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Information Technology

From the issue dated August 9, 2002

The Power of Portals

More colleges create Web services that can be customized to help students and professors

By FLORENCE OLSEN

Several years ago, the State University of New York at Buffalo took stock of its proliferating Web sites and found more than 250,000 pages spread out across 17 different servers. Not surprisingly, students and faculty members were having a hard time finding information they needed, even though they knew it was probably online – somewhere.

The university's solution was to consolidate crucial online services and information by creating a Web portal, MyUB. It is a site where the university, instead of sending mass e-mail messages, can publish information for everyone on the campus. Or it can post individualized messages that appear when specific users or members of groups log on. In other words, MyUB is not a standard Web site but an institutional portal.

At institutions that have standard Web sites, a student who wants to register online must first log on to the registrar's Web site. If she then wants to make changes in her housing or meal plan, she must log on to a different Web site. Paying tuition bills online requires logging on to another Web site, as does checking her e-mail or looking up an assignment for a course.

At many universities with institutional portals, however, a student logs on to the portal once and does all of those things. The portal is also the place where the institution publishes automated alerts as soon as grades go online, and where it posts reminders to students about such things as scholarship and tuition deadlines.

A growing number of universities, especially large public and private institutions, are creating portals, and many technology experts think that portals will become common at colleges. In a recent survey by Edu-cause, the education-technology consortium, institutional portals ranked fourth among the top-10 technology issues that college administrators expected would gain importance in the next 12 months.

Among its other benefits to the institution, the portal at SUNY -Buffalo has helped improve the university's ability to retain freshmen, officials say. One reason more freshmen at Buffalo are staying is that they're paying their bills on time, says Voldemar A. Innus, Buffalo's chief information officer.

Individualized announcements triggered by the university's student-records systems appear when students log on to the portal, reminding those students who haven't paid their bills that they owe tuition. "In past years," Mr. Innus says, "there were students in significant difficulty simply because they weren't paying attention to the bursar's office and were not able to register."

Buffalo officials say that freshman retention improved by 3 percent in the MyUB portal's first year, although they note that the portal project was only one of many efforts intended to keep freshmen in college.

Other colleges have discovered that creating a portal exposes hidden information problems. In doing an inventory of its more than 100,000 Web pages, for example, one college found that six different pages on its Web site gave tuition figures for the institution, but each page cited different figures. Portal projects don't solve such information problems, but they often expose them so that they can be fixed, says Jim Murphy, a senior analyst at AMR Research, a market-research company.

Although in recent years some departments within colleges have created departmental portals, institutions are now "stepping back and taking a more strategic view" by putting their effort into institutional portals, says Bradley G. Englert, a higher-education analyst at Accenture, a technology-research company.

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The cost of such projects is typically a few hundred thousand dollars a year.

'Must Have' Services

No two college portals are alike, although most provide a core of common student services. Students typically can register, drop or add courses, look up their grades, and check on what courses they need to complete their degree requirements. Most colleges see Web-based e-mail systems and individual course schedules as other "must have" portal services, both for students and faculty members.

Beyond offering those basic portal services, colleges can distinguish themselves with extras. Web-based student-advising services are a prominent feature of SUNY-Buffalo's portal. Officials say the portal has helped the university improve the quality of student life. A "cybrarian," whose job is to keep the portal's content relevant and up-to-date, sees that it includes information about all of the services – online and on the campus – that are available to students at the point when they would find the services most useful.

George Washington University throws extras into its portal, to save students time. When students use the portal to register for classes, for example, the information goes to Follett, the university's bookstore manager. Inside Follett's information system, the registration triggers a process that creates a book-filled electronic shopping cart that the student can pay for online.

A popular feature of the George Washington portal is its instant-messaging service, or online chat, which works with all of the "messengers" that students use – AOL's, MSN's, ICQ's and Yahoo's. George Washington officials got the idea for their institutional portal in 1998, when they noticed students gravitating to Yahoo Messenger and other Yahoo online services, says Francesco de Leo, manager of the university's interactive-multimedia-applications group.

"We wanted to bring them back," says Mr. de Leo.

At about the same time, the University of Washington at Seattle decided to experiment with portal technology. "Financial aid, student loan, registration, grades, transcripts, paying your bill, getting your statement – all of those things are available to students through the portal, and they use it," says Edward M. Lightfoot, director of information systems. Larger ambitions for the portal will be realized over time, he says.

Officials at the university believe they will be able to use portals to keep all kinds of people involved in the life of the university long after they have spent time there as students, physicians involved in continuing education, or even as patients in the university's medical centers. The plan is to create a personal profile for each user on the university's portal site, allowing the person to find information about events or research relevant to his or her affiliation with the university.

Mr. Lightfoot says a portal is "the sort of thing that grows incrementally."

Complex Software

Portal technology, which has been around for about five years, relies on complex, highly specialized software that can identify and communicate with specific users at the same time that it can retrieve and display timely information from a college's various information systems. Companies such as Campus Pipeline that specialize in college portals often charge initial license fees of several hundred thousand dollars and additional fees for annual service. Large business-software companies like PeopleSoft and courseware companies like Blackboard include portal software with their offerings. Largely gone, however, are the dot-com portal companies of several years ago that tried to give their software away to colleges in exchange for revenues from banner advertising on the colleges' portals.

Several colleges have chosen to build portals on their own. The University of Washington's portal began as a "skunk works" project – a low-profile, homegrown effort. Since then, it has become a model for the portals that some other colleges are building. Unlike the homegrown portals, those using commercial software typically don't require a large staff of Web programmers and designers on the campus to maintain them.

Homegrown or not, a portal is often only one of several big campus-information-technology projects claiming the time of a college's technical staff. At Genesee

Community College, in New York, the institutional portal ranks among the college's top three IT projects, says Steven T. Gooding, director of computer services. But at the University of North Carolina at Charlotte, the institutional portal is even more important than that.

"It's our highest-priority project right now," says Karin Steinbrenner, chief information officer.

On the Charlotte campus, four small teams comprising Web designers, IT staff members, and project coordinators work on the portal, along with 85 students and faculty and staff members who contribute ideas and information. For its portal, the college has licensed Campus Pipeline's Luminis software.

The University of Delaware, which is writing its own portal software, employs as many as 15 programmers and Web designers to work on a homegrown portal that the university will introduce to the campus in the fall.

Few institutions are yet considering what Drexel University has begun doing, which is extending its Campus Pipeline portal so that many of its functions transfer to PocketPCs, Palms, and other Web-enabled devices that students or faculty members carry around campus.

"Although, honestly, there are very few mobile users today – it's coming, and no one's really doubting that," says Kenneth S. Blackney, director of technology infrastructure at Drexel.

Some commercial portal companies, such as Epicentric and Plumtree, sell software tools that let colleges set up portals quickly. "They're the most complete, refined portal products out there," says Mr. Murphy, the AMR Research analyst. Both companies provide tools for getting information out of various databases, file servers, and Web pages that a college might have.

For colleges that are already using administrative-information systems from companies like PeopleSoft, SCT, and Datatel, the portal software and ready-made integration provided by those companies may be a better choice, Mr. Murphy says, because getting those systems to communicate with other systems is almost always difficult and time-consuming.

Companies such as Blackboard and WebCT that sell course-management systems also provide ready-made integration for their information systems with their own or with another company's portal software.

For large institutional portals, Mr. Murphy says, colleges may need to buy additional software – a variety known as content-management software – to gain greater control over how information is created and archived online.

An Open-Source Approach

A new development that already is changing how companies and universities develop portals is uPortal, a collection of free, open-source-software components created by a group of several hundred universities that calls itself the Java in Administration Special Interest Group, or JA-SIG.

One of those companies, Campus Pipeline, used uPortal for completely revamping its own software in close collaboration with the chief information officers from 10 universities – among them Drexel, the University of Miami, and the University of Notre Dame. The collaboration produced the new combination of software-integration tools and other programs that Campus Pipeline dubs Luminis.

Among companies that sell portal software, few have histories like that of Campus Pipeline. Before the dot-com bubble burst, it was one of the eager companies trying to give away its software in exchange for revenues from advertising on college portals. But 18 months ago, it dropped that advertising model and, like a traditional software company, began licensing its portal software.

Unlike Mascot Network and other portal dot-coms that have gone out of business, Campus Pipeline made proprietary server software with the basic components needed to "portalize" information that colleges had on their institutional Web sites and in their administrative-information systems. Campus Pipeline offered ready-made integration between its portal components and popular business software from SCT and Datatel. It later integrated its components with People-Soft's

administrative systems and various homegrown campus systems. Later still, the company began offering ready-made integration with WebCT's course-management system.

Carl W. Jacobson, director of management-information services at the University of Delaware, is active in the JA-SIG. He says that he was surprised to see Campus Pipeline reinvent itself. "We built uPortal to fight off [companies] like Pipeline, and two years later, Pipeline adopts the product."

Not only that, but Campus Pipeline wrote a considerable amount of new code on top of the uPortal code, "most of which we're contributing back to the uPortal consortium," says Andy Cooley, vice president of strategy development for Luminis products at Campus Pipeline.

"The technology is the easy part," Mr. Cooley adds. "The difficult part is deciding what you want to do with it."

In addition to having a mechanism for managing users' profiles – the key that makes portal technology work – the Luminis collection includes software based on Sun Microsystems' Sun ONE Calendar Server, Sun ONE Messaging Server, and other Web-server components, and on software from Documentum, a company that specializes in content management. Its software lets colleges control how information is created online and archived or deleted.

While officials who are busy creating new portal services constantly marvel at the technology, they often observe a very different response from students. "We thought we'd get a big reaction from the students, but it was really ho-hum," says Mr. Lightfoot, at the university in Seattle. He says the current generation of students expects to use such technology.

Fredric S. Payne, an undergraduate from Switzerland who is majoring in finance and international business at George Washington University, is an avid portal user. "I'm on the portal every day," he says, while giving a lightning-fast tour of the news and other features of his customized portal page. "It sort of gives you your own space, no matter what computer you're on."

In some ways, officials at George Washington have seen their institutional portal become too successful. The problem of "information overload" that the portal was meant to fix has returned. "Every time somebody thinks of something new, they immediately think of the portal," says Mr. de Leo. The portal's home page has become crowded. Already, its creators say, they are running out of space.

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