An Integrated Digital Campus Delivers ROI and VOI

Integrating our digital campus brought together services, processes, and the campus community while delivering substantial returns and value on our investment
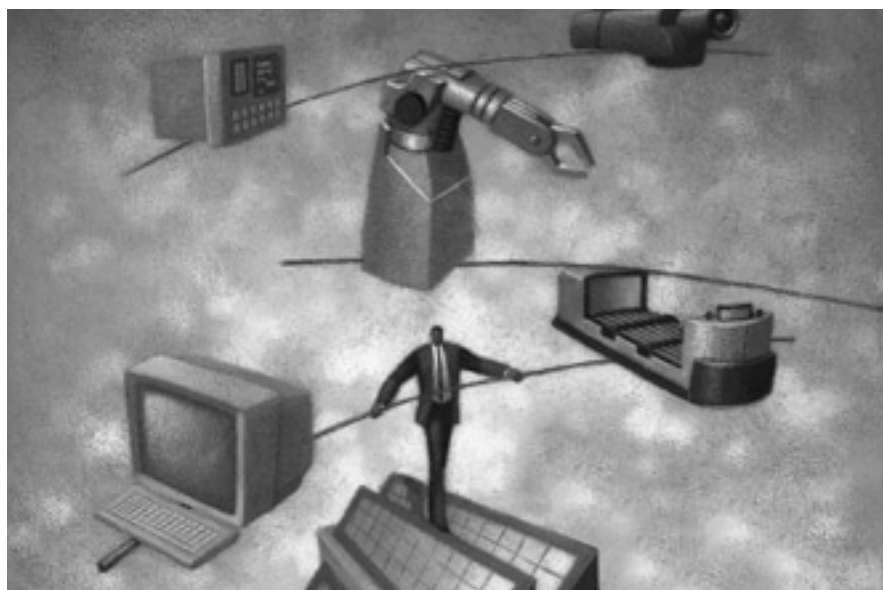
By **Jan Forsstrom** and **Gary Ham**

Five years ago, North Shore Community College (NSCC) encountered rising enrollments in the face of lagging state funding. The addition of two new campuses stretched us thin as we attempted to provide administrative and academic services across five (more recently consolidated to four) locations. And our students increasingly struggled to balance the demands of work and family with their dreams of getting a college degree. Systems and procedures in place for 35 years began to show signs of stress.

In addressing these challenges, we repeatedly found ourselves talking about one thing—technology, specifically an integrated campus portal. Portal technology could make us more efficient, strengthen connections among our five campuses, and allow our working and parenting students to complete academic and administrative tasks online. The potential benefits to our institution and its constituents seemed clear. But how could our college, a mid-size public school with 10,000 credit and non-credit students (4,000 FTE), a shrinking budget, and limited in-house expertise, successfully implement what was at the time untested, new, and expensive technology? Would it be worth the risks?

Why Integrate?

When NSCC began planning an online environment, our goals included:

■ Providing an integrated building path for enhancing communication (academic and administrative), instructional support, and redesigning services
■ Equalization of disparate services among our separate campuses
■ Improved operational efficiency
■ Increased enrollments and retention
■ Organizational and cultural flexibility
■ Improved communications and connections for our entire college community

It soon became apparent that an integrated approach to our online environment would best achieve all this. Not pursuing integration would make any solution more difficult to administer and less scalable, create multiple logins for users, and ultimately be much less effective for the college. In addition, maintaining the data and interfaces among all the applications would have placed a greater operational burden on our limited IT resources and administrative staff.

We considered building our own integrated system but quickly dropped the idea because we did not have an adequate number of IT staff, nor did our staff have the required technical skills. Buying an off-the-shelf integration platform let us roll out a successful pilot in four months, followed by a robust, customer-oriented online service environment within the same year. Building the same system in-house would have taken years.

We considered various vendor solutions before selecting Campus Pipeline, which has since evolved into the Luminis Platform, from SunGard Higher Education. A primary factor for selecting Luminis was its core linkages to our administrative system and SunGard Web services, as well as its ability to integrate in-house and third-party applications such as our learning management system (LMS).

NSCC's fully integrated portal environment includes Banner and accompanying faculty, student, and employee self-service applications; the LMS; course resource areas; custom-developed content management tools; an intranet with many paperless processes; and personal Web space for all students, faculty, and staff. Our unified digital campus has achieved a balance between access and cost, and the integrated environment facilitates seamless interaction for communicating, learning, teaching, and administration.

Benefits of the Portal

Before the portal, our two instructional technologists could spend nearly 30 percent of their time prior to and during semester starts dealing with questions about the LMS and e-mail usernames and passwords. Now, students activate their own portal accounts, have access to a robust FAQ area, and can readily resolve most account issues themselves with online tools. Once authenticated, users have seamless single sign-on access to many disparate systems and services.

Another key to the portal's success is that it employs "triggers," or basic rules. Triggers automatically and in real time update campus portal and integrated application servers with account creations, synchronization, roles, and more. For example, if a student registers for a course that requires the LMS, the system checks to see if he or she already has an LMS account. If not, it creates one. It also enrolls the student in the course and adds contact information to the instructor's roster.

When a student is admitted to NSCC in Banner, a portal account is immediately set up, ready to be activated at the student's convenience. This makes the Pipeline portal very simple for users: it doesn't require continual username and password communications to potential users, and it reduces IT overhead because it is easier to maintain.

Other major services facilitated by the portal include:

- Targeted portal announcements and e-mail messaging
- Discrete resource areas for every course, including class e-mail distribution lists, announcements, link publishing, chat, and threaded discussions
- E-mail, calendar, and group tools
- Student services including class schedules, grades, unofficial transcripts, degree audit, HOPE scholarship (1098T tax information), and voting for student elections
- Faculty and management services including online grade entry, class rosters and schedules, academic advising tools, budget query, and online requisitioning
- Employee services including room reservations, media services requests, work-study jobs creation, and marketing request system
- Intranet with many paperless processes
- Internally developed, custom content-management tools tied to the public Web site

The breadth of services available on the Pipeline portal and its ease of use have been recognized nationally. Our awards include the Online Services, Silver Paragon Award (2006) from the National Council for Marketing & Public Relations; Web Site, Silver Medallion Award (2005) from the National Council for Marketing & Public Relations; Center for Digital Government 2004 "Best of the Web" for demonstrated success for a wide range of constituent services; and MIT/Accenture 2004, First Place "Higher Education Technology Innovator" for portal implementation, among others.

Measurements

The awards are wonderful, but the true measure of success is the positive effect of the unified digital campus on our college culture. To date, more than 32,000 users have activated their campus portal accounts, with an average potential active user base of about 11,000 students and faculty per semester. Of this base, 99 percent of faculty and for-credit students used the system during the fall 2006 semester. Furthermore, 90 percent of our credit students consistently register online. (See Figure 1.)

These high usage rates demonstrate that students and other users find Pipeline helpful, allowing us to retire outdated and inefficient processes. In addition, regular surveys conducted over a three-year period (with responses by credit students of between 5 and 10 percent) rated NSCC's online service as "excellent or very good" more than 80 percent of the time. When we first implemented the portal, our Student Trustee stood up at a board meeting and said, "This is the best thing the college has ever done for students."

In addition, enrollments at NSCC have risen steadily since the portal was implemented, and retention rates have increased by 4 percent. Online course and Web-supported course enrollments have increased along with better service and support delivery. Although Pipeline is not the only cause for these increases, we believe it is a strong contributing factor.

Pipeline also eases the administrative burden on faculty, especially those

**Figure 1**

Portal Use Data

teaching our growing population of online learners. When instructors are assigned to courses using the LMS, the system creates their LMS accounts and automatically enrolls them as the instructors. It also creates a complete resource area for their courses where they can upload content or engage the students in threaded discussions. In addition, it generates a gateway for their e-mails to that course with a dynamic e-mail distribution list for all students in the class.

The integrated online environment also enhances communications with adjunct faculty. NSCC employs between 300 and 400 adjunct faculty each semester. Before Pipeline, adjunct faculty had to request an e-mail account, which our IT staff created manually. Now, when an adjunct faculty member is assigned to a course within the Banner database, a Pipeline account is generated, giving them immediate access to pertinent resource areas. Also, e-mail distribution lists are automatically generated and available for all credit and noncredit courses. Faculty now have access to more resources than before, and we can communicate with them much more effectively.

It seems the more resources we supply, the larger the demand for new applications and services. Our integrated environment lets us scale to meet both challenges with minimal increases in IT staff.

Integrating Departments Delivers VOI and ROI

The unified digital campus yielded substantial savings of time and money and an opportunity for the college to redesign many of its business processes. We estimate that the college has already recovered the initial investment in the portal with over $1 million in cost savings or cost avoidances, as well as a measurable increase in student satisfaction. Figure 2 summarizes the return on investment (ROI), where investments include all hardware and software, third-party software, maintenance, security and monitoring, training, and IS staff time. The sidebar lists some of the cost savings and cost avoidances achieved.

Figure 2

Return on Investment Summary
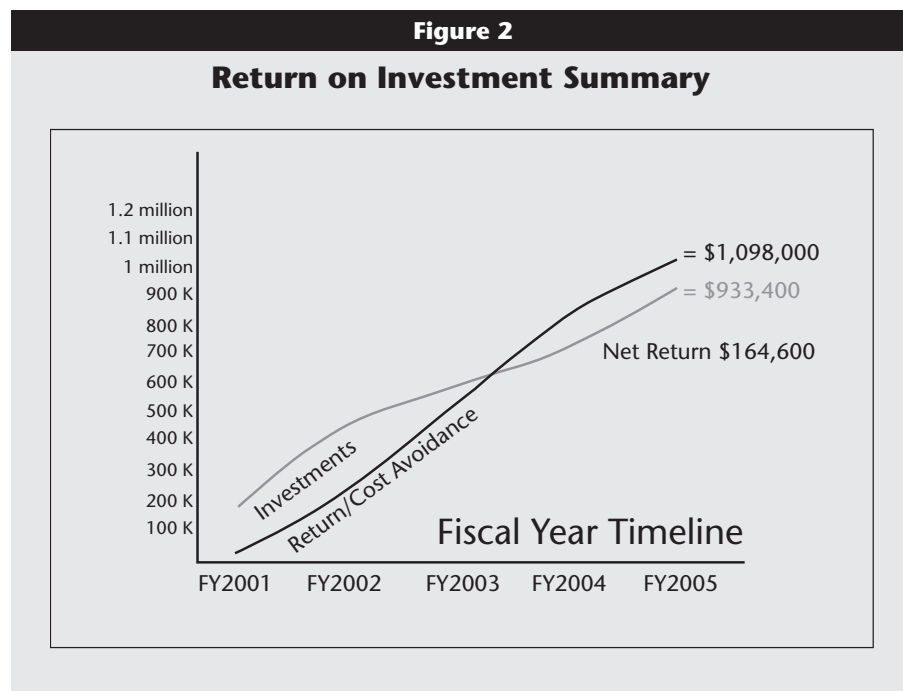
Our rationale for taking an integrated approach was grounded in technical issues like scalability and demand on IT resources. We have since realized that the integrated environment also addresses some critical people issues. Indeed, this is where we gained our strongest value on investment (VOI).

The integrated environment helped break down barriers between departments and encouraged staff to become more customer-service-focused, process- and function-oriented, and increasingly cross-functional. For example, our newfound self-service capabilities led to deeper discussions on improving our enrollment processes. As a result, we combined Admissions and Registrar staff into Enrollment Centers on our two main campuses.

Another example of more logically blending functions occurred as a result of a state fiscal crisis in 2002–3. We lost one-third of our staff in Student Accounts and Financial Aid due to an early retirement program. This led to discussions on how to improve services rather than cut back. We integrated the two offices into one department of Student Financial Services, which assists students on more complex aspects of meeting their financial obligations for attending college. Both Enrollment

Centers and Student Financial Services provide a student-centered approach. The two offices have also made administrative improvements by recently implementing digital imaging to scan, index, and permit easy retrieval and tracking of paper documents for admissions and financial-aid decisions. This project provided time savings for staff, freed space previously used for file cabinets, and enables staff to respond immediately to students regardless of which campus service center they visit.

With 40,000-plus unique Web site visitors each month, NSCC saw an untapped opportunity to connect with potential students who were surfing the site. The solution was a self-service e-recruitment system. First, we created a Web interface that allows potential students to identify themselves to the college, access a customized Web page with links to resources that match their interests, and subscribe to the college's electronic mailing list. Then we activated the Banner recruitment module and connected it to a customized Web interface. Finally, the college developed an e-marketing system that sends personalized e-mails to target populations. E-mail campaigns are developed and managed by a communications team in cooperation with the Marketing Department.

In the first year of the e-recruitment program's operation, more than 5,400 prospects used the system, and recruitment numbers increased substantially, as prior to this only high-school recruitment cards numbering between 600 and 900 were collected each year. In July 2005, an e-marketing campaign yielded a 30 percent increase in early enrollments for the fall semester. All communications are tracked using Banner, which allows the college to make strategic decisions based on hard data. This kind of cross-fertilization of ideas and leveraging integration of projects is where true "return" occurs.

Getting Buy-In

Because the integrated environment impacts every staff and faculty member at NSCC, we spent several months in advance of the implementation explaining the portal initiative's benefits and academic advantages. The two of us were visible and vocal program leaders. This pairing was critical: As CIO and CFO, we demonstrated that this project was not driven solely by IT.

We invited the entire community to participate in the project. We gave approximately 14 live presentations with a demonstration site to students, faculty, managers, and other constituents. After

each session, we surveyed the participants, finding little opposition. Armed with this consensus, we brought the issue to our college senate and received overwhelming support for the project.

Our desire to integrate additional applications, including our LMS, personal Web space, content management tools, and internally developed room-reservation system, required us to work closely with functional areas throughout the college to gather their input. We demonstrated our commitment to working collaboratively with staff and stressed that the integrated environment would support the broader objectives of the college, as well as having financial and cultural value for them and for our students.

With faculty, we stressed that our unified digital campus would ultimately save them administrative time. Their course rosters would be up-to-date, and they would no longer need to track down outdated student e-mail addresses. Indeed, when faculty realized that each student would receive a North Shore e-mail address, simplifying communications, they were almost totally won over by that alone.

The cabinet was another important audience. Forsstrom worked diligently to win their support, emphasizing that the portal implementation supported the college's strategic plan, vision, and priorities. She highlighted our history of earlier technology successes as proof of our ability to deliver the desired results for this project. Nor could we have achieved our success without the support of the president, Dr. Wayne Burton. He speaks with confidence of how technology enables the administration to manage the institution and has created a "technological village" for our staff and students.

After achieving buy-in from the many stakeholders, the next step was to provide adequate training for every functional office, including a demonstration of how the system worked and how it managed changing roles. Although the integrated environment changed their processes and the way they conduct their day-to-day tasks, staff generally supported the project. We credit this

Cost Savings and Cost Avoidances

- Significantly reduced back-office support for basic administrative functions
- Consolidated help desk
- Earlier registration for returning and new students
- Enrollment and retention increases
- Online Web admissions
- Web recruitment (100 percent electronic)—5,000 prospects collected annually with targeted e-mail plans
- Online registrations routinely above 90 percent
- Online payment through credit card and e-check
- Student schedules and grades no longer mailed
- Financial-aid awards and book vouchers through the portal
- Noncredit student services integrated into the portal
- Faculty class rosters, schedules, and grade assignments online
- Significantly reduced postal mail due to portal, e-mail, and Web services
- Advising (online degree audit) with what-if scenarios available to students and advisors
- Integrated and more efficient LMS support
- Dynamic account generation (no manual account maintenance) with single sign-on
- In-house, 24 × 7 services and consolidated help desk
- Course resource areas automatically created and available for every course
- Automated class e-mail distribution lists available to faculty for every course
- Personal Web space dynamically available to support curriculum, Web projects, and course resource areas
- Intranet with many online services and paperless processes, including:
  —Room reservation system
  —Classroom technology and media request system
  —Federal work study system
  —Internally developed content management tools

acceptance to the communications we undertook ahead of time stressing the importance of the portal project to the college's success.

Students are introduced to the portal as soon as they join the NSCC community. We explain the portal's importance for communicating with them and that they need to access it regularly. Prior to launching the site, we developed a tool set that allowed students to activate their accounts, reset forgotten passwords, and find a lost username. These tools streamline our communication of usernames and passwords and minimize help desk and other administrative support requirements.

Lessons Learned

The advance communications and training were critical to the quick adoption and success of our integrated online environment. Other factors were also important. Pilots demonstrated the ongoing progress and success of the implementation to the campus community. They also highlighted issues that we needed to address. For example, initially we were naïve about the training for the online registration process. We designated one person to each 25-station lab. It was a little hectic for one person to walk 25 students through the process. We soon learned to assign more resources to pilots and also became more diligent about testing new applications in a real environment.

Prior to the portal, the IT help desk served faculty and staff requests, a user base of approximately 900. We expected the portal to increase the potential user base to more than 11,000, so we developed tools prior to the rollout that would address expected issues. The creation of self-service activation and username/password recovery tools was our first priority. In addition, a custom portal administration form was developed within our Banner system and made available to all functional offices. This form allowed those offices to resolve account issues, thus ensuring immediate resolution and preventing our already taxed help desk from becoming a bottleneck.

Another important lesson learned: be prepared for possible dependen-

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cies associated with upgrading a core database to integrate with the campus portal. Even though Banner and Luminis provided us with out-of-the-box integration, core ERP dependencies still needed attention. We anticipated upgrades for five dependencies, but the number mushroomed to 14 that had to be accomplished on a very tight time frame.

Some stakeholder departments needed additional support to make significant changes from procedures they had used for years or if they were not fully comfortable with the technology. As the project champions, the IT department stepped up to offer special assistance in those cases. Although necessary at the time, this effort led to some departments' becoming dependent on the extra level of support. A predetermined exit strategy with a time line would have served us well.

We also found that resources temporarily assigned to the project were needed longer than planned, and some had to be reassigned permanently. Furthermore, once the culture has changed, there is really only one direction to go—forward. You must manage expectations and ownership transition to get the reward of institutional transformation.

Into the Future

The unified digital campus is not a total solution, but it did address the

challenges facing NSCC five years ago: reduced funding, demand for increased accountability in performance and outcomes, increased expectations for personalized interaction and convenience, and the need to remain competitive. Our next projects will extend integrated self-services to alumni and donors and address data warehouse/business intelligence needs, including key performance indicator dashboards within the portal to allow for more informed, data-driven decision making.

Despite occasional glitches, the implementation of our unified digital campus has succeeded beautifully. The number-one reason was our strategic decision to build an integrated environment. Because of this strategic focus, we now have scalability with easier administration, a centralized identity management core, a consistent interface, single sign-on access, ease of use, and maximum effectiveness of all our applications. We have an integrated path for enhancing communication (academic and administrative), improving instructional support, and redesigning services. The integrated approach has proven itself as a good business model for IT and a good business and customer-service model for the college. Thanks to an innovative and strategic plan for using technology, the North Shore culture has adapted to reflect and expect continuous improvement in all aspects of the organization. *e*

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