for administration and finance at Wichita State University, "Requests for accountability data are increasing at a time when we've had to eliminate positions. We simply have fewer people to respond to those requests. So we are

Better data, better decision making. That's why business officers must encourage the collection and use of institutional data across campus functions.

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going to be asked to do more with less.”

Additionally, college and university leaders face powerful internal challenges that can make it difficult to use data effectively for improving academic programs, streamlining management procedures and policies, and measuring institutional effectiveness.

While most institutions have data-based information systems in place, some fail to share and use data and information effectively, which often leads to missed opportunities in planning and forecasting and in day-to-day decision making. Reasons for the failure include: 1) the lack of integration among information systems, 2) unclear priorities in the collection of data, and 3) the creation of data silos that prevent the necessary links between functions and structures across the institution.

Challenge #1: Lack of Data Integration

For starters, many institutions have multiple data sources or information systems that are not linked. This makes it difficult, for instance, either to compare financial data with student data, resulting in an inability to calculate budget projections for enrollment management, or to conduct retention analyses to see how many freshmen have stayed at the institution and continued on to complete their sophomore years.

Alternatively, a well-integrated information system that can predict information flow patterns enables an organization to manage its operations more effectively. As one example, a well-integrated system for financial aid would allow institutions to track what is awarded to students, what they accept, and when the monies are received from the federal government in order to pay out the awards.

Mary M. Lai, vice president for finance and treasurer at Long Island University, says her institution monitors daily data to inform both short-term and longer term decisions. In addition to using registration data to determine whether to eliminate a particular class section, university leaders use the same data to project optimum class sizes for subsequent semesters. Budgetary adjustments are likewise made in response to data regarding increases or decreases in student enrollments. Even faculty workload is tracked to plan better for programmatic adjustments. “Faculty used to fill out a hard-copy form—signed by their chair and dean—which was then sent to payroll,” says Lai. A new system now electronically tracks faculty hours so that academic deans are better able to analyze faculty and department productivity and to assess program needs.

Campuses that focus on the customer-service aspect of data integration are making continuous improvement a priority, with promising results. Says Glenn Dodd, vice president for business affairs and treasurer at Cornell College, “One of our overriding

objectives is customer service. The more convenient and friendly we can make it for our students, the better we do as an institution. As we gravitate to more server-based systems that increase access to information, we are also able to assist faculty in their needs.” For example, Cornell has uploaded student records online. Faculty use this information for various advising purposes. “This eliminates time spent going back and forth between offices. The more efficient we can make that part of their responsibility, the more time that can be spent serving their students,” says Dodd.

“Communicating the value and importance of data will be readily apparent to student and faculty. In a sense, your actions speak louder than words,” says Dodd. “Our students are increasingly computer savvy, and anything you do that will enhance their service via the use of information systems will improve their viewpoint of the services they receive.”

Challenge #2: Unclear Data-Collection Priorities

Some college and university leaders say that deans and faculty are sometimes unclear about what data they should collect and that high-level officials can be inconsistent about requiring the use of data beyond their own administrative offices. Equally significant, data are not generally disseminated from top-level administration to faculty and mid-level decision-makers, resulting in an inability to use benchmarks to measure and compare institutional performance with peer or competitor universities.

In some cases, faculty may be reluctant to collect data about their work or may be unwilling to support data-collection policies that would have their work or class outcomes subject to institutional scrutiny and inspection. Understandably, some faculty may fear that such data collection could lead to unfavorable repercussions, such as the closing of an academic program with low enrollment. Faculty members might also resist processes that would require them to take on additional tasks or functions outside of their existing classroom responsibilities. As business officers are able to put in place processes that outline mission centrality, budget constraints, and policy adherence, however, faculty are usually more willing to take on these important data-collection roles.

Joseph Stevenson, provost at Jackson State University, has been working with faculty to address their concerns regarding the use of data for institutional decision making. Through primarily faculty-centered workgroups called DMUs (decision-making units), faculty apply diagnostic and data-driven problem solving to the academic enterprise. “This process is used to make decisions about policy and practices regarding accreditation, program review, faculty personnel issues, and salary compensation,” says Stevenson.



Challenge #3: Data Silos

College officials don't often make it their business to monitor how well data are being shared among senior management, faculty, and staff. Additionally, institutional incentives may not be in place to ensure that data and information are timely, accurate, and up-to-date. Business offices may use various systems and software to collect and organize data, which can lead to incompatibility problems. Some institutions face a high turnover rate at the president or provost level, making it difficult to remain consistent in the way they systematically use and share data. While college officials say there is much to do, even when appropriate infrastructure and policies are in place, there is often not enough staff with the required training or knowledge to conduct the necessary analyses to support tailored, institutionwide processes for recruitment efforts, facilities planning, and long-term budget projections.

Five years ago, Wichita State University put a process in place to improve the accuracy of its data. "The division of administration and finance was asked to take over institutional research responsibilities to improve the credibility of our data and reports," says Lowe. "We found that deans and other decision-makers would simply not use these reports due to concern about the accuracy of the data. Working together cross-functionally, a new data warehouse was developed, which allowed us to more easily produce timely and accurate data."

Community colleges—arguably the hardest hit by recent budget cuts and state accountability measures—have also sought new approaches to information management to help them deal with greater demands for demonstrating their effectiveness. Administrators at Cuyahoga Community College conducted a knowledge audit that involved interviewing faculty and staff about the key components of their jobs. Information from the audit was used to identify and address some of the institution's most pressing needs, including revamping the college's cumbersome curriculum and program-approval process so that it would be more responsive to requests for new courses and programs. The college also expanded existing faculty committees to include deans and administrators, creating a more streamlined process to discuss and institute improvements to curriculum, fundraising, and overall work processes.

According to Frank Reis, Cuyahoga executive vice president and chief operating officer, the grants office mapped its processes, procedures, and needs and then initiated and implemented redesign efforts to streamline its business processes. "The grants office is currently implementing a new Web-based system as part of that redesign effort—moving the information sharing and seeking process from manual to electronic," says Reis.

In another example, Foothill De Anza Community College

District—representing the Foothill and De Anza community colleges—recognized the need for a more effective way to collect, use, and analyze data across the institution, as well as a comprehensive process for responding to performance mandates. Institutional leaders set out to identify what type of information administrators needed to support decision making in a new performance-based climate. A districtwide committee helped prioritize these needs by linking internal master plan goals with externally mandated performance outcome goals.

"As a community college located in Silicon Valley, flexibility and rapid change have become a way of life. Foothill values dynamic research agendas that are forward-looking, but we are stuck with an antiquated flat-file database," says Bill Patterson, Foothill's vice president of instruction and institutional research. The situation has required a lot of creative "workaround" solutions and flexibility in the system, he says. "As a result, we have developed a process dependent on frequent conversations about how we can best get at what we want through data-informed planning and decision making. So when external measures came along—first from the state of California in performance-based outcome measures and later with the accreditation move to outcome assessment—Foothill had a well-developed communication and decision-making process in place and a culture accustomed to change."

Through this process, the district's leaders recognized a widespread need and desire for information systems to inform decision making across all levels of the Foothill and De Anza campuses. Faculty spoke of their desire to have data about students to improve teaching and learning in the classroom. Everyone spoke of the need to use data to ensure that programs and policies reflect proven approaches that will help students succeed.

Data as a Catalyst for Change

Both two- and four-year colleges have for years been collecting and analyzing data as part of institutional research and data-based decision making. While institutional research has typically served as a neutral, data-collecting body that creates reports to satisfy external reporting mandates, the traditional role of institutional research has begun to shift to one of catalyst for institutionwide change. In an environment of increased internal demands, there is a shift in institutional research from primarily a reporting function to that of a service function. As a service function, institutional research is positioned to help leaders continuously study and assess the institution's programs and to serve as a bridge between academic, administrative, and governmental cultures.

Jackson State University administrators have helped faculty and staff develop a set of practices to collect information and share what they know, leading to action that has improved services and

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outcomes as part of a universitywide program review and reorganization. In each academic unit, faculty members were brought together to consider information and make recommendations about where their programs fit within the overall mission of the university. During this process, faculty members used data about their own and other academic programs, including enrollment rates, persistence rates, credit hours, grade point averages, graduation rates, faculty ratios, and demographics.

This process of sharing information has helped Jackson State faculty create arguments about the role and importance of their academic units within the university. “We are evaluating ways to integrate information sharing with best practices and benchmarking in the development of new policies—from shared governance to program review,” says Stevenson. “This process has allowed us to collect, analyze, and interpret data, and to reflect on the results for establishing new practices to support positive change.”

Higher education officials can better align decision making around institutional data and knowledge to raise performance, productivity, and outcomes for administrators, faculty, and students alike. These efforts can be a catalyst for institutions to reflect on the intersection of cultural, political, and technological forces within their communities as they use data and institutional knowledge to account for monies spent and decisions made. To do so, higher education officials need successful approaches to information systems and decision making that cut across all levels of the campus. This requires distributive leadership and the availability of information for decisions at all levels of the organization. Breaking down the barriers that limit the collection and sharing of data marks a major step toward strengthening institutional knowledge and improving decision making that encompasses academic outcomes, operations, and the bottom line.

Bridging an Important Gap

To assess ongoing information needs, higher education leaders must regularly scan the environment, including the impact of state-mandated performance-based funding, new accreditation measures tied to learning outcomes, changing student demographics, and scarce fiscal resources. At the same time, leaders need to support an internal culture that provides incentive and motivation to share information, broker knowledge, and sustain continuous learning.

While decisions about how to prioritize information system design and implementation are likely to be spearheaded by either a business officer within academic affairs or by an institution's finance staff, the result is that the information systems may be overly focused on either academics or finance. Creating a senior level business officer for information services could help bridge the gap between these demands by ensuring that the information needs of

academic and business units are served equally. The goal is an information environment where the two types of functions support each other.

“In a good system, faculty and business affairs get married in the budgeting process,” says Roger Fecher, vice president of finance and administration at Ohio Dominican University. “Budgeting documents are put together, which makes it easier to see on the accounting or the financial side what their dollars are. That is the ideal system. Everyone knows what is happening and can actually help each other reach institutional goals. This is particularly important in enrollment management with the advent of new assessment and accreditation needs.”

As a first step in improving the use of data-driven decision making, college and university leaders can work to identify their data and information strategies. This includes identifying the problems that information can help resolve, determining what and how much additional data might be required to solve a problem, and then planning the collection of additional data to support a cycle of continuous learning within the organization. For example, in the case of enrollment planning, administrators access real-time daily head counts by class section. They then work with faculty to offer additional sections as needed. Later, academic officers could meet with faculty and deans to discuss long-term enrollment trends and the availability of courses to meet the changing needs of their students.

Business officers play an important role in assessing how information is controlled on campus by exploring how information is provided, understood, and made use of; how, and if, people are rewarded for sharing information; and what type of subtle information sabotage might be taking place. The latter could take the form of databases that aren't regularly maintained, corrections that aren't entered into systems when reported, or duplicate paper versions of information that are maintained in addition to campuswide information systems. In addition, business officers can take steps to ensure that the campus culture communicates the value of data and data sharing and that leaders carefully examine the politics of information within the institution that may prevent it from making full use of the data at hand.

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