University of Phoenix: Driving Decisions Through Academic Analytics

Judith A. Pirani, ECAR Fellow
Bob Albrecht, ECAR Fellow

ECAR Case Study 9, 2005

Case Study from the
EDUCAUSE Center for Applied Research

EDUCAUSE

University of Phoenix: Driving Decisions Through Academic Analytics

University of Phoenix: Driving Decisions Through Academic Analytics

Preface

The EDUCAUSE Center for Applied Research (ECAR) produces research to promote effective decisions regarding the selection, development, deployment, management, socialization, and use of information technologies in higher education. ECAR research includes

- research bulletins—short summary analyses of key IT issues;
- research studies—in-depth applied research on complex and consequential technologies and practices;
- case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities; and
- roadmaps—designed to help senior executives quickly grasp the core of important technology issues.

From its most recent research, ECAR published a study, *Academic Analytics: The Uses of Management Information and Technology in Higher Education*, by Philip J. Goldstein, to assess the accomplishments of higher education's investments in technology to extract, report, analyze, and disseminate management information. Over the past few decades, institutions have spent hundreds of millions of dollars to improve information access through enterprise resource planning (ERP) systems, data marts, data warehouses, and other technologies designed to help institutions analyze the information they collect. The study addresses whether institutions are doing more with the data they collect, whether they are investing more resources in tools that enable them to collect and manipulate management information, and whether they're using the information and analyses to support institutional decision making.

Literature Review

Researchers reviewed current literature on several related topics. Specifically, we looked at studies of business intelligence, competitive intelligence, and the role of information to support decision making. We found that much of the literature pertains to industries other than higher education. However, we were able to extract some experiences and findings that are transferable.

Online Survey

We designed and e-mailed a quantitative survey to 1,473 institutions that belong to

EDUCAUSE. Senior managers at more than 380 institutions completed the survey. Most respondents held the position of CIO or a comparable title indicating that they are their institution's senior IT leader.

Interviews

We supplemented survey data with telephone or in-person interviews with IT and functional unit leaders who are significantly involved in academic analytics. In all, researchers spoke with 25 individuals from 19 institutions and 2 corporations. We selected interview participants who reported important characteristics in their survey responses—specifically, that they

- excelled at training staff to use academic analytics;
- have successfully deployed academic analytics broadly at their institution;
- reported high levels of satisfaction with the outcomes they achieve with academic analytics; or
- indicated that they were advanced users of academic analytics in multiple functional areas.

Interviews enabled us to deepen our understanding of the factors driving institutions to invest in academic analytics. They provided insight into the factors that drive institutional success and also provided interesting examples of how institutions are using academic analytics.

Case Studies

Researchers conducted two in-depth case studies to complement the core study. We assume that readers of this case study will also read the primary study, which provides a general context for the individual case study findings.

This case study, *University of Phoenix: Driving Decisions Through Academic Analytics*, examines how developing a data-driven decision-making environment through academic analytics has challenged the University

of Phoenix (UOP) throughout its central and campus organizations. It describes some of the issues involved in moving from data collection to the ultimate use of that data. Requirements for new tools must be coupled with cultural and organizational changes to ensure their use. Through overviews and very specific examples, the complex UOP structures and processes provide examples of academic analytics at unit and institutional levels.

The second case study, *University of California, San Diego: Increasing Operational Efficiencies Through Business Process Redesign and Analytics*, illustrates how UCSD has accomplished a significant business process redesign through its Sponsored Project Excellence Achieved through Redesign (SPEAR) program, a project in research and grants management. The case study describes the project's development and implementation and presents UCSD's efforts with business analytics. Innovative tools including balanced scorecards, dashboards, and other business applications support these initiatives through technology changes and shifts in administrative organization.

Introduction

Many institutions are bedeviled by their attempts to create the appropriate academic analytic tools to gather, synthesize, and evaluate relevant data and information for effective decision making. One success story, however, is the University of Phoenix. Given its fast-growing number of students, campuses, and faculty members, UOP has always fostered a data-driven decision-making environment to help monitor its activities and to measure its achievement of institutional goals. As Craig Swenson, UOP provost and senior vice president for academic affairs, observes, "Education is enough of a black box. We know that not every important thing can be counted, but there are many measurable items. So we make an effort to measure

what we can and make sure we hire people who are creative and adequately prepared to produce those other benefits that you can't measure."

Gathering data is standard practice at UOP, but transforming data into actionable information has presented challenges for the institution. "At one point we were drowning in data," explains Bill Pepicello, vice provost for academic affairs, "but how much of it was usable information was sometimes a question." As a result, UOP has worked to develop various systems to assist with decision making. "Data does not necessarily tell you what to do, but it does inform you about what is not working," states Jay Klagge, associate vice president, Institutional Research and Effectiveness (IR&E). "Our basic idea is to distribute information in different dimensions. The questions become, What do you need to measure? If you need to measure the institution's pulse, where do you put your finger? Who has accountability for the measure? Who makes a contribution to this vital measure? How do we evaluate his or her contribution in terms of activities and outcomes? We are not trying to make decisions for anyone, but rather to present relevant information to support their evaluation and choices to improve performance. My goal is to move the UOP community from reporting—the system does that—and become more involved with analysis." This case study highlights several current and planned UOP initiatives that support this goal.

Background

Founded in 1976, UOP offers baccalaureate, master's, and doctoral programs providing campus-based (traditional classroom) instruction, online program delivery, and its FlexNet programs that combine the two learning modes. The university's academic programs are administered by three academic schools. The Artemis School of Education, Health, and Human Services includes the Colleges of Education, Health, and Human Services and University College. The John Sperling School of Business and Technology includes the Colleges of Graduate Business, Undergraduate Business, and Information Systems and Technology. Doctoral programs are administered through the School of Advanced Studies. The University of Phoenix is part of the Apollo Group, which as of May 31, 2005, had 295,500 students enrolled in its programs either online or at its 172 campuses and learning centers in 39 states, Puerto Rico, and Canada. UOP directs its programs primarily to adult learners who are currently employed or have significant work experience. This targeted strategy is successful, as UOP continues to open new campuses throughout North America to serve its growing student enrollment.

Data Collection: Creating the Foundation for Effective Decision Making

Through the years, UOP has developed an extensive data-gathering system to measure and evaluate its academic and operational effectiveness. The UOP Web site summarizes some of these activities.

For example, the Academic Quality Management System (AQMS) gathers information on academic processes and provides feedback for their continuous improvement. Consisting of a group of instruments and measures, the system is designed to monitor ongoing educational processes involving student, faculty, curricular, and administrative services. These data are used formatively for assessing quality and compliance, performing interim program diagnoses, evaluating adherence to program standards and practices, and making small-scale resource decisions. Several major continually administered surveys provide valuable assessments, which can measure the university's quality indicators. AQMS consistently includes the foundational components of the Registra-

tion Survey, the Student End-of-Course Survey (SEOCS), the Faculty End-of-Course Survey (FEOCS), and Comments to the Chair. Other assessments of academic quality are completed periodically, including special surveys of alumni, employers, and faculty, along with various longitudinal studies.

The Adult Learning Outcomes Assessment Project (ALOA) provides the university with a picture of student learning in both the cognitive and affective domains. ALOA consistently includes the foundational components of the Comprehensive Outcomes of Cognitive Assessment (COCA), the Professional and Educational Values Assessment (PEVA), the Communication Skills Inventory, the End-of-Program Assessment, and the Critical Thinking Assessment. Other assessments of learning outcomes have been completed from time to time to provide external validation (University of Phoenix, 2004).

Another important data source is UOP's Campus Performance Indicators (CPI). Updated monthly, the CPI presents indicators in numerous areas, including enrollment, admissions, finance, and academic quality. For example, in the academic area, measures include variance in grade point, class size, and percentage of faculty specifically approved to teach a course. UOP used focus groups and discussions with administrators to create the CPI indicators and to ensure that they align with the enrollment, university services, and individual campus performance goals.

The CPI presents performance by individual campus, by geographic region, and by campus size. The CPI also enabled UOP to create scenarios for different types of UOP campuses, delineating various organization charts for staffing and required positions for effective operations. "Sometimes the CPI ranks campuses; sometimes it measures against specific performance goals and benchmarks," Klagge explains. "For example, we can determine how our new campuses are

doing in different operations. Or we expect that 95 percent of our faculty members have completed the appropriate training and dean approvals to teach the course. The remaining 5 percent of faculty members meet last-minute emergencies where we need to find a classroom instructor immediately."

Data Synthesis Using the Effectiveness Sources Portal

Indeed, with all this data, it is easy to envision the drowning scenario that Pepicello alluded to. The typical UOP administrator, manager, or faculty member could easily be overwhelmed when attempting to find, access, and evaluate all the data that the previously described activities produce.

IR&E, however, is a team to create tools that alleviate this situation. It is responsible for many of UOP's data collection activities, including the Registration Survey, SEOCS, FEOCS, PEVA, the Communications Skills Inventory, and the End-of-Program Assessment, as well as alumni and employee surveys. The staff also works on creating data definitions and attributes. "The team knows where the data is parked," explains Klagge. "It takes business knowledge. It is one thing to shift data, but another thing to know data definitions and attributes, and pull in the appropriate fields to answer the information query. This is where we bridge the gap between the data collection systems and the user."

One life raft for UOP's potential data drowning users is its Effectiveness Sources Portal (E.S.P.). Rather than having to search through various hard-copy documents or online through the university information systems, administrators and managers have all relevant data and information at their fingertips for quick online access and easy analysis to support decision-making activities. For example, survey data—quantitative as well as open-ended responses—are displayed in clickable form. An administrator can now

examine the most recent SEOCS and review the statistical results along with any student comments. In addition, results can be sorted by program, course, instructor, learning center, and region. The E.S.P. lets users query data by relevant data ranges and create custom reports. Its role-based design customizes presentation, so the data and information retrieval options relate directly to a specific position's decision-making activities.

E.S.P. Design: A Closer Look

The E.S.P. offers data and information at different levels, enabling users to drill down into the data by just clicking on the appropriate link.

Level One

The introductory level displays four general categories of information, which are generally aligned with the UOP organization: university academics, university services, campus academics, and campus services. Individual roles are sorted under each of these general categories, the logic behind this design being that it reflects centralized and decentralized means of delivering either business or academic functions.

For example, under campus services, the options include the positions found on a typical UOP campus as well as regional managerial positions: admissions advisors, financial and accounting staff, academic counselors, directors of enrollment, directors of finance, directors of operations, regional directors of operations, VP-campus directors, and RVP-regional directors. By clicking on the appropriate role, the user accesses the next-level screen.

Level Two

The next level displays the information and reports useful to the tasks and decisions associated with the role selected. Currently available items in each populated category are bolded; items under development appear in lighter

text. "We show the unpopulated links for two reasons," explains Klagge. "It helps the user to know that we are still aware of their needs, and it keeps us focused on delivering these items."

Level-two information is organized into four distinct categories:

◆ *Position Descriptions and Academic Policies* provides easy access to online materials relevant to the functions of the role selected. For example, a VP-campus director would see links to position description, key decisions required, and academic policies.

◆ *Interactive Reports* enables users to produce clickable and queryable Web-based reports. Each report lets the user define his or her parameters for querying the data. For example, the VP-campus director can review and create custom reports relating to SEOCS, CPI, the Registration Survey, and other items.

◆ *Best Practices* is still under development and is the least populated area of level two. For a VP-campus director, it offers links to Apollo Corporate University courses and other resources.

◆ *Relevant Research Studies* retrieves electronic-based studies and reports of specific interest to the role. A VP-campus director can view the UOP Fact Book, quarterly registration summaries, and other items.

Level Three

When clicking on Interactive Reports, the VP-campus director, for example, can generate custom reports derived from UOP's registration survey. The VP can select general parameters by year surveyed, campus, and programs, and can drill down further by many characteristics relating to gender, student income, influence to attend, employment, average age, first heard of UOP, and several other factors. The system then displays results graphically, as charts.

E.S.P.: From Idea to Product

A confluence of several factors drove E.S.P. development three years ago. First was

the move from paper-based to electronically administered surveys. UOP used numerous paper-based surveys to support the data collection initiatives described previously. Janie Wolfe, learning center operations manager, Utah Main Campus, recalls a process awash with paper. "We handed out a hard-copy SEOCS to each student during the last classroom session of each course. The faculty member then collected the surveys into a secure envelope and delivered them to our campus resource centers. Upon receipt, we made photocopies of every survey, attached a routing slip, and then distributed them to the 15 or 20 members in each of our four campus departments for review. We also made copies and sent the originals to UOP's central administration office. We followed the same process for the FEOCS also. It was a lot of paperwork to track and to review on a timely basis, as our campus student population at the time ranged between 2,000 and 2,500 students." Now surveys are administered electronically, enabling easier data collection and accessibility.

The second factor was report overload: These and other surveys resulted in numerous paper-based reports that managers, too, had to review and evaluate. But all the data and reports led to "too much of a good thing," creating an environment in which administrators and staff members found it difficult to synthesize and apply any relevant information to decision making.

Third, administration attitudes began to change. "Until that time, our data collection efforts focused mainly on the regulatory environment," recalls Klagge. "But this really did not provide us with any knowledge about our own institutional operations and effectiveness, which could give our administrators relevant information to make decisions internally. The idea was to give administrators inside and outside views of the institution."

When planning the E.S.P.'s role-based design, IR&E's first step was to determine the constituents' key success factors by conducting 25 focus groups across UOP's various functional, academic, and administrative areas. They compiled the comments into a user wish list of information. "We asked members of each area about their measures to monitor job performance, the types of decisions they made, and the kinds of data or information that help them make those decisions," recalls Klagge. "We learned which decisions are made daily, the required amount and quality of available information, the reporting frequency, and how queryable and trended the information needed to be. We captured all their information requests. IR&E might not be able to realize everyone's requests, but we will eventually try."

E.S.P.'s Impact on Decision Making

As described earlier, Janie Wolfe has incorporated the E.S.P. into her various managerial activities. "It is so automated, easy, and accessible. I review the information that mostly relates to university service measurements and reporting in academics." These are located principally in the E.S.P.'s level-one university services category. "The E.S.P.'s four [level two] categories provide a good source of information," Wolfe continues. "For example, I can easily access information about academic policy or best practices. I can easily click on the Fact Book for a very quick reference. Report summaries are available just three clicks away."

Tactically, Wolfe uses the E.S.P. in several ways. Daily, she reviews the comment section in the SEOCS administered to students the day before. "I go to the Response Handler link in the Interactive Reports section to identify any students who want a reply to their comments in my areas of responsibilities: facilities, academic management, and academic counsel-

ors," she explains. "I research the requested information and respond back to the student within 24 to 48 hours." The information is now compiled in one spot electronically for access through the E.S.P., so that individual paper-based surveys needn't be reviewed.

Recent improvements in the online SEOCS itself also make her job easier, as students can now opt out of supplying their student identification information. Now personal information is tracked only when a student checks a box in the online survey to request a personal response to comments. Prior to that option, Wolfe and her team responded to every student who commented, because they were uncertain whether the student expected an answer. The E.S.P. combined with the anonymity change reduced the time she devotes to reviewing comments from one or two hours per day to 30 or 40 minutes. Addressing comments adds time, but "when you look at the scope of the institution and consider there is someone with the same responsibilities at each campus devoting the same amount of time to reviewing SEOCS comments, the time savings is particularly significant," states Wolfe.

Wolfe also looks at the E.S.P.'s SEOCS reporting tool to gather facility-related information: the temperature of classrooms, the classroom equipment, the facility in general, or specific student comments about an academic counselor or a service received at the campus level. "The information is filtered down to the ranks quickly," Wolfe explains. "A favorable comment about an individual is a compliment shared within the department. We also compile comments into an 'issues list' to share with appropriate staff members, as, for example, a facilities manager to inspect a projector or temperature in a certain classroom. Without this tool, we might have no other way of knowing there is an issue."

Strategically, Wolfe uses SEOCS information accessed from the E.S.P. to track patterns or trends in facilities-related issues. "There might be a specific classroom that is having an ongoing equipment problem," Wolfe states. "Comments on class size prompt us to look at planning. Issues about counseling techniques might identify areas of additional training." The E.S.P. also offers an important venue for Wolfe to gain a broader picture about her campus specifically or UOP in general. Wolfe has access to information in other categories, and thus, "I look at everything regarding faculty, enrollment, and finance," she explains. "I might not be the one responsible, but I think it provides an overall perspective that helps us, as an operations department, to gauge our future decisions and plans." Wolfe also uses the monthly CPI reports found on the E.S.P. to review her performance versus that of others on campuses, in learning centers, or across the university.

Lissa Whyte-Morazan, staff and student relations specialist, Phoenix Campus, also uses the E.S.P. SEOCS Response Handler daily to track student issues and review responses to specific SEOCS questions that relate to how students view UOP, value customer service, and rate UOP's customer service. She uses the comments to identify potential campus problem areas that might require more training.

Strategically, Whyte-Morazan uses the comments to complete a trend analysis for her area. "I sat down with each department to learn what information they would like to gain from the survey comments," she explains. Then she created a matrix for each area in which she has responsibility: resources, academic affairs, campus operations, enrollment, and FlexNet. Next, she listed categories to compile relevant comments for each area. In academic affairs, comments might be a general response about faculty or a positive or negative response about faculty delivery. "For example, if a student says that a faculty member is great, I add that

to the general comment category," Whyte-Morazan continues. "If the student writes about a specific faculty member's action, I categorize it accordingly. The directors get a monthly comment summary report that identifies outstanding areas and those that need improvement."

Evaluation: The Closing the Loop Initiative

To further refine its analysis activities, UOP launched its Closing the Loop Initiative. "One of the interesting things we learned is that we gather a lot of data and use it to improve processes, but we are not as effective in documenting what we do," explains Pat Ogden, director of academic communication and faculty development. "With the Closing the Loop Initiative, we can look back and see what we have achieved." For example, when someone uses the data provided through E.S.P. to make a decision, they can input into the Closing the Loop database how they analyzed the data and the resulting decision(s). As Craig Swenson elaborates, "It is not that we don't use the data in decisions. We move so fast that sometimes we are not as good at documenting our actions. The Closing the Loop Initiative helps us to point out some of the bigger issues, our effectiveness, and resultant changes from data analysis." The Closing the Loop Initiative is currently most successful in the academic affairs area, where administrators have launched a strong initiative to introduce and encourage its use among UOP deans and their curriculum development managers.

Next Step: The Campus Success Model

The IR&E's next initiative is its Campus Success Model. The idea is derived initially from the vision of Todd Nelson, chairman and CEO of Apollo Group, regarding UOP's success or vital factors. IR&E's goal is to align underlying success factors and measures into a matrix of seven vital factors and UOP central, campus, and functional areas to create a representative view of the institution's success. This will let administrators and staff members analyze and understand how their actions contribute to UOP's achievements. For example, if academic quality is a vital factor, the matrix will display the underlying measures. "The Campus Success Model lays out where 'true north' is and points everyone in the same direction to succeed as a university," explains Klagge. "It offers some guidance on how to get there. If you identify the measures and populate the matrix with data, then everyone understands where to head. Then an area can create its own individual strategies to achieve the success measures for its vital factors. It is not about rigidly systematizing everything, but it is about having a unity of focus and allowing the diversity below to bubble up accordingly."

Further discussions throughout UOP refined the basic framework of proposed vital factors and responsible UOP functional areas, as illustrated in Figure 1. As proposed currently, each functional area will be responsible for three vital factors; campus and corporate offices are accountable for all areas.

The following are some of the most prominent features and helpful functions of the Campus Success Model as it is being proposed (Klagge, 2005):

◆ Sorted by vital factors that are directly related to success.
◆ Focuses on progress toward established targets and goals.
◆ Rolled up into appropriate information by organizational function and level.
◆ Facilitates the management of assigned responsibilities and accountabilities.
◆ Allows management to weight various factors to respond to specific campus or regional needs.

ECAR

Functional Area	Academic Quality	Student Service	Regulatory Compliance	Tech. Support	Campus Growth	Profit Contribution	HR Mgt.
Campus Administration	▲	▲	▲	▲	▲	▲	▲
Campus Academics	▲	▲	▲				
Campus Enrollment		▲	▲		▲		
Campus Operations		▲	▲		▲		
Campus Finance		▲	▲			▲	
Corporate Offices	▲	▲	▲	▲	▲	▲	▲

Figure 1. Campus Success Model's Functional and Vital-Factor Matrix

Source: Klagge, 2005

- ◆ Permits comparisons to historical performance and system-wide averages.
- ◆ Allows for "peer" comparisons by campus age and enrollment.
- ◆ Is automatically updated daily.
- ◆ Is queryable by date range.
- ◆ Focuses the attention of corporate offices on campus success.

The system would report up-to-date measures so that managers could see their progress toward achieving their monthly goals throughout the month. "It would almost be a 'United Fund' type of thermometer where a manager can see how closely he or she is approaching his or her goals," explains Klagge. "Quarterly and historic data will also be available to present a trend or longitudinal picture, not just a static snapshot."

To define the Campus Success Model's underlying measures, Klagge is working with UOP administrators and managers. Then IR&E is taking relevant measures currently generated by the CPI and other UOP reports and populate them into the Campus Success Model matrix. "We are determining in which matrix cell to park some of the data we generate currently," explains Klagge. "If

there are empty cells, we need to determine how we will populate those cells with meaningful outcomes and the activities that bring about those vital factors." Table 1 illustrates further the Campus Success Model concept by delineating some proposed performance measures for the campus academics functional area.

Campus Success Model Pilot: School of Advanced Studies

Before institution-wide implementation, the Campus Success Model will undergo a four- to five-month pilot with School of Advanced Studies Dean Hank Radda. The School of Advanced Studies is small, enrolling just 1,600 to 1,700 students, which enables IR&E to test its concept in a finite environment.

Currently Radda employs an analyst who creates an Excel spreadsheet every month with embedded links to live data in the E.S.P. or other UOP data. Radda also began to work on a similar success matrix project within his school, for managerial and accreditation purposes. When he learned of the Campus

Table 1. Proposed Performance Measures for Campus Academics, by Vital Factor

Academic Quality	Student Service	Regulatory Compliance
1. Number of active faculty 2. Student/faculty ratio 3. GPA 4. Grade std. deviation 5. Percentage of W's per faculty 6. Faculty load		1. Percentage of courses taught by approved faculty 2. Percentage of grades entered on time
1. Percentage of best available faculty in the classroom 2. Percentage of new faculty being mentored in the classroom 3. Percentage recommending faculty	1. Faculty background rating 2. Faculty facilitation rating 3. Faculty feedback rating	1. Faculty ethnic mix vs. locality 2. Faculty ethnic mix vs. students

Source: Klagge, 2005

Success Model, it was a natural step for his area to serve as a pilot. "We are a younger school. I am trying to get a handle on the few things that I need to pay attention to and then create auto-measures to track our progress," explains Radda. "As I looked at my local project and learned about the Campus Success Model, I wondered how I could be involved. Rather than my re-creating a wheel, I found there was a wheel out there. The question was how I can customize it to meet my needs."

Radda is now working with Klagge to create a local pilot of the Campus Success Model that incorporates both parties' activities. The goal is to create a live, Web-based matrix of information in a dashboard-like format to help Radda monitor his school's performance. User-friendliness is another criterion for minimizing training and facilitating information sharing with Radda's direct reports. "I have worked with other large-scale entities, and I am amazed at the tremendous amount of data that UOP has in our systems," states Radda. "I am working with Jay [Klagge] to understand what data

already exists and what data I have, to create a confluence so we both know where we are going and where we have been, to create some benchmarks and goals, and to understand both the health of our campus and my school."

Radda's responsibilities as dean cover five areas:
- Academic affairs—the quality of classroom activities
- Faculty—how well the faculty serves the students in residence
- The academic council—how well the program meets university standards
- Financial performance
- Enrollment—the timely delivery of appropriate information to prospective students

Radda's goal is to create three or four major measures in each area to populate his school's success matrix. "The idea is to make the information timelier, so I can send up-to-date information to managers quickly, who in turn can distribute it to the front lines more quickly."

To develop the measures for his success

ECAR

matrix, Radda used a combination approach to gather both local and university input. He met with his direct reports in his five areas of responsibility, using their experience and expertise to recommend the two or three key measures that would help him understand the operational health in their respective areas. "Some of the data was readily available, using standards that are already in effect; other information was not really on their radar screen," he recalls. He met with his supervisor to understand how to match the areas priorities to his school's success matrix. Radda also consulted with UOP's functional heads—for example, the vice presidents of finance and enrollment—to understand the broader, university strategic needs of each functional area. Additionally, Radda worked with IR&E to learn about the availability and quality of relevant information in the UOP systems. Finally, on the basis of his greater understanding of the other parties' information needs, he strategically picked several areas on which he wanted to focus.

Radda plans not only to use the success matrix individually but also to share it with his direct reports, to discuss trends and determine any resultant actions. "Sharing this among the school's senior leadership team will enable us to understand as a group where we are doing well or where we need to improve," Radda explains. He noted several areas that he and the directors plan to monitor:

◆ Student feedback in terms of instructor recommendation, which is a measure that the SEOCS generates. "It's a strong variable that tells us how we are doing," explains Radda.

◆ The School of Advanced Studies also has an initiative to focus on instructor feedback to students. "Students do not just want to know that they received an 'A' on a paper, but why they received an 'A.' Or if they received a 'B,' how can they improve their efforts?" states Radda. Another

SEOCS question can measure the school's progress with this initiative.

◆ An important aspect of the doctoral program is the number of dissertation chairs. "We have specific targets on how we will grow the number of mentors or dissertation chairs, and how to train them," he explains. "Based on some of our information analysis, we are creating a mentor training program to train faculty on how to be a dissertation chair." A related area that Radda and team will track with the matrix is adequate faculty staffing.

◆ An important UOP goal is that financial aid counselors provide accurate and timely account status information to students. "The finance director can take that information back to her managers and front-line staff to review the results," states Radda. "We can use that data in a very real way to give the front-line staff a concrete goal for their performance. The managers can train their staff on the issues that prevent them from meeting those goals."

By examining data, Radda pinpointed specific times when students tend to drop out during the School of Advanced Studies' introductory course. "There is a certain percentage of qualified learners who are interested in an online doctoral degree but who drop out, withdraw, or fail—not due to intellectual capacity or subject knowledge, but because they are unfamiliar with operating in an online classroom," says Radda. "The way we facilitate the course, the amount of interaction, and the complexity of using the system overwhelms some very qualified students initially."

Radda's theory is if the school can prepare and support students well enough during the critical first three weeks of class, the dropout and withdrawal rates will decline. The school therefore began training the enrollment counselors to become clearer about the program standards and the required work.

Radda also worked with the faculty to help them understand that some bright students just do not understand how to use the technology initially. Both enrollment counselors and faculty members now understand that they may have to assist beginning students with the technology as well as with some of the intellectual standards. Radda will be tracking the school's rate of class withdrawals and dropouts as well as students' ratings on faculty members' feedback over the next six or nine months to determine the strategy's effectiveness.

The goal is to have the pilot live in the next couple of months. IR&E is putting the finishing touches on the pilot success model, and Radda has laid the groundwork for user acceptance in his area. "I've been getting my folks on board with the concept," he says. "It takes several months to convince people that this is not a flash in the pan, but it is something we will monitor and analyze on a constant basis."

Lessons Learned

UOP administrators and staff members outlined several lessons learned; some are general truisms, others are specific to academic analytics.

Defining the appropriate number of metrics is a real balancing act. As Radda created his own success model, he struggled to select the appropriate range of metrics. "The challenge is to find few enough data points to monitor that tell you enough of the story," he explains. "You have to tease out the information that is 'nice to know.' The initial dialogues with your front-line people, your managers, and your leadership offer numerous suggestions, but nailing the information balance down is hard. You are not going to get it right the first time. Initially, select a small number of data points to monitor, map them for three, six, and nine months, and then come back and refine them."

Defining the appropriate time frame is also a balancing act. Radda also found that "the tricky thing is not to measure too often and still have a sense of what is really going on." He explains, "I tried to select measures with large enough time frames so you are not going to see a major shift shorter than a month or a quarter. My direct reports have more-immediate, day-to-day or weekly measurements, but my goal is to be more strategically focused to understand area or departmental trends. The success model's purpose is to have a higher-view tracking system."

Communication and training go hand-in-hand. Despite the E.S.P.'s user-friendly design, training was still important to adoption. For example, Klagge noted that the operations areas were the E.S.P.'s heaviest users, but adoption was lagging in academic affairs. "When I met with academic affairs representatives, it became apparent that they did not fully understand the E.S.P.'s capabilities," he explained. "They were requesting access to various reports and data, unaware they could access them already through the E.S.P. I then demonstrated how they could get the information on the E.S.P. with a few clicks. Though I did communicate with the UOP campus about the E.S.P., some folks did not seem to read the information." Training—even online training—might address this issue.

Future

UOP continues to enhance its data collection and analysis capabilities. The IR&E and IT organizations have teamed up to create a datamart, with IR&E as the main customer. Klagge envisions several resultant benefits from the data mart, including the elimination of many reports, enhanced analysis capabilities, and, most especially, autopopulating reports. Currently, IR&E staff members create reports themselves using Business Object's Crystal Reports. "We are doing some good

things with Web-based interfaces to enhance queryability, but the data mart will autogenerate background data," states Klagge. "The E.S.P.'s most popular function is the interactive reporting, and the data mart will enhance this feature. The data mart has been the vision for the last two years, and it is a long time coming—it is not here yet."

In the meantime, IR&E is working to enhance the E.S.P. itself. Top priorities include the E.S.P.'s redesign to mirror the look and feel of other UOP Web sites, which requires a transition to Plumtree's portal platform. A more dashboard-like look and feel is another priority, as is greater role-based access. Currently, except for a few protected areas, E.S.P. components are open to any authorized user. IR&E would like to implement greater role-based access but is uncertain about user response to more restricted information access.

Conclusion

Effective academic analytics requires a systematic and balanced process to collect, synthesize, and evaluate relevant data and information. If the architecture for analytics is not properly structured and maintained, users may be overwhelmed by unorganized data or mislead by faulty synthesis of data. When properly structured, however, such a system promises more rational and more reliable decision processes. UOP's academic analytics system helps users transform numerous points of data into relevant information, enhancing their ability to monitor current operations and facilitate planning activities.

References

Klagge, J. (2005). Campus success model. Internal document distributed at University of Phoenix.

University of Phoenix. *Outcome measurements.* Retrieved August 8, 2005, from http://www.phoenix.edu/mediarelations/outcomes.aspx