



Enterprise Systems at Smith College

ECAR Case Study 10, 2002

John Voloudakis, Cap Gemini Ernst & Young

Case Study from the
EDUCAUSE Center for Applied Research



EDUCAUSE

4772 Walnut Street, Suite 206
Boulder, Colorado 80301
www.educause.edu/ecar/

Enterprise Systems at Smith College



EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

The mission of the EDUCAUSE Center for Applied Research is to foster better decision making by conducting and disseminating research and analysis about the role and implications of information technology in higher education. ECAR will systematically address many of the challenges brought more sharply into focus by information technologies.

Copyright 2002 EDUCAUSE. All rights reserved. This ECAR Research Study is proprietary and intended for use only by subscribers and those who have purchased this study. Reproduction, or distribution of ECAR Research Studies to those not formally affiliated with the subscribing organization, is strictly prohibited unless prior written permission is granted by EDUCAUSE. Requests for permission to reprint or distribute should be sent to ecar@educause.edu.

Enterprise Systems at Smith College

Preface

The EDUCAUSE Center for Applied Research (ECAR) produces research to promote effective decisions related to the selection, development, deployment, management, socialization, and use of information technologies in higher education. ECAR research includes (1) research bulletins—short summary analyses of key information technology (IT) issues; (2) research studies—in-depth applied research on complex and consequential technologies and practices; and (3) case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities.

ECAR investigated the state of enterprise systems in higher education and issued *The Promise and Performance of Enterprise Systems in Higher Education*.¹ This research was conducted by a team of researchers from ECAR and from Cap Gemini Ernst & Young. It was undertaken in the five phases described below.

Consultation

Researchers consulted with administrative information systems leaders and enterprise resource planning (ERP) provider officials to identify and validate the most

interesting research questions and hypotheses for framing the construction of a quantitative survey instrument. In particular, the EDUCAUSE Advisory Group on Administrative Information Systems and Services (AGAISS) was consulted. These discussions resulted in a research framework, finalized in March 2002, that allowed development of an online survey to begin.

Online Survey

An online survey of 480 colleges and universities was conducted to establish their motivations, expectations, insights—and ultimately their satisfaction—concerning the use of institutional student, financial, and human resources systems over the past seven years. The populations surveyed included 1,473 EDUCAUSE member institutions, 219 institutional members of the Council of Independent Colleges, and 1,288 institutional members of the American Association of Community Colleges.

Telephone Interviews

Researchers conducted intensive telephone interviews with more than 40 IT and functional executives and managers at 23 selected institutions. Those institutions participating in this research phase had either

implemented ERP systems within the past seven years or were currently in the late planning or implementation stages of these projects. All subject institutions are members of EDUCAUSE.

Discussion

Researchers organized a discussion “summit” involving 25 participants from 18 comprehensive or research-intensive institutions, as well as participants from ECAR and Cap Gemini Ernst & Young. Invited participants were senior executives known for having sponsored and led major enterprise system implementations at some of the most complex institutions in the world. Participants were asked to validate, refute, clarify, and extend preliminary descriptive statistics from the online survey. In addition, they were asked to summarize key implementation lessons, describe their institutions’ visions and goals for enterprise systems, and discuss the possible future of enterprise systems in higher education.

Case Studies

Researchers conducted in-depth studies involving six institutions that have undertaken enterprise system implementations noteworthy for their scope or success and from whom others may learn effective practices. Additional research—most of which involved on-site visits—covered four institutions that chose to defer or eschew packaged ERP solutions, preferring instead to focus on alternative enterprise strategies. Such strategies include Web enablement of information, transactions and services, data warehousing, and workflow management.

The present case study, conducted as part of the fifth phase of the research, was undertaken to draw on the direct experience of those able to provide insights into what has—or, as appropriate, what hasn’t—worked in enterprise system implementa-

tions. It is assumed that readers of this case study will also read the primary study, which provides a general context for the individual case study findings.

ECAR wishes to thank the leadership of Smith College for sharing their time, thoughts, insights, and records with us. In particular, ECAR thanks David Baker, systems analyst; Lorraine Bates, systems analyst; Kimberly Butz, former director of administrative technology for Smith College (now director of administrative computing at Deerfield Academy); Ruth Constantine, vice president for finance and administration; Cheryl Donaldson, director of desktop technology; Tim Donelan, systems analyst; Janet Hukowicz, systems analyst; Herb Nickles, executive director, information technology services; Kevin Kerwood, human resources manager; Tricia O’Neil, registrar; Bill Sheehan, chief accountant; Audrey Smith, director of admissions; Ruth van Erp, director of advancement services; and Sylvia White, systems analyst.

Introduction

Smith College was an early implementer of Systems and Computer Technology (SCT) Corporation’s Banner product. Smith’s implementation began in 1994 and took approximately four-and-a-half years to complete. Smith implemented all of Banner’s major modules, including Student, Admissions, Finance, Financial Aid, Human Resources, and Advancement. SCT’s BannerWeb product, which provides browser-based access to many features within Banner, was also implemented as it became available.

Case Background

Smith College is the nation’s largest private liberal arts college for women. The campus is located in Northampton, Massachusetts. A highly selective institution, Smith College has been strongly committed to the education of women at the undergraduate

level since 1875 and admits both men and women as graduate students.

Approximately 2,500 undergraduate and 150 graduate students currently attend Smith. The college employs 285 faculty and approximately 965 staff. Smith offers 45 undergraduate majors, through 37 academic departments and programs. The student-faculty ratio is 9:1.

IT Organization

Smith College maintains a centralized IT organization, known as Information Technology Services, headed by Herb Nickles, the executive director of ITS. With a staff of about 50 employees, ITS encompasses

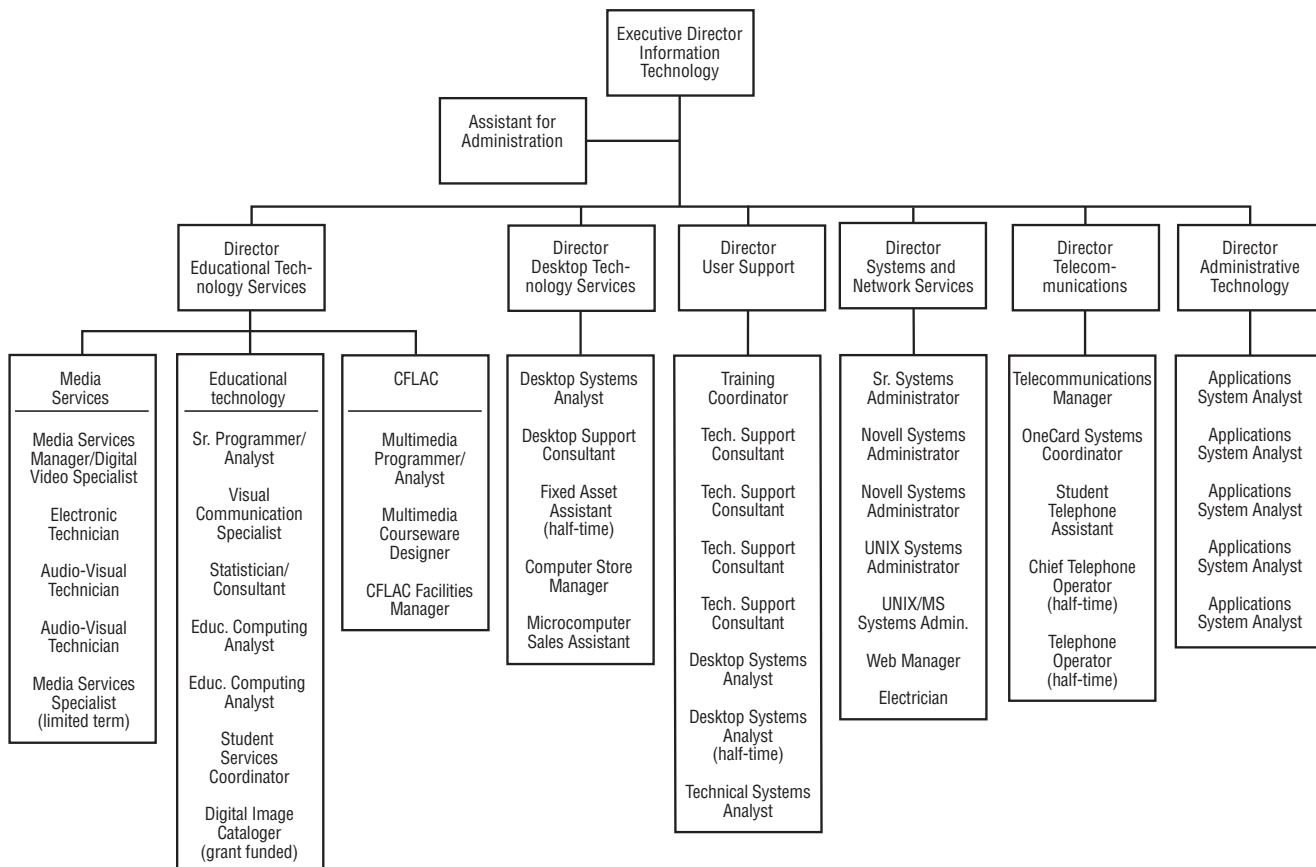
- ◆ Administrative Technology Services,
- ◆ Desktop Technology Services,
- ◆ Educational Technology Services,

- ◆ Systems and Network Services,
- ◆ User Support, and
- ◆ Telecommunications and OneCard Services.

Figure 1 shows the reporting structure of the different services.

In addition to the support they receive from ITS, each major administrative department has a departmental systems coordinator (DSC) who is physically located in that department to provide specialized support for the department's administrative computing needs. Nickles explained, "We have designated IT professionals in all the major departments, who work in that department. So they are a subject area specialist as well as an IT specialist. And that's worked extremely well for us, because we don't have to provide that support from the central group. We now have DSCs in HR [human

Figure 1. Information Technology Services Organizational Structure



resources], admissions, advancement, student financial services, registrar, the libraries, the science center—and there are others.”

Technology Profile

Smith College implemented the Banner suite of administrative applications from SCT, including the modules for student administration (including registration and student records, student accounts receivable, prospect and admissions, financial aid, and housing), financial records, human resources, and alumnae and development. Smith currently runs Banner on an Oracle database in a Digital UNIX environment. In May of 1994, Smith began a phased implementation of Banner, and all modules have been in use since the summer of 1998. There are approximately 500 users of the Banner applications on campus.

In addition, Smith has implemented SCT's BannerWeb product, which provides a Web-based interface to the Banner system. There are three main aspects to this functionality.

- ◆ BannerWeb for Students gives students access to grades, transcripts, financial aid and billing data, course schedules, and online registration.
- ◆ BannerWeb for Faculty provides faculty members and advisors with the ability to view their teaching schedules, check advisees' schedules, view and print class lists, view course schedules, view advisees' transcripts, and register advisees for courses online.
- ◆ BannerWeb for Employees is the most recent addition to the BannerWeb@Smith suite. It gives Smith employees access to their payroll and benefits information, as well as their personal demographic and employment data.

Active students, faculty, and staff access BannerWeb through a Verisign-certified secure Web server. BannerWeb has been available to the Smith community since the spring of 1999.

Drivers of Smith's ERP Implementation

In the early 1990s, Smith College's administrative computing environment was a set of best-of-breed applications that had been built or acquired over time. Smith's student information system (SIS) was a home-grown COBOL application. Finance and HR used highly customized versions of products from Information Associates (IA), for which the vendor was phasing out support. Smith's Advancement Services Group used the BSR Advance System (see Table 1).

This legacy environment posed a number of challenges for Smith.

- ◆ *Limited integration among the legacy systems.* Smith often stored data in more than one system, leading to data integrity issues, and interfaces between the systems were difficult to maintain. “We had legacy systems from multiple vendors,” said Kim Butz, former director of administrative technology for Smith College, “and we wrote the interfaces in-house for the most part. And Smith was dissatisfied with several of the interfaces. Some of the systems had been sort of kludged together, or, in some cases, there were manual interfaces between the systems.”
- ◆ *Level of customization in the legacy environment.* The legacy applications were so heavily customized that it was extremely difficult to install vendor-provided upgrades. “As a result, Smith ran five-year-old versions of the software of some applications,” explained Butz. “We couldn't take advantage of any of the functional upgrades of the system because they were so heavily modified.” In addition, the in-house staff wrote the SIS applications, and it became increasingly difficult to maintain them as those staff left the institution. “We had some systems that had really outlived their lives,” explained Ruth Constantine, Smith's vice

Table 1. Snapshot of Smith's Legacy Administrative Applications

Functional Area	Product Installed	Level of Maintenance Required	Level of Vendor Support	Level of User Satisfaction
Finance	Information Associates's Financial Records System	Extensive	Limited, no updates or new features	Somewhat satisfied, with many enhancement requests outstanding
Human Resources	Information Associates's Human Resources System	Extensive	Limited, no updates or new features	Somewhat satisfied, with regular submission of enhancement requests
Student	Homegrown	Extensive	None	Varies by area, and ranges from mostly satisfied to highly dissatisfied
Advancement	BSR Advance	Low	Full	High

president for finance and administration. "We brought back retired people who had helped write them; that was the only person we had, a prior employee, to keep our financial aid system working. Talk about a vulnerability."

- ◆ *Maintain its legacy environment.* "Because Smith ran applications from multiple vendors, there was very little cross-training among the technical staff. We had experts—one staff member knew the student systems but didn't know anything else. We had no one to back him up. Another knew the payroll system; nobody could back him up," said Butz.
- ◆ *Limited reporting capabilities available in the legacy environment.* According to Butz, "There was some pretty heavy dissatisfaction among the user offices in reporting and their reliance on the IT organization to generate reports."
- ◆ *Lack of support for newer technologies.* "The legacy applications were all character-based," said Butz, "and the ven-

dors were not offering any client-server or [graphical user interface], and it didn't look like that was going to be available." These challenges led to the decision to purchase a new administrative system.

Preparing for ERP

Before selecting a new administrative system to implement on campus, Smith addressed planning for the implementation through a structured approach. Only after determining the functional requirements of a new system did Smith representatives begin to meet with vendors. The college faced tight resources in deciding how to fund the project and chose to "borrow" against future IT spending to cover costs.

Planning

Given the issues and risks associated with the legacy environment, there was consensus among most of Smith's administrative offices that the institution required a new administrative technology solution. To plan for the transition, Smith assembled a steer-

ing committee, called the System Replacement Committee. This committee's members included about a dozen key administrators representing Smith's administrative functions and was co-chaired by Kim Butz and the controller. Other members included the director of admissions, the director of financial aid, the director of HR, the director of advancement services, the registrar, and the bursar.

Smith conducted a needs assessment and created a detailed functional requirements document before launching into vendor selection. "Before looking at any vendor, I met with every administrative department on campus and did two things," said Butz. She spent between one or two days with each department. "We did a basic process flow of information in and out of their office, looking at how information came into their particular department, how it was maintained, and then what information was disseminated out of that department, and to whom. And we also looked at their functional requirements for a new system."

The result was a fairly detailed, 50–60-page functional requirements document. "In some areas, we got as specific as what data elements they were looking to maintain, what kinds of information they were looking to exchange. Other areas described specific business processes in their offices that they wanted to automate. We wanted to ensure all the codes in the new system have tables that validate them, so we are consistent in our data entry. Some of the older applications didn't have that, so the data was not in very good shape."

In addition, Smith created a set of high-level technical requirements at the steering committee level that outlined a number of guiding principles for vendor selection. These included criteria like use of a third-party relational database, preferred operating systems and hardware platforms, and so on.

Package Selection

Once Smith gathered the functional requirements, the committee set out to find a vendor that would meet the institution's needs. They began by doing general research to find out what vendors were serving the higher education market. They spoke to colleagues at other institutions to find out what applications they were using and contacted professional organizations like CAUSE to get additional information. This initial research yielded a list of "about 30 vendors that, on paper, offered systems that could be considered," said Butz.

"We knew we wanted an integrated system," said Constantine, "so that narrowed the field. There were at most only five or six viable systems initially that met our requirements." Once they used this requirement to winnow down the list of possible choices, the committee undertook additional research to further reduce the list by measuring the vendors against some broad selection criteria. By applying these criteria, and through conversations with colleagues who had implemented these systems, Smith eventually narrowed the list of candidates to systems from three vendors: Datatel, Information Associates, and SCT. The three companies were invited to come to campus and demonstrate their products' capabilities. Before the vendors came to Smith, the field narrowed further when SCT purchased Information Associates. "We decided that if we were going to go with SCT as a vendor, we would look at the Banner product," explained Butz. SCT and Datatel visited Smith, spending three to four days presenting their products. After the initial demonstrations, "Datatel was the first choice of the users," said Butz.

At this point, the selection process went on the road, as the entire steering committee visited the vendors' corporate headquarters to gather additional information and meet the developers and support staff. They

also made site visits to several of each vendor's clients. "After the site visits, the users did a complete reversal in their assessment of the vendors," Butz said. "What we found was, in our experience, what Datatel demonstrated was not what any of their users were using. And what we saw at the Banner demonstrations was what we actually saw when we went in the field and met the users.

The site visits were invaluable, especially for users who haven't been through this before. Most of the steering committee had never been through this process before, and it was fairly easy for the vendors to wow them during the demonstration, and it was very eye-opening for them to go and see what actually was working in production, and to understand the difference—how something could look really good in the demo, but there not be anything behind it, or for some reason, the clients hadn't been able to take advantage of the new releases."

In addition to its functional and technical requirements, Smith also looked at several other key criteria in making its software selection. "The cost happened at that time to be pretty much the same for the different systems that we evaluated," explained Butz. "It certainly didn't differ enough that it was a driving factor. I would say that equal to functionality was our comfort in the company and the R&D that they were doing, and what we felt about them as an organization that we would have a maybe 20-year relationship with, that we felt comfortable that they were continually enhancing the product, and that by signing on with them, we would have a product that would last for 20 years. Cost wasn't a big factor, but ongoing maintenance, ongoing support, and ongoing development of the product were big factors."

Smith's steering committee created several functional project teams to conduct detailed evaluations of their specific modules.

Following the site visits, these teams submitted written recommendations to the steering committee. "Fortunately, it was a unanimous recommendation," said Butz. "Every project team chose Banner, so the steering committee didn't have much trouble making a decision." Then the steering committee presented their recommendation to the college's Board of Trustees, which approved the purchase of SCT Banner. From start to finish, Smith spent approximately six months on planning and software selection.

Project Funding

To fund the purchase and implementation of the Banner system, Smith "borrowed" against future IT spending and paid for the implementation out of its operating budget. Smith's ITS group controls a technology budget that is a pool of money from which all computer hardware and software for the institution are purchased. "We had to keep it simple in terms of funding, because resources were pretty tight. So what we did is, we borrowed against that fund in future years, and we planned out what our needs were going to be in each of several areas," said Constantine. "So Herb [Nickles, Smith's executive director of ITS] and his directors really had to balance the needs for other administrative software and replacement of other administrative machines to fit this Banner purchase into that budget." Smith purchased its software outright from SCT, rather than financing it over time.

Implementing ERP at Smith College

Smith's Banner implementation took approximately four-and-a-half years and was not without its challenges. However, through effective project governance, skilled project management, and the ability to meet and overcome the challenges faced, Smith ultimately succeeded in implementing the full suite of Banner modules.

Project Governance

Kim Butz managed the Banner implementation. The Software Selection Steering Committee also oversaw the implementation. The steering committee met at least twice a month over the duration of the implementation, sometimes more often depending on the stage of the project. "Having the same steering committee for the software selection and the implementation was really good," explained Butz, "because we had the continuity of the people that had been through the whole process and understood the issues, that were actually going through and leading the implementation."

Project teams from each major functional area, corresponding to Banner modules, reported to the steering committee. A member of the steering committee chaired each project team. A number of work groups were created under each project team to address specific functional areas. The work groups reported to the project teams, and the project teams reported to the steering committee.

Implementation Team

As the implementation was conducted in phases, Smith deployed the project teams according to the module being implemented at the time. Each team consisted of staff from the corresponding functional department, along with several members of the ITS administrative technology staff. "I was on all the project teams," said Butz, "and two of the analysts from the administrative computing department were on each of the project teams, so we started right then cross-training the staff. Three IT people belonged to every one of the project teams." By assigning the ITS staff members who supported the legacy applications in each department on the Banner project teams for those departments, Smith was able to leverage their experience during the project. David Baker,

systems analyst, explained, "One thing that I think helped us is that we already knew the applications. Not the Banner applications, but the business applications. I had been working, for example, on HR and payroll prior to Banner, so I knew the business, so to speak. I knew that particular set of users. Plus, I was qualified to get the legacy data from our old payroll system, which I had maintained, and bring it into our new system. I think if we had tried to switch functionality at the same time as everything else, it would have been very difficult."

Internal resources performed most of the work on Smith's Banner implementation. "We did not purchase a lot of vendor services," explained Butz. "They provided training and consulting support. We did everything else ourselves. SCT initially trained us and conducted a follow-up session, which they called consulting, to help us figure out how to use the system and match our business processes to the system." Later in the implementation, however, Smith hired consultants to assist in report creation.

Project Management

Smith did not use a complex project management structure to execute the Banner implementation. "It was fairly informal," said Butz. "I used MS Project to manage the project. Each group was assigned tasks. We had the reporting structure through the committees, but I wouldn't say we used any formal project management techniques."

To develop the project work plan, Smith used input from various sources to develop an accurate timeline and logical sequence of implementation phases. Butz was an experienced implementation manager, having come to Smith from a software vendor. To supplement her knowledge, Smith reached out to other institutions that had implemented Banner to learn from their experi-

ences. They also received advice from SCT, particularly concerning the order of the implementation phases. According to Butz, “We based our implementation on a couple of things. One was what interfaces would be needed depending on the order in which we implemented things. But the other was the state of our legacy applications. We had a couple places where we were in dire situations with our legacy applications, and we had some others that were running fairly well. So when we looked at putting our implementation plan together, we tried to consider those which really needed to be replaced first, but at the same time, made sure we weren’t doing things that didn’t make sense in terms of what interfaces would be needed or what feeds would have to be in place, depending on the order that we put things in.”

Part of Smith’s project management approach involved maintaining strong communications with the campus throughout the implementation. This was accomplished through a number of venues. The project team circulated minutes for every project-related meeting for review by any interested party. They published a “Banner Bulletin” newsletter quarterly for distribution to the faculty, staff, and students. Herb Nickles reported regularly to the president and senior staff. In addition, Butz and Nickles made several presentations to the Board of Trustees on project status, and Butz also spoke at a number of faculty and all-staff meetings over the course of the project. “I think everyone was pretty well aware of what was going on,” explained Butz, “and while I wouldn’t say we did as good a job as I would have liked, we did do a decent job communicating.”

Smith had already developed a detailed set of functional requirements as part of the software selection process, and these were used to help guide the implementation with-

out additional work. Besides preparing the work plan and identifying the project team, Smith did very little up-front preparation for the implementation, with the exception of ordering and installing new hardware to host the system. “In comparison, one of the things SCT has changed over the last eight or nine years is their project-management approach,” said Butz. “Now it is much more organized. Then I would say it was pretty informal. We did have a project kickoff meeting where everyone was introduced, but then we pretty much dove right into it.”

Implementation Objectives and Approach

Smith did not create a detailed set of business objectives or success measures for its Banner implementation. “At the executive level, the decision was more whether to implement the system, rather than to determine the success measures, because finances were tight,” explained Constantine. “So, at the executive level, we didn’t make it goal oriented.” Smith’s executives did establish two guiding principles for the implementation:

- ◆ First, as defined in the planning phase, they knew they wanted a fully integrated system. “We knew the value of integration because we had some of that with our IA legacy systems,” said Constantine. They decided to require all administrative departments to utilize Banner, in order to obtain the benefits of a fully integrated system.
- ◆ Second, they chose to implement Banner without any customizations—“vanilla”—in order to avoid the issues that had been endemic to Smith’s legacy environment. “I think the decision to not customize was fairly easy because we saw the situation that we were in because of what we had done before in modifying our legacy system,” said Butz.

"I think Smith got themselves into such a position with the old systems that [it] really wasn't that difficult to make the decision to go vanilla."

At the steering committee and project team level, the major objectives for the implementation were to hit the timeline and budget goals for the project. In addition, the functional requirements document served as a guide for specific functional goals the teams were trying to achieve.

Implementation Process

As laid out in the planning phases of the project, Smith College implemented the full suite of Banner modules across its functional areas. In keeping with its phased project plan, Smith conducted the implementation in five overlapping phases: (1) student, including admissions, (2) finance, and (3) financial aid. Advancement and HR/payroll were scheduled to go fourth and fifth, respectively, but the order was switched at the request of the departments, due to readiness issues. Each of these phases ran between 9 and 18 months, depending on the module's complexity. Smith started each successive phase in a staggered fashion. "We were about six months into the student implementation when we started finance," explained Butz. As each phase was finished, the modules were brought live in a staggered fashion.

Although Smith implemented the full suite of Banner modules, it did not necessarily implement all the available functionality available in each module from the start. Some areas went live with the level of functionality available in the legacy system and added more functionality later. For example, this approach was used for the HR module, where the initial goal was "being able to pay people," according to Kevin Kerwood, human resources manager. A similar ap-

proach was taken for the student module, according to Tricia O'Neil, Smith's registrar. "Our goal was to register students in April of 1995, and we did exactly what we needed to do to get to that point, and then came along with some of the other things."

On the technical side of the implementation, the project teams worked to get the software installed, configure it according to the prescribed functional requirements, and perform the data conversion from the old systems to Banner. In addition, the technical staff managed the transition from legacy flat-file databases to an Oracle relational database, an operating system change from VMS to UNIX, and a move from character-based terminals to PCs on every desktop. To handle the challenges of maintaining a client-server application on hundreds of desktops, Smith took a networked approach. "We set up an application server," explained Butz. "So instead of installing the application on every desktop, we only installed a small runtime and had a server serving the application. One reason we decided to do that was the frequency the upgrades came out. You couldn't upgrade 500–600 machines every time SCT released a new upgrade."

Some areas undertook business process change, even though business transformation was not an explicit project goal. Butz explained, "We made the decision not to modify the system in any way, so we went live with the baseline version of the application. And that meant, in some areas, that they had to make some modifications to the way they were doing business. I would say the system is pretty flexible, because it is rule based and parameter based, so we didn't have to go through any major overhauls of processes, but there were areas where we had to learn to do things a little differently."

In addition to these required process

changes, Smith made some efforts to adopt best practices along the way. “Smith is an old institution,” said Butz, “and, like many others, has been doing things for hundreds of years and doesn’t even know why. And this gave us an opportunity to evaluate the way we do business and determine whether there might be a better way to do it.”

Smith used a “train the trainer” approach to train its users. SCT provided training to a limited set of Smith users, who then were expected to go back and train their colleagues. “We had people here who were learning and teaching,” said Ruth van Erp, director of advancement services, “so that really helped and gave people a real sense of ownership. And for the first year, we assigned what we called ‘Super-users’ the responsibility of teaching different people in advancement [services] those areas. So any time anyone had a problem or a question, or needed training, they would go to the Super-user in their area first. If the Super-user couldn’t help, then the Super-user would call one of the systems people, and that kept the systems people from having to deal with 80 people, instead of just 6.”

This approach worked, according to Bill Sheehan, chief accountant for Smith College, but, he added, “We didn’t have a lot of time to practice. That was the only unfortunate thing. People’s days were already full, so the expected practice never really took place, because we all already had a full plate of regular chores.” The advancement services implementation addressed this by using dual systems for six weeks. “Everything we entered into the legacy system, we entered into Banner, and then we ran reports in both and checked against each other,” explained van Erp. In addition to testing, this provided the users in advancement services the opportunity to become familiar with the system in production, without hav-

ing to depend on it completely at first.

To successfully support the implementation, Smith’s administrative technology staff needed significant training to learn the new applications, as well as new technologies like Oracle. However, unlike in the user departments, where learning Banner was viewed at least in part as another unwelcome task in an already busy day, the technology staff welcomed the opportunity to learn. Tim Donelan, systems analyst, explained, “Our jobs always change. This was a bigger change, but we did it all together. We took Oracle courses; we took SCT courses. Smith spent a significant amount of money to re-train us on the new tools. But that’s [the] nature of our job—we’re always learning new tools. So I didn’t find that part difficult. That’s the good part. But the thing was all of us did it together, so it was easy to get help.”

Implementation Challenges

While the implementation at Smith was considered a success, implementing an enterprise system is a complicated endeavor, and Smith overcame a number of challenges to complete the project.

Reporting

The largest problem Smith faced was in the area of reporting. According to Butz, “We underestimated the reporting effort. We underestimated how much more complicated a relational database was going to be for our end users, and we underestimated the number of reports that we had in the legacy system that we had built over 20 years and people had forgotten about. And we really didn’t devote enough time in our implementation to conduct a good report audit and assessment, and didn’t have enough time built in for the development of all the reports that were needed. So we scrambled in that area. And because our

implementation occurred before data warehousing came into vogue, we didn't consider that or that kind of approach. We wrote reports against the live database tables, and in hindsight I wish we had done a better job in that area."

This miscalculation caused significant problems for the Smith implementation. "We did our report writing after the conversion," explained van Erp. "It was very difficult. It took more effort to achieve the same results, but our ability to raise money did not change. The fundraisers were sometimes blind because they couldn't get their reports. For the first six to eight months, the fundraisers used many fewer reports than they were used to."

This opinion was reiterated by the registrar's office. O'Neil explained, "One of our biggest mistakes was that we didn't handle the reporting aspect in a timely manner. We went live before we had rewritten reports, and so we had a lot of trouble getting information out of the system, and it took us a long time to get that worked out."

Inadequate Staffing Levels

Due to tight financial resources at the time of implementation, Smith did not hire external consultants. As a result, the project staff worked on both the project and their day-to-day jobs simultaneously. As explained by van Erp, "Some people were in charge of data mapping, and training, and doing their regular work, and writing reports in a completely new system, and it was too much."

Smith addressed this in several ways. Some departments hired temps to provide coverage for their staff while they worked on the project. Butz explained, "We hired temps who came in and, instead of having temporary people come in to work on the project, we had the permanent staff work on the project and had temps come in to help maintain day-to-day business operations, so that we weren't training temps on

the new system, who would then leave." In other cases, departments had to balance their normal operational needs with the special needs of the project. "That was one of our biggest hurdles," said Butz, "trying to figure out how to balance that as we went. But we got the buy-in of the senior staff. We made some decisions along the way about things that weren't going to get done. We skipped some production-related things that people determined could be skipped for a year, so that we could concentrate on the implementation." While Smith offered no bonus or stipend program to entice employees to stay, it experienced remarkably low turnover as a result of implementation activities.

Introduction of New Technology

In the move from a legacy environment to Banner, Smith changed its core database technology from the flat files associated with the legacy systems to an Oracle relational database, with which ITS had no experience. However, due to a freeze on hiring full-time employees at the time of the implementation, Smith could not hire an Oracle database administrator (DBA) to support its new system. To address this issue, "We had to be pretty creative on the technical side," Butz explained. "We ended up with six mini-Oracle DBAs. Each one of the applications specialists was trained on one part of the DBA tasks and took responsibility for that. They did the DBA work as a team." This approach allowed Smith to support the new applications without adding staff, while also reducing their reliance on key staff to keep their applications running.

Data Conversion

Issues with data conversion arose in areas of the implementation. In advancement services, it was difficult to convert the data because Banner handled the data so much differently than Smith had in the legacy envi-

ronment. In the case of the student module, data integrity issues with older data made it impossible to convert historical data. Smith used several approaches to compensate for the data conversion difficulties. In the case of the student module, the implementation team converted one year of historical data from the legacy system into Banner and transferred the remainder onto a CD, for as-needed user access. Since advancement services requires five years of historical data, it converted one year of data to Banner and left the legacy system running for users to access historical data until Banner accumulated enough history for their needs.

Sizing Hardware for Adequate Performance

“It was our experience that the hardware recommendations from SCT for the Oracle and Banner servers were consistently underpowered,” said Nickles. “It seemed that once we went into production with a software module or upgrade, we needed to add more resources to maintain an acceptable level of service.”

Smith encountered a similar issue at the desktop level while implementing the advancement module. “We had to upgrade all the machines,” explained van Erp. “We didn’t know that the PCs we had weren’t going to be able to deal with Banner very well. And basically what happened was, people’s jobs slowed to such a standstill that they brought in their knitting, to knit while the forms were refreshing. I’m not exaggerating. Once we got the new wiring, we had to get new PCs, and once we got that settled, the speed was good, and we could do our work.”

Changing Application Workflow

There were issues in moving from a highly customized legacy system that worked exactly the way the end users wanted, to a vanilla implementation of a

packaged system that significantly changed the application workflow. “One of the chief complaints from the data entry folks [was] that things that used to only take one or two steps were now going to take six or eight or ten steps,” said van Erp. “And things that they could enter onto one form in the last system now took six or seven forms. So it really increased the amount of time spent on each individual record.”

Kerwood witnessed the same experience in HR. “In the old system, there was a field called ‘Benefit FTE’ on the CE2 screen, which staff members accessed directly to learn about an employee’s benefit package. When we moved to Banner, there was no direct way to ascertain someone’s FTE. You have to look here, and look there, and there were definitely efficiencies lost.” However, Kerwood saw that this problem at least partially corrected itself over time, as the employees had more time to use and become familiar with the system. “But once people got used to looking in those places, the efficiencies came back. Banner does provide that, it’s just a little bit different. So absolutely there was a loss of efficiency, but within about a year, we were back to where we were with the legacy system.”

Faculty Resistance

Some of Smith’s faculty opposed spending large amounts of money on an administrative technology project. “I had a fair amount of sales work to do with them,” said Butz. Additionally, some of the faculty members were reluctant to take advantage of Banner’s new capabilities. As Butz explained, “We implemented a faculty Web module. We thought it would be great because they could get on the system and complete tasks that they had relied formerly on other people to do. But a lot of faculty members weren’t all too pleased with that—they felt we were asking them to be clerical staff.”

Implementation Performance

Overall, Smith's implementation was considered a success, according to the institution's senior management. The majority of implementation goals, including moving to a supportable technology environment, implementing without customizations, and implementing on time and at a reasonable price, were accomplished.

Project Timeline and Budget

The initial timeline developed for the implementation called for it to be completed in about three years, according to Butz. The actual implementation timeline for the original modules was about three-and-a-half years. However, about halfway through Smith's implementation, SCT introduced its Web modules, and Smith elected to expand the scope of the implementation to include these components. The entire implementation was completed in four-and-a-half years.

Smith did not go into the implementation with a detailed budget laid out. "We basically had identified the items up front that we were able to spend on," said Butz, "and had some general budget constraints, but they weren't tracked down to a detailed level." For the most part, Smith was able to keep its costs low during the implementa-

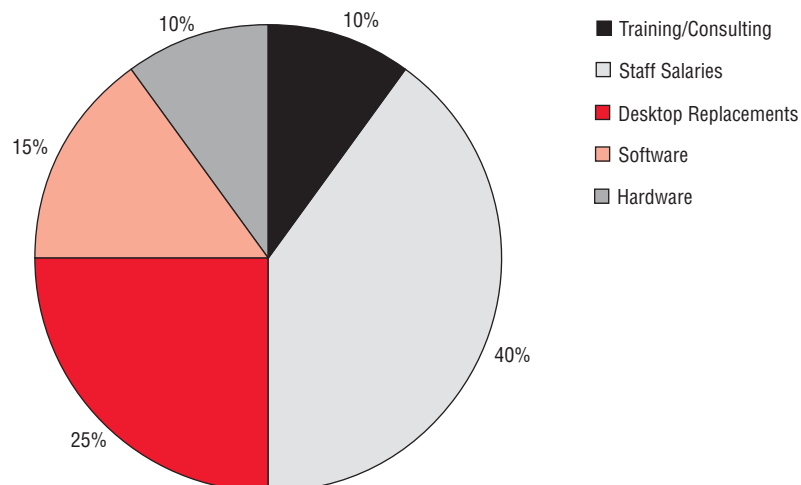
tion primarily by using internal staff and by not including major business transformation in the scope of the project.

According to Nickles, the college spent \$2.85 million on the original implementation. This figure includes all expenses paid for by ITS, including the purchase of the Banner software, and server and desktop hardware, along with training, consulting, and the salaries and benefits of the ITS staff who worked on the project, as broken out in Figure 2.

Nickles's figures do not include costs incurred by the departments, which include report writing by department staff or consultants they hired, or costs for department staff who were involved in the implementation in other ways. Constantine estimates that the institution spent a total of between \$5 million and \$6 million on its implementation, including all expenses. Neither of these figures includes purchases made after the original implementation, such as server upgrades.

One area in which Smith encountered overruns was report development, where the initial project planning had significantly underestimated the effort. "When we purchased the software, we did not understand what we were going to spend on report

Figure 2.
ITS Contribution
to Implementation
Costs



writing. We completely didn't understand it," said Constantine. "We understood that the reports that Banner came with were somewhat limited, and that's probably where we imagined more of their canned reports meeting our business needs much more than they did once we really got into implementing that component. So once we were in a component and understanding it more fully, we realized the extent of the report writing we would have to do."

To compensate for the additional effort involved in writing these reports, funding was approved to bring in external consultants on a case-by-case basis for each module. While these requests were never denied, "Sometimes the funding was stretched over a longer time period than the area might have wished," said Constantine. "Sometimes it was cut back, and we would say, 'What can you pony up to help with that?'" Because the additional funding was made available, Smith was able to clear the hurdle posed by reporting without significant impact on project timing.

Integrated Applications

Smith identified implementing an integrated, uncustomized set of administrative applications as a guiding principle of the implementation. Smith's senior executives supported this goal strongly and stood behind the steering committee to ensure no deviations from this path, despite arguments from many department on campus. "We had to stand behind this decision, but it is tough to hang in there sometimes, especially when you are given a specific example of what you are going to lose," explained Constantine. "An example is advancement [services], which was not considered one of Banner's strongest points. If they had had an opportunity to do so, advancement would have gone off and chosen a best-of-breed solution. And so it took the senior team's tough stance to prevent this; otherwise, it's so easy

to be seduced by the opportunity that a best-of-breed approach offers."

In one area where Banner was weak at the time—management of unitized endowments—Smith took a very proactive approach to ensure that they could implement the system without having to customize or look to another vendor. Smith, along with six other colleges, initiated an agreement with SCT to develop jointly an endowment module that works with unitized endowments. "We essentially did a cost-sharing approach with SCT," explained Constantine. "So we subsidized some, they subsidized some, and as they went out and sold their product, they gave some money back to us from the sales. So we ended up with an investment, but it reduced the net investment we had made in Banner. And that was pretty transformational, because none of us had, in the financial area, a good unitized endowment system that they hadn't just created on their own."

No Customizations

Smith successfully resisted the temptation to make changes to the core system. "One of the things I think people did really well was sticking with the decision to go with the baseline product and not to modify it, even when that was a little difficult or uncomfortable at times," said Butz. "What we decided up front was that each department would have to use the system for one year—through their full business cycle—before we would consider any modifications. And it ended up that after implementing all 5 base modules and all the Web modules, that there are about 10 form or program modifications campus-wide."

This goal also needed strong executive support. "The steering committee had to say 'no customizations' over and over again, and I was unpopular for a while, when people would say, 'This doesn't apply to me,'" explained Butz. "Our CFO understood better

than anyone else. Ruth [Constantine] was a big supporter of going plain vanilla, and when I needed her to help back me up on that, she was always there.”

While vanilla Banner was able to meet many of Smith’s needs, there were areas where Banner did not have functionality or where users needed functionality beyond what Banner provides. In these cases, Smith has used several approaches to avoid making customizations to the base code:

- ◆ Create new forms to supplement those in Banner, where necessary. Sylvia White, programmer/analyst, explained, “I wrote some extra forms, but we have not modified any SCT forms. So every time an SCT upgrade comes in, it isn’t affected. I’ve had to rewrite those forms, but only when there’s a major [Oracle] developer upgrade. Aside from that, they’re separate.”
- ◆ Integrate “bolt-on” systems with Banner to handle specific functionality that is not available from SCT. For example, the registrar’s office is currently installing an application called Schedule 25 to enhance classroom scheduling capabilities. In addition, ITS assisted the public safety department in interfacing its new parking ticket tracking system to Banner.
- ◆ Creating data analysis tools and specialized applications that interface to Banner to let users manipulate and track data in ways not possible in the vanilla Banner system. For example, HR developed a Microsoft Access application to track usage of Smith’s tuition benefit program, which pulls data from the Banner HR module.

Reduce Risk

One of the major drivers of Smith’s decision to implement ERP was the desire to reduce the risks associated with operating the legacy environment, including difficulty of maintenance and reliance on specific

individuals to keep the systems running. By implementing the system without customization, Smith essentially outsourced the ongoing code maintenance to SCT, eliminating that element of risk to the institution. And by purchasing one vendor’s core administrative systems, Smith has significantly reduced its reliance on individual employees or contractors.

David Baker, systems analyst, explained, “Previously, we had different systems from different vendors, so I was literally the only person who knew anything about payroll. Now, although I am the main person to support payroll, almost anybody could. [This is] an advantage of having the integrated software that has the same technical environment—it’s the same tools and the same software. So although there are application differences, there is a lot of carryover across the modules from a technical basis and how they work. We can back each other up more easily and better than before, and the college is less vulnerable in case one of us unexpectedly leaves.”

Post-Implementation Impact of ERP

After the discomfort of a difficult transition period faded, Smith discovered that organizational changes had occurred within the college, not all of them anticipated. Also, because the college did not initially implement all of Banner’s functionality, implementation has become an ongoing, evolutionary process in some departments. On the other hand, implementing Banner vanilla has made upgrades a fairly straightforward process for Smith.

Short-Term Impact

When Banner went live in Smith’s administrative departments, the transition period was difficult. Users struggled with learning not only a new transaction system, but also

a new reporting tool. In addition, many users made the switch from a character-based terminal to a Windows-based PC. Smith encountered many of its reporting deficiencies at this time, adding more user frustration, as they could not quickly access reports they needed. "To be honest," Butz said, "I think the first year in each department was a nightmare. It was hard for them."

To manage the issues that surfaced during deployment, several approaches were used. Smith had to address the deficiencies with reporting. This was done, in many cases, by supplementing the implementation team with external consultants to build the missing reports. The project team, supplemented by SCT resources, also had to do a lot of what Butz refers to as "handholding"—watching users perform their tasks using the new system, identifying their frustrations, and helping them work through their issues, often by reinforcing points missed in training. In addition, data-entry standards had to be adjusted in some cases, as they discovered that some of the standards implemented in fact made it harder for workers to do their jobs.

As Smith put these measures into place, and as users moved up the learning curve and became more comfortable with the new applications, the situation began to improve. According to Butz, "I would say that in every case, after that first year, after they finished a full year of processing, people were overwhelmingly happy with the system. But I think it took a year in every area before they would say that." Constantine added, "And the expectation [as Banner went live] was, it is going to meet all of our needs today. And then people begin to realize all the reports they have to write, and that they must adapt the way they do business to the way they can get information. It's hard; it's time consuming, it's frustrating; and on the day it goes live, it's not going to meet all

your needs that day. It's going to begin to meet all of your needs over the course of the next year."

Long-Term Impacts

As the initial discomfort associated with the implementation began to fade, Smith discovered that some changes had occurred in the organization of the college and in the ways its employees do their jobs.

Workload Redistribution

Many tasks, ranging from reporting to benefits administration to finance to course registration, can now be done directly in the departments or by individual employees and students. This self-service approach has improved customer satisfaction, as it has reduced bottlenecks for key tasks like registration while allowing anytime access to important information.

Changing Nature of Administrative Work

The nature of work performed by Smith's administrative employees changed. By shifting responsibility for data-entry tasks as close as possible to the source of the data, as opposed to having employees in central offices rekeying data from paper forms, the nature of the work being performed in central offices has changed significantly. Employees at all levels have more time to focus on direct customer service, streamlining and improving operations, and developing new capabilities. "For HR assistants who primarily did data entry kind of work, it was an opportunity to be more of a level-one, level-two customer service rep," explained Kerwood. "Prior to Banner, if an employee called on the phone and said, 'I went to the doctor today, and my health card didn't work,' the HR assistant was focused so much on data entry that they could not handle it; they'd kick it back to one of the benefits

specialists. Now the HR assistants can deal with that problem at some level, go through the level-one diagnostic and solve the problem, whereas before, that was never done. It has given people who were in more clerical positions the opportunity to do different and more challenging work.”

This change also has carried over to the hiring of new employees. Departments can hire employees with more analytical skill sets to replace people who leave, because Banner has freed up resources. “For our last hire, we certainly chose someone with more professional accounting skills,” said Sheehan, “as we try to get more and more away from data entry, and more and more focused on adding value to the information—not just processing and entering.” This has caused an interesting shift in hiring priorities in some areas. Kerwood explained the impact in HR: “We’re requiring more computer skills from the administrators and less from the support staff.”

Evolution of ITS

Smith has noticed changes in the ITS organization and in the nature of the services it provides to the campus. “The IT organization has changed dramatically following the Banner implementation,” explained Nickles. “I think a lot more than I ever expected it would.”

One of the most significant changes occurred within the ITS production department, which handled centralized printing and distribution of reports from the legacy systems. As a result of moving reporting activities into the departments, Smith completely eliminated production. Cheryl Donaldson, formerly director of production, explained, “Over the four years of the Banner implementation, we went from having two shifts, to one half-shift during the day and one at night, to one shift, to no need at all.” As their services shifted to the departments, the production staff’s jobs changed

as well. “We evolved from doing work with the legacy systems for the departments, to a training, troubleshooting, and equipment distribution department for the new equipment and the new printers,” explained Donaldson.

ITS also had to develop many new technical skills as a result of the implementation. For example, the legacy systems ran in a VMS environment, and when Smith first implemented Banner, they remained on VMS. Eventually, ITS decided to switch to a platform better supported by SCT and Oracle, and retrained their system administrators on UNIX. In addition, the move away from the legacy systems introduced significantly more complexity in desktop technology. “We discovered a lot more need for technical expertise on the desktop side,” explained Nickles.

ITS made major changes in the way it services its customers. In the past, each area of ITS had provided services in its particular specialty area. However, following the Banner implementation, user demands for support grew, and ITS created a centralized customer support group. “We had to change that model, so we pulled people out of different groups and combined all of our customer support into one group and created a director position eventually,” explained Nickles. “We went to a help desk that had extended hours, with telephone support and on-site support for faculty and staff on campus for Banner support. And eventually the end users started using BannerWeb, expanding the user base from about 50 Banner users to 4,000 users on campus. Our user support model had to change because nontechnical users called now with questions like, ‘My PIN doesn’t work’ or ‘How do I get in to change my address?’ And online registration puts a severe demand on our resources as well.”

Training also changed. ITS had provided, and continues to provide, training for all of its areas. However, for the module-specific

training in Banner, ITS “pushed the training of specific Banner use out to the departments,” said Nickles. “For example, the controller’s office runs training for potential future users of the Banner finance module; we don’t do it.” In addition, ITS provides online documentation for Banner, which is available to the entire community.

Evolution of Functions and Features

Smith did not plan to implement every piece of functionality available in Banner initially. As a result, the implementation in some departments has become an ongoing, evolutionary process following the initial implementation efforts. In HR, for example, Kerwood explained, “When we went live, we just wanted to pay people. And now we’re beyond that; we can start utilizing all the other bells and whistles that a system like Banner has.” One example of this evolution can be seen in the following situation, which Kerwood described: “One of the low-hanging fruit is our OSHA management and worker’s comp management. Right now, we process that with an off-Banner system, and Banner has this wonderful OSHA module included with the HR system that we’ve never utilized. An injury report comes in; the supervisor has to process it. We get it, and we process it, so one injury creates different entries into different systems. If we move to the Banner module, it’s done once. So there are huge efficiencies to be gained by moving our OSHA and workers comp work out of the third-party systems we have now and into Banner. And so we’re moving to Banner’s OSHA module now, with a planned live date January 1 of this coming year.”

This evolutionary process is mostly handled in the departments, supported by the DSCs. In HR, Kerwood does not drive the implementation of new functionality, but helps introduce his staff to the capabilities

of Banner they are not yet using. Smith has a test system that enables staff to become familiar with new areas of Banner and decide whether implementing that functionality would improve their ability to do their jobs. Kerwood continued, “If the person who’s ultimately going to use the Banner functions isn’t ready to move it there, I’m not forcing him to do that. For example, one person had enormous difficulties moving to Banner when it went live four years ago. He had a lot of learning-curve issues, and now four years later, this person’s coming to me saying, ‘You know, I think I can make my job much more efficient if I moved this piece into Banner.’”

This evolutionary process, over time, has helped Smith eliminate some shadow systems and bring more data and functionality into the core Banner system. In addition, the evolutionary process can simplify issues that required complex solutions at the time of implementation. For example, when implementing HR, Smith decided to customize its pay stub because it contained important data elements—such as both the employee’s and the college’s contributions to health and life insurance—not supported by the vanilla Banner check stub. When SCT added functionality in the newer BannerWeb module, Smith removed this customization and reverted to the standard Banner check, while providing its employees access to a detailed pay stub on the Internet.

Managing Upgrades and Requests for Enhancements

In the move from a legacy environment to a vendor-supported package solution, another issue Smith learned to contend with was the constant stream of upgrades coming from SCT. However, thanks to the vanilla implementation approach, the upgrade process was not difficult to adjust to. “Upgrades came out quarterly, so we handled them constantly,” explained Butz. “SCT rec-

ommended that we maintain multiple instances of the system. We have a development copy, a training copy, a production copy, and a preproduction copy. We can install the upgrades in a test environment that contains a copy of all our production data, enabling the users to test it before we move it into production." Upgrades are generally tested in the preproduction environment for six months before being released to the production systems. This process has proven its worth to Smith, as Constantine explained: "When it comes time for upgrades, we implement them so much earlier than other Banner schools because of our vanilla approach to implementation."

Sometimes the upgrade process creates difficulties. "About halfway through our implementation, SCT released a major upgrade which required a new version of Oracle, a new version of forms, and a new user interface," said Butz. "We knew it was coming, but it meant a fairly major retraining effort for users of the previous version." Another issue involved keeping up with the enhancements to the system in each new release. "We didn't always do a great job of knowing what functionality was coming in a release," explained Butz. "We were so busy getting the basics up that we would discover that a new release offered a new feature which we didn't know about. So we had to go back and thoroughly review all the release notes to make sure we hadn't missed something."

To help manage the upgrade process and ensure that the departments are aware of forthcoming changes, the departments now participate in the evaluation and testing process for new upgrades. "The departments actually monitor the SCT communications for new upgrades and releases," explained Butz. "They share responsibility for evaluating when and planning how to install them."

However, this process is not always easy. Kerwood explained, "SCT doesn't provide

any good way of informing users of upcoming changes. And that's from my perspective; it's maybe a failing of our ITS department. And maybe a failing of SCT—in the documentation that they send, what's critical? What do I need to know as a line manager? What's the two-page summary? That really doesn't happen. You just kind of stumble across it. When the documentation arrives, it's daunting." Despite this difficulty, the vendor-supplied upgrades are generally well received by the departments. According to Sheehan, "I'm pleased with the upgrade process, because I think many of the enhancements are enhancements that we like, we enjoy, and we're implementing."

For non-SCT changes, Smith developed several processes through which departments can request enhancements or the purchase of additional software. The budget process contains a separate form for departments to make these requests. Once a request is submitted, ITS assigns a project manager who works with the department to determine if the requested functionality either exists in Banner or will be in an upcoming release. If the need can't be met by Banner, they determine the cost, and the ITS leadership determines how to fit the request into the college's IT budget. "An example is the new federal regulations from the INS on tracking international students," explained Nickles. "So we get a request, and in that case, it's compliance, so we have to do it. But the department wanted to purchase additional software. We did some research and discovered that SCT planned to produce a module, and it's covered under our license. So now we must evaluate whether the SCT software fulfills the department's requirements to determine whether or not to purchase the software. And that's a process that we work through with the department directly."

If ITS determines Banner can handle the request, it initiates an evaluation to deter-

mine the level of effort required and whether internal resources can handle it. “That’s really [the] director of administrative technology’s decision,” explained Nickles. “If we can’t do it internally, we get a cost to have it done externally.”

In addition, the Banner steering committee continues to review the college’s needs, makes recommendations for improvements, and helps to prioritize requests. There is also a committee on administrative technology services, made up of representatives from the major administrative departments, which reviews requests and makes the final decision on what direction to take.

Perceived Benefits of ERP at Smith

Although the first year following implementation was difficult for Smith’s users, the situation improved as the reporting issues were addressed and people became more comfortable using Banner. The new capabilities offered by the system enabled Smith’s departments to transform some aspects of the way they conducted their business. However, this was an evolutionary, rather than a revolutionary, process. “Business transformation was not on our list of goals at the senior level,” explained Constantine. “In much of business transformation, you try to integrate what departments are doing with what central is doing and see if you can get everybody using that central system, so you’re reducing that duplication. We didn’t push that a lot until we were fully implemented. And then, we started going out to departments—we were really implementing mostly with the central staff—and saying, we’ve got to get you guys online. You need to use Banner directly. So we did that after the implementation rather than planning it as part of the implementation.”

One reason that the senior staff didn’t approach the Banner project as a major transformational initiative was because

Smith already had been progressive in the use of its legacy administrative systems, albeit in a highly customized, difficult-to-support manner. The Banner implementation was undertaken more as an initiative to reduce the risks associated with maintaining the legacy environment than to enable major changes in the institution’s business operations. “Based on conversations that my staff had with their peers at similar institutions, and I had with my peers when we implemented,” explained Constantine, “the level of our use of the IA systems was a cut above what others had, so this [migration to Banner] wasn’t as big a difference for us in terms of what it enabled us to do because we were already working with an integrated system. It wasn’t as sophisticated as Banner, but we already had that.”

Self-Service

One of the biggest changes the move to Banner brought about is the ubiquitous access to data that it enables for all members of the Smith community. “We put in the employee Web modules so that an employee can get online and look at where they stand with their vacation days, look at their benefits, and look at their last paycheck,” explained Butz. “There’s a lot more information available to people that they didn’t have before, and I think that has changed the way they do business. For example, when we installed these Web modules, offices noticed the number of calls they were receiving declined by 70–80 percent because people could access more information themselves.”

The self-service benefits of Banner accrued not only to individuals, but to departments as well. Due to the flexibility inherent in the system, departments can now make many changes to the system themselves, rather than having to rely on, and wait for, ITS to help them. “I think all the departments are a lot more self-sufficient,” said Butz. “Before we moved to Banner, we had the

old model where IT controlled everything, and you sort of had to bow down to the IT gods if you wanted, for example, a new state added to the state validation table. Now the users control all that. They maintain their own validation tables and their own rules tables, and they are responsible for knowing how that system works.”

O’Neil emphasized this point as well. “One of the big areas for us has been the introduction of the Web. That has made a big difference in our office operations. Students are registering on the Web. We have Web for faculty out there, so our instructors and our advisors can get information for themselves. Students can look at their transcript. They don’t have to come to us and wait for us to run the paper for them. So it’s much more self-service, and on their time rather than on our time. That’s made a big difference, as far as our relationship with the student. We do still have a lot of student traffic during registration periods, but it’s more on questions and issues about registration, not just punching in the numbers.”

Departments have also benefited from self-service capabilities in reporting. Before Banner, all reports on campus were generated in and distributed by ITS’ operations group. Users in departments can run predeveloped reports from their own PCs, speeding up their access to information. Van Erp illustrated this point: “In the past system, there was no end-user report running. Now, we have created a Banner Access interface on the end user’s PC, and the user can run any report to which he or she has access. The fundraisers have a battery of specific reports for their areas, as, for example, major gifts. They have a whole series of reports about their prospects’ giving activity. If they are going to, say, Montana, they know who they should see, who they should not go see, who’s had a child. All that is in a simple report they can run right from their desktop.”

Enhanced Customer Service

Some of the biggest improvements Smith achieved following the implementation were in the area of customer service, enabled by the availability of true integrated data across the institution. For example, a student or employee who moves has to supply a new address to the institution once; and the change is immediately available to all departments. In contrast, in Smith’s legacy environment, this type of information was replicated across multiple systems, often making interactions with the university a frustrating, time-consuming process. “In the past, when people would ask to send a letter to everyone on campus, one person could get four letters if they were a student, a staff member, an alum, a faculty member,” explained Donaldson. “They would get four letters because there was no way to separate all those lists because they were all independent of one another. With Banner, you know what someone is, and that problem of someone being in the system 10 times doesn’t exist.” “That was transformational,” expanded Constantine, “not necessarily for one single office, but across the institution. Absolutely transformational, because it enabled that integrated record.”

The integrated capabilities of the new system also enabled Smith to make some important service improvements in its customer-facing offices. Before Banner was implemented, a student had to visit a specific office to complete a specific transaction with the college, often needing to visit multiple offices for complex issues. After the implementation, Smith dramatically improved this process. “Our records are absolutely, completely in sync, so it doesn’t matter what office a student walks into, from a customer service point of view,” explained Constantine. “If we have the information, we don’t want to send her to somebody else. Now we know we can look at the absolute same screen and help that

student, even if she came to the controller's counter instead of the student financial services counter."

Donaldson further explained the evolution of this improvement. "As you discovered what Banner could do, you realized that even though you might have a financial need in the controller's office, and a financial need in financial aid, that they are [both] financial services, and a student shouldn't have to know which one of the five offices they go to to get their question answered. There should be a central front door for them to go to. So that created the front door. They saw their own interdependencies."

Customer service benefits also resulted as data-entry tasks in the offices were reduced through Banner's self-service capabilities. This gave staff more time to focus on assisting their customers, rather than spending it pushing paper. "They were always just kind of chasing the paper, chasing the keystrokes," explained O'Neil, "whereas now, when a student comes to the counter, it's not another interruption. They have time to help that student, or more time to work out a procedural problem, or to follow up on something, because everything isn't backlogged."

Improved Decision Making

The Banner implementation enabled Smith's management and users to make better decisions by providing access to consistent, integrated information across the institution. "We used to talk from different sets of numbers with our Board of Trustees, to a campaign steering committee, or even perhaps with the president," said Constantine. "And now all the information is exactly the same. And where we have a little bit of a difference in how we recognize and report, we have clear ways to identify those differences, and in fact reconcile them. It's easy, because the systems are integrated."

Banner provided Smith's departments with the ability to peruse and analyze historical information more quickly. O'Neil explained, "A big difference for us is having the history. All we had previously [was] current student information. If we wanted to know historical information, we'd have to look it up on paper. We generate more reports for departments online now, making them more self-sufficient too. We've given them a reporting interface to run some of these things themselves."

Smith can share information easily now across functional areas and combine that information to look at things in new ways. An example is the process of transitioning graduating students to alumni. Before Banner, there was little linkage between the advancement area and a student's on-campus experience. Fundraisers had to build new records for alumnae after they graduated, which was time-consuming and could introduce errors into the advancement databases. "I think it has made a real difference for those departments to be able to access a picture of [a student's] experience and her interaction with Smith and have an accurate depiction handed off to a fundraiser," explained Constantine. "You know what residence houses she lived in; you understand her Smith experience; so you can hit the ground running instead of waiting until the day she graduated to begin to build a record of her interaction with the institution."

Streamlined Processes

Banner enabled Smith to streamline some cross-functional processes. Because the modules in Banner were tightly integrated and shared the same data, tasks that used to be complex and time-consuming, such as the transition of admitted students from the admissions office to the financial aid and registrar's offices, became much simpler and quicker, and could be made

without having to re-enter data. “It’s a seamless integration from the point at which we admit a student to the point where we enroll a student, to turn those records over to the college,” explained Audrey Smith, director of admissions.

Another area that has benefited is the interaction between course registration and academic advising. In the past, Smith’s students had to come to a central location to register for classes, causing problems for first-year students, who were required to meet with their academic advisor before class registration. O’Neil explained, “In the old days, new students ran back and forth between us and their advisors, because some courses closed by the time they got to us. Now new students sit down with their advisor to discuss their programs and access the system online from the advisor’s office, so they know instantly where the problems are. That has made a big difference.”

Reallocation of Resources

One impact of the Banner implementation has been the redistribution of significant amounts of data entry or data distribution work from the central offices out to the end users of the system. This has led to some major changes in the work being performed in those offices. One change that had an immediate impact following implementation was reporting. Previously, each large office had one or more systems people whose job was to run reports from the legacy system and deliver them to the end users. In addition, ITS had a whole operations department that performed a similar set of tasks for larger reports. Once Banner was implemented, users could run their own reports. ITS eliminated the entire operations group as a result and transitioned these staff into the newly formed user support department.

In other departments, similar transitions occurred. The IT systems resources freed

from reporting tasks now provide other IT services to the department. For example, in advancement services, the systems group created an events database to provide functionality not available in Banner. In HR, they created several new applications, including a system to track employees’ tuition benefits and another to track applicants. Before Banner, these employees were too busy providing day-to-day services to focus on these higher value activities.

These changes have also occurred with non-IT staff. As personnel were freed from having to do centralized data entry, they had more time available for more value-added tasks like data analysis and customer service, while customer-facing personnel could directly interface with the system to get data in and out quickly. Kerwood explained the impact on jobs within HR: “We’re looking for more data analysis from the support staff than we would once look for, and more data-entry skills from the administrative staff than we would have before, because they didn’t do data entry themselves in the past. If you come into my office, and you’re a new employee at Smith, I can sign you up for health insurance and the retirement plan, and enter that data in Banner as we’re talking.”

Case Spotlight

Smith is a small, private, liberal arts school. As such, the college encountered some unique needs, issues, and benefits during its ERP selection and implementation.

Impact on Smith’s Needs

One of the driving needs for a small liberal arts school like Smith is the ability to provide personalized, top-quality customer service to its prospects, students, and alumnae. “I think, for the small, fairly centralized college, it’s even more important to us to have integrated data and an integrated system than at a large institution,” said

Constantine. “Except for a small subset, the student lives for her entire four years on the campus. And for key offices to access the whole picture related to her is that much more critical for any residential college. You have very high value added when you can integrate your data.”

This need to provide personalized service most strongly influenced the ERP system selection process in the admissions and advancement areas. “Those seemed to be the two areas where we saw the biggest difference between the larger state and community college systems and what we wanted as a private liberal arts school,” said Butz.

For advancement, several major factors were considered in system selection. One was the level of integration between the student system and the advancement system, so that information about the student’s on-campus experience could be carried over to the advancement system and be used to enhance alumnae relations. Another was the ability to keep track of complex donations. The third was the ability to link the advancement system and the financial aid system, to track the ties between endowed scholarship funds and their recipients on the student side. For admissions, the key functionality for selection was the ability to tailor, focus, and track correspondence with individual prospective students. “It doesn’t do for a school like Smith to do mailings that look like mass mailings,” explained Butz. “So we had to have the ability to really customize and tailor all correspondence that went to individuals. It looked like they were all personalized, handwritten letters, even though they weren’t.”

Issues

One issue Smith feels it faces as a result of being a small, private school is that enterprise systems like Banner are designed to

meet the needs of much larger institutions and therefore don’t always fit well with the way a smaller institution works. “Banner was designed originally for big state schools, so there were functional areas where it didn’t fit really well,” stated Butz. “We had to adjust and squeeze and stretch the system to its limits because it really wasn’t designed to fit. We’ve always felt we made the right choice, but it wasn’t a perfect fit.” O’Neil continued, “There’s a lot more there than is necessary for what we do. There are a lot of steps to go through that don’t sometimes seem necessary to us, but that’s the way Banner is designed. But they are things we’ve adjusted to.”

Another issue Smith faced was the staffing it could provide for the implementation. “We had a fairly small IT staff compared to other Banner sites,” said Butz. “If you look at what other Banner sites have for resources implementing a system like that, certainly we were understaffed compared to some of those institutions. We weren’t understaffed if we compared ourselves to other institutions like Smith—we had a fine staff—but if we compared ourselves to other institutions implementing Banner, we were pretty small.”

Smith also faced an expectations management issue with its alumnae. Butz explained, “Alumnae involvement is extremely high at institutions like Smith and other small liberal arts colleges. I made periodic reports to the alumnae board, even before we implemented the alumnae module, because they really cared about this project. And we have alums and board members who work in technological fields and can’t understand why Smith can’t do X. And I think we get pressure from the alumnae, due to their exposure in their professional lives, that you may not get at other institutions where the alumnae aren’t as involved.”

Benefits

Smith feels their small, private school make-up benefited their implementation's governance model. "The whole project work group and steering committee structure worked really well," explained Butz. "I think that at a small liberal arts institution, a lot of the people feel empowered—at least it was true at Smith, anyway. A lot of our end users felt empowered that they could serve on project committees; that they could make a difference; that someone would listen to their opinions. I'm not sure you have that same environment at bigger state institutions where your people—even at the lowest levels of the organization—have that same sense of empowerment. It made the work groups work very well; they were extremely productive. Smith's environment is such that people are often asked to participate in projects like this, so it wasn't new to them. A lot of our administrative staff had worked on committees before, so it was a very comfortable process for them. We weren't wrestling with that whole organizational structure and process at the same time that we were wrestling with a new system."

Smith's relatively simple administrative structure facilitated the business changes necessary to implement an uncustomized, packaged system successfully. "I think the main reason we were able to do a fairly successful vanilla implementation is because we're centralized," explained Constantine. "Having worked at a much larger institution for 10 years, I can appreciate what happens when you're not." Sheehan elaborated further: "It might have been easier to make decisions. The implementation committee was able to make decisions, and the decisions stuck."

One benefit for Smith—which might not accrue to all small schools—was that it had

the financial resources to successfully complete the implementation and provide adequate post-implementation support. Sheehan explained, "I think being a wealthy, small, liberal arts college has made it possible. I think there's a fair amount of overhead to maintaining Banner. You do need people with true technical skills. We could go out and add those FTEs to the departments and also at the ITS level. It's a complex system. You need people skilled in many different areas, and I think we have the resources to do that. Sometimes when I'm out on the listserv and I read about smaller schools taking on Banner, and it sounds like they have a staff of one, you wonder how they manage to cope with it."

Cultural Impact

Smith's emphasis on customer service engendered very high expectations for the project. "Smith had the highest expectations of any institution where I've ever worked," said Butz. "I think small liberal arts institutions tend to want to do everything perfectly; it's part of their nature. We maintain extremely high expectations on any major project, and we really couldn't cut corners anywhere. It carries through to everything that the organization does, and it certainly affected this. And that adds, I think, an extra level of stress to the whole project. The institution's customers expect it; the alumnae expect it."

Lessons Learned

Over the course of its four-and-a-half-year implementation, and in the succeeding years working with and evolving the system, Smith College developed many insights into the intricacies of selecting, deploying, and maintaining enterprise systems.

Some of these insights are based on mistakes that were made, while others reflect areas that worked well for the institution. These lessons fall into several categories: project governance, management, and organization; project approach and outcomes; technical; and learning and knowledge.

Project Governance, Management, and Organization

◆ *Communications are key.*

The project team cited the value of communications as one of the top lessons learned. “People you wouldn’t even expect to be touched by this implementation will be,” stated Butz. “It really touches every area of the community, so you have to keep everyone informed, including the faculty and people who may not have ever used your legacy systems. But hopefully, if you do the implementation right, it’s going to reach everybody in the organization, so it’s really important that you communicate to all of them.”

Constantine also stressed the importance of communications and explained how Smith learned this lesson. “You need good, strong communication right up front to let everyone involved know just what this is going to be all about, why you’re doing it, the benefit to the institution, not just to their area, and what it is you’re asking of them. I actually think that’s something that some of the most complex implementations did better than we did. And it may be because we didn’t fully realize, as we were getting into it, what it was going to mean. We saw ourselves as a little simpler, more straightforward, and less complex an implementation, and so we probably didn’t do as much communicating with the people that were going to be involved. So what happened was that they figured it out as they got involved,

and then their departments did the kind of planning for how to make this work in terms of their staff time and keeping their regular operational needs met. And so I think that piece of up-front communicating and planning is something we took too lightly.”

◆ *Good project governance creates buy-in and commitment.*

“The committee structure worked really well at Smith,” said Butz. “We got it in place early in the project. I think it helped that the same team was responsible for the system selection as well as the implementation. The continuity ensures that people wouldn’t start questioning system selection decisions halfway through the project. It was the same people.”

Donaldson agreed: “The key to our success was getting members from each of the affected areas together in the same room, considering them a committee, and making sure that all the decisions were shared decisions. Then you’ve got buy-in, everyone feels equal in terms of making the decision, and everyone understands why the decision was made the way it was.”

◆ *IT cannot drive the implementation.*

Smith’s steering committee and project teams, who were responsible for making most project decisions, consisted primarily of department managers and staff, with participation from ITS. “It is the users’ system,” explained Donelan. “It’s not the IT department’s system. From the first meeting with the vendor, the departments need to be involved to help with the system’s design and setup. IT can’t set it up and give it to them. Users have to be there every step of the way, deciding how the system is going to work. And I thought that was the biggest thing that we did here. It was the users involved in each group, with one of the ITS staff sitting on each committee, that set up

the system to work the way Smith wanted it to work.”

- ◆ *Don't underestimate the importance of planning.*

Smith also learned about the importance of performing detailed analysis of business requirements, particularly in the area of reporting. “Most of the vendors did not supply canned reports to meet anybody’s needs,” said Butz. “But I think that often, in the contract negotiation process, that gets overlooked. You forget that somebody is going to have to write 600–700 reports to go live with the system.”

- ◆ *Strong executive support helps work through hard times.*

Executive sponsorship and support played a key role in Smith’s ERP implementation, particularly supporting controversial—but critical—tenets of the implementation, such as implementing without customizations. Smith’s senior staff also played a key role in helping the project steering committee and the departments prioritize their workload during difficult situations. “We had senior staff support from day one,” explained Butz. “There were a couple of times when things had to slide. Senior staff helped me to prioritize things.”

Nickles played an important role in serving as the advocate for the project with the other senior staff members. In this capacity, he helped secure the human and financial resources needed for the project to succeed, and supported the project team with the department chairs and senior staff when needed. This helped free the project manager to focus on the project itself.

- ◆ *Support within the departments was essential.*

A lesson cited by many of Smith’s project team members was the importance of the

DSCs in the implementation and ongoing support. “One thing we created around the same time [as] the Banner implementation was a position in departments called the department systems coordinator,” explained Donaldson. “From an operational standpoint that was really the key for departmental support. The DSC wrote the reports, really understood the data inside and out, and came to our meetings to give us input. It was a big, big key to our success.”

- ◆ *It really never ends.*

Keeping the project teams in place after initial completion of the implementation also proved valuable at Smith. Although the team meetings slowed down somewhat after their modules were implemented, they picked back up when the departments began to run into issues as their usage of the systems evolved. One of Smith’s systems analysts explained, “We still have an HR project team, a student project team, and a finance project team that meet once per month. And everyone gets together and talks about different issues in the modules; if there’s a problem, they ask for help there. And a lot of times, they get an answer from another department. If they want to add a new code to a validation table, they will ask permission of the group first. And most of the time, it’s fine. These are the original implementation teams—just continued.”

Project Approach and Outcomes

- ◆ *The first year will be difficult.*

Across the departments and offices at Smith, there was a common perception that the first year following implementation was extremely difficult. Users had to cope with learning a new system and made changes to the way they worked while performing

their day-to-day jobs, often with critical reports missing at first. Almost every department experienced a major loss of productivity during the first year. However, in almost every case, once users got comfortable with the system and got their missing reports, productivity bounced back to pre-implementation levels or better.

◆ *Expect evolution, not revolution.*

Smith approached its implementation not as a “big-bang” event, but as a steady improvement process over time. During the implementation itself, Smith phased in the modules in a staggered fashion. In some cases, the college didn’t try to implement all of the functionality of a complex module immediately. They also did not try to conduct major process reengineering as part of the initial implementation. Instead, Smith used a more gradual approach, allowing them to implement at a relatively low cost, replace the legacy systems that were causing problems, and then focus later on deriving additional value from the new system’s capabilities.

Kerwood suggested, “I think your goal is to go live with what you have. Don’t lose functionality. If there are other things that you’re missing, you’ll get to them. Go live with what you have. If you don’t, not only might you see it as a failure, but the community that you’re serving may also see it as a failure. Have faith that you’ll get to it; it will just be a year or two out.”

Technical

◆ *Vanilla is a pretty good flavor.*

The impact of implementing vanilla was a key lesson learned from Smith’s implementation. Smith made its systems significantly easier to support by not modifying core systems and keeping any additional functionality required

in bolt-ons or reports. This lets them install upgrades easily, allowing them to reap the maximum benefit from having a vendor-supported system. Constantine explained the impact: “When it comes time for upgrades, we implement them so much earlier than so many other Banner schools because of our vanilla approach to implementation.”

◆ *Upgrade timing should match your agenda, not the vendor’s.*

Timing of upgrade introductions is an issue that Smith has learned to contend with. “We look at each release, and we don’t do it automatically,” explained Nickles. “Our philosophy has always been that we shouldn’t be on the bleeding edge, and the first release of a new version is probably going to have a significant revision within a month that will make a big difference, so why should we put our faculty and staff through that? The faculty is always concerned about registration, that it runs smoothly, and we’ve had some issues in the past. So the cycle of the year drives us more than the fact that a new release is out.”

◆ *No department is an island.*

One of the issues in moving to a fully integrated system is that changes made to the system, or even to a record, in one area can have an impact in another area. This was illustrated in admissions, where they wanted to track an incoming student’s academic interest. However, they could not put it in the “major” field, as that field was in use by the registrar’s office.

Kerwood gave another example: “Because the HR module in Banner is so immense, there has been more teamwork, but almost by accident. We figured out that we have to use the data together because someone is working on something, and somebody changes some data somewhere else,

and they say, 'Wait a minute, how'd that change?' Well, they were working on the same record independently, which fouled the process up. So they came together and said, 'Oh, I didn't realize that if I change this on this area in Banner, it affects your forms.' So a new process is developed, and an efficiency is gained."

◆ *Interactions across products can produce unexpected difficulties.*

ITS provided an interesting lesson on the impact that vendors besides the ERP vendor could have on ongoing support. "The areas that I recall that were the most complicated that we didn't realize would have an impact were the non-SCT vendors that began to impact our Banner support," explained Nickles. "For example, Microsoft upgrades browsers and puts them out for free on the Net, and everyone wants to go out and grab the latest browser because it's free. Well, they don't work with Banner." He continued, "Another example is Dell. They decide when an operating system is retired. We're now starting to see modifications to the chipsets so that old operating systems are not compatible. So we're driven to some extent by their marketing, because we get to the point, let's say, we want to continue to run Windows 98 or Windows 2000. There are some departments where we still want to run Windows 98 because some of the other software they have interfaces with Banner, and it happens to work in Windows 98, but it isn't supported yet in Windows 2000. And so we have the problem there of Dell not marketing a machine now that will run Windows 98."

◆ *Platform choice can have an impact.*

Smith also learned that aligning technology infrastructure choices with those used by the vendor can reduce support issues associated with installing upgrades. One of Smith's systems analysts explained, "First we operated

on VMS, and Oracle and SCT tested on VMS last, so whenever we got upgrades, they were filled with bugs. That's one of the reasons we went to UNIX, and things improved considerably. And now we're moving from Compaq Tru-64 UNIX to Sun Solaris, and I think we're going to see more improvements because Sun Solaris is the machine that both Oracle and SCT develop on. So I would recommend to people to start off that way."

Learning and Knowledge

◆ *Breaking down the walls builds knowledge.* By going through the implementation process, Smith felt that its employees who participated on the project teams learned an enormous amount about the management and operations of the institution. "Going through that process," Butz explained, "those people learned an incredible amount about the system, the process, and the business functions of other parts of the institution. One of the things I think always happens when you start looking at implementing an integrated system, people start realizing what other offices do, and they never knew that before. So they learned a tremendous amount about how the college did business, in addition to learning about the systems."

◆ *Institutional learning took place.*

In addition to individual learning, a significant amount of institutional learning took place over the course of the project, believes Constantine, enabling the Smith project teams to work more effectively as the implementation progressed. "By the time we got to our final component, the advancement and fundraising piece, we really got it in terms of taking a look at our business needs and in particular our reporting needs," she said. "How do we make use of the data to meet our business needs? We looked at that issue at a much earlier point for the imple-

mentation, which was critical to its success. We wished we had understood that more thoroughly when we implemented student and financials. So I think we learned as we went on the student implementation, and then we got better as we went along.”

◆ *External expertise could have avoided issues.*

In a related lesson, Constantine also feels that the learning process for the institution could have been accelerated by bringing in external expertise from the beginning of the project, rather than learning from mistakes over the course of the implementation. “Even though we weren’t looking for business transformation, a consultant could have helped us understand more fully how to anticipate our business needs and project them. It happened internally within that couple-year period, but it would have been more helpful to the departments if we had started all of that kind of thinking at that earlier point,” she explained. “Then the departments wouldn’t have to evaluate and understand their business needs and design reports while immersed in the implementation itself. I think that the use of an experienced consultant who had done several of these at other institutions would have made a difference, absolutely.”

The Future of ERP at Smith College

As it has done consistently in the years following its initial implementation of Banner, Smith plans to continue to evolve in its use of the system to provide more features and improved service to individual users and departments.

At the College Level

At the institutional level, several significant short-term improvements are planned that will affect all Banner users. Smith plans

to upgrade to the Internet-native Banner product, which will provide access to Banner on campus, as well as remotely, via the Web. As part of this process, Smith will upgrade its infrastructure as well, moving to Sun servers running Solaris and upgrading its Oracle database to version 9i. Smith also will upgrade its reporting capabilities in the near term by implementing e-Print software, which allows electronic printing of Banner reports. Web-accessible by users, e-Print uses Banner’s authentication to provide security.

A number of other enhancements are being considered in the longer term. These include online form approvals; document imaging, storage, and retrieval; improved ad hoc reporting capabilities by users; and the possible integration of Banner into a campus portal. Smith is also considering going back and doing a formal review of the decisions that were made when initially configuring the system during the implementation to determine whether, given their much greater knowledge of the system today, they are still the right decisions.

At the Departmental Level

Departmentally, Banner usage will continue to evolve. For example, in HR a number of new initiatives are either underway or planned in the short term. These include a move to Web-based time-entry, implementation of Banner’s OSHA and worker’s comp functionality, use of Banner’s online open enrollment module, and online distribution of pay stubs. Additional projects include linking external systems, such as applicant tracking, to Banner.

In the student area, goals include implementing more functionality within Banner, such as degree audit tools, as well as continuing to build on self-service tools for students and faculty. “Just constantly enhancing the Web piece and giving students and

faculty more self-sufficiency,” explained O’Neil. “Not necessarily to keep them out of our office, but just to provide better service.”

In admissions, a goal is to link applications and inquiries received electronically via the Web directly to Banner, eliminating a significant volume of data entry. Audrey Smith explained there is still significant potential to expand the way Smith College benefits from its Banner implementation in admissions: “Because we had the ability to collect more information, we did so. And, therefore, we didn’t save any time processing applications, because we’re collecting a lot more information. The dilemma we face then is [that] we have so much information, we haven’t yet been able to use it well.” She continued, “But I see that

the potential is there. We have a wealth of information in Banner, and we’re just now contemplating how we can use it more.”

In finance, goals include executing more transactions completely electronically, when possible. “We’re moving more toward using the procurement card, and getting that information so that it comes directly into Banner automatically. Rather than paying by check, paying by electronic transfer,” explained Sheehan.

Endnote

1. The scope of the ERP investigation included the primary administrative applications: human resource, financial, and student.