

Illinois State University



Java-based uPortal Provides Open Source Solution to Campus Information Needs

Key highlights

Institution

Illinois State University

Industry/Market

Higher Education

Hardware

- 16 Sun Netra™ servers
- 2 Sun Fire™ servers
- Cisco SSL accelerator and load balancer

Software:

- Java™
- JavaServer Pages™
- J2EE™
- Customized version of the uPortal open standard campus Web software

Challenge

- Integrate all relevant university information across a campus-wide portal

Solution

- iCampus campus-wide portal
- Allow students, faculty and staff access to personalized information.
- Integrates backend legacy systems

Less than three years ago David Williams, the Associate VP of Information Technology at Illinois State University, began grappling with a problem shared by many colleagues across the higher educational sector.

Williams understood that it was essential for his institution to build an anytime, anywhere, any device portal that would allow students, faculty, and staff access to the key information needed to thrive in modern education systems. But with a limited budget, legacy mainframe applications, and a variety of independent Oracle and MS SQL database solutions, it seemed as though there was no way to reconcile his far-reaching vision with the campus' limited resources.

Yet when 4,000 freshmen turned up for college this fall for their two-day orientation session, they were introduced to a state-of-the-art, campus-wide portal named iCampus that they immediately embraced as an essential educational, recreational and organizational tool.

“Originally we thought we would have to 'sell' it to students,” says Mark Troester, the director of Institutional Web Support Services at Illinois State. “But after a day or two we realized we just had to show it to them—they understood and picked it up almost intuitively.”

“The iCampus system is a great example of a technology that becomes indispensable. Once you use it, you wonder how you ever managed without it,” Troester says.

The students agree. “I really like the new iCampus,” emailed one freshman. “I like the ability to access all of my information from any computer.”

“I was very impressed!” wrote another. “This will revolutionize the way students access campus-wide information and will be very beneficial for the University.”

A quick look at what iCampus offers makes it easy to understand their enthusiasm. Even in its current early stage of development iCampus gives students access to a broad array of personalized information. Each student has a unique user name and password, and logs on to the system using a secure connection. Once online the students can see class schedules, grades, textbooks, and course material. They can check the status of their Redbird campus debit card, calculate their GPA based on future grades, and view their financial aid status. They can use the integrated calendar and email applications to keep in touch and on top of their schedules.

A quick look at what iCampus offers makes it easy to understand their enthusiasm.

“IBS offered us a jump-start that accelerated the process. Working with someone who had set up the framework previously was a huge advantage. Even though we were starting from zero they weren’t.”

Mark Troester,
Director of Institutional
Web Support Services,
Illinois State University

Some 4,000 freshmen were included in the portal’s first stage of introduction, but plans are already well advanced to increase both the number of participants and the scope of information, says Williams. “Our long term goal is to bring all student services to the portal, and then integrate the faculty and the staff,” he says. By next year Williams hopes to have all 20,000 Illinois State University students online, and to introduce online registration, which, because of devilishly complex business logic, is the holy grail of all campus portals. By the end of the current four year plan all relevant University information will be integrated and accessible on iCampus, he predicts.

So how did the Illinois State University manage to build such a comprehensive system in such a short time and with a limited budget of under \$500,000 over the past year? The University initially considered some of the commercial vendors who offered turnkey portal packages. They soon discovered that they lacked the flexibility needed for working with the campus legacy systems, and the cost estimates far exceeded campus funding.

Building a system from scratch was also out of the question. Illinois State University had neither the person power, experience nor resources to take on such a mammoth task. The best possible option, Williams discovered, was to work with the Java in Administration Special Interest Group, (JA-SIG), an independent organization devoted to increasing academic and business collaboration on the use of Java in administrative applications, and to

seek consulting help to mentor his staff in the new technologies needed for deployment.

Among JA-SIG’s main goals are to nurture communication of best practices, new technologies, and innovative Java projects, and to increase technology cross-fertilization between firms and schools on both a functional and geographic basis.

One of the most important outgrowths of these aims is the development of uPortal—a free, sharable academic portal under development by institutions of higher-education.

uPortal is an open-standard effort using Java, XML, JSP and J2EE. It is a collaborative development project in which the effort is shared among several of the JA-SIG member institutions which then make the benefits available to every single university.

The guiding idea behind uPortal is to build a platform that allows each user to define a unique and personal view of the campus Web and to use community tools, such as chat, forums, email and calendaring to build relationships and knowledge.

Williams quickly realized that uPortal could provide the kernel for a solution to many of the challenges he faced in implementing his vision of a connected campus. But he also realized that with limited time, staff and experience with the new technologies necessary to implement the uPortal architecture it would be hard to customize the modular application to the specific needs of Illinois State University.

The campus portal committee started looking for a mentoring relationship with a consulting firm that had experience with uPortal, Java, XML, and J2EE in a higher education setting. The campus bid for this project was awarded to Interactive Business Solutions, a founding member of JA-SIG and a highly regarded commercial vendor working in the higher education IT field.

ILLINOIS STATE UNIVERSITY **iCAMPUS** helping you navigate your way through campus information

[Home] [Layout] Welcome, **jeremy**, you are currently logged in. [Logout](#)

Home Campus Life People Search

Student Information

Please enter your PIN # to gain access to the following:

Course Information:
Your Class Schedule
Your Grades
Your Textbooks

Check Your Status:
Your Financial Aid Status

Updates:
Update Your Address
Confirm Your Attendance
Change Your PIN #

PIN #: [Submit](#)

Reminders

- Welcome Preview Students!
- July 30th, Last Day to Confirm Attendance
- August 9th, Summer Classes End
- August 15-18th, Passages
- August 19th, Fall Classes Begin
- March 1st, 2003, Financial Aid Application due for year 2003-2004

Redbird Card

[View Plan Balance\(s\)](#)
[Report Card as Lost or Found](#)

Additional Card Information:
[Locations accepting the Redbird Card \(PDF\)](#)
[Card account information](#)

ULID Services

Your password expires in **59 days**.

[Change Your Password](#)
[E-Mail Forwarding Request](#)
[Vacation Auto Reply Request](#)

Personal Calendar

Thursday, June 20, 2002

Jun 02

“IBS offered us a jump start that accelerated the process,” Troester says. “Working with someone who had set up the framework previously was a huge advantage. Even though we were starting from zero they weren’t.”

The El Segundo, California based company offers universities everything from development support to a complete turnkey uPortal solution—often using off-the-shelf components like the uPortal calendar and address book. Through its close relationship with Sun, IBS’s solutions also provide the best array of hardware. Most importantly, IBS sees its role as a mentor rather than a consultant. A key tenet of its program is to empower university staff to understand and implement uPortal applications by themselves.

“We enable the university to empower every organization within the institution to write content, while maintaining control of the infrastructure within the central organization,” says IBS executive Adam Rybicki.

This results not only in a significant cost saving, but in an intrinsically better system, since the staff that developed the system are also charged with maintaining and expanding

the system in the future. “We had a relationship with IBS where they not only helped code and modify uPortal, but where they helped train staff so we could handle it on our own,” Williams notes.

Illinois State employs just two full-time programmers for uPortal in the Web services area, and reassigned time for systems staff in Administrative Information Systems and the Internet systems support areas. Over 40 other staff in various units have been retrained to contribute as and when needed. Many of these are from the departments that actually input and use the information like financial aid, library, registrar, admissions, housing and student health services.

Another advantage of the system is that by utilizing agnostic languages like Java and XML, uPortal takes mountains of previously incompatible information from disparate legacy mainframes and unites these data into a single smooth interface. “By using Java and XML as common languages the portal is capable of collecting data, running it through a style sheet and presenting it on the browser,” Troester says.

“Our back end is all DB2 legacy systems developed over many years. So the web portal allows us to create a façade that gives the user the appearance of a fully-integrated, one-stop information system,” adds Williams. To interface DB2 with uPortal, the administrative information systems unit turned to Eagle, a middleware solution developed by the University of Florida. Eagle provided the key integration between DB2 and the XML need for uPortal. “Rather than having to re-write our applications specifically for the Portal, with Eagle we are able to retain the business logic embedded in our Cobol applications and still produce XML output,” said Dan Hayden, Assistant Vice President for Administrative Information Systems at Illinois State University.

The use of Sun equipment to run the portal has also been significant. Illinois State University staff were already familiar with Sun so little retraining was needed. The majority of the campus Internet services are deployed

with Sun solutions and Solaris. Also, the built-in scalability of Sun products fits with the gradual growth and rollout of new services, giving the system a degree of flexibility that would have been hard to achieve with other equipment.

In the best spirit of iCampus’ open-standard roots, Williams is happy to pass on the lessons he has learned so far. Even with the best system, he notes, “you can never do enough planning,” he advises. Other key factors are to work hard on communications to secure campus buy in, and to be flexible in implementation.

He has no hesitation in recommending the uPortal-IBS partnership to other academic institutions. “For state-run institutions with severe budget constraints it works very well,” he says. “Using open source software, sticking with existing solutions, integrating legacy solutions, and borrowing solutions developed by other universities, we created a system that we could never have achieved otherwise.”

Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 USA Phone 800 786-7638 or +1 512 434-1577 Web sun.com



Sun Worldwide Sales Offices: Argentina: +5411-4317-5600, Australia +61-2-9844-5000, Austria +43-1-60563-0, Belgium +32-2-704-8000, Brazil +55-11-5187-2100, Canada +905-477-6745, Chile +56-2-3724500, Colombia +571-629-2323, Commonwealth of Independent States +7-502-935-8411, Czech Republic +420-2-3300-9311, Denmark +45 4555 5000, Egypt +202-570-9442, Estonia +372-6-308-900, Finland +358-9-525-561, France +33-134-03-00-00, Germany +49-89-46008-0, Greece +30-1-618-8111, Hungary +36-1-489-8900, Iceland +354-563-3010, India, Bangalore +91-80-2298989/2295454, New Delhi +91-11-6106000, Mumbai +91-22-6978111, Ireland +353-1-8055-666, Israel +972-9-9710500, Italy +39-02-641511, Japan +81-3-5717-5000, Kazakhstan +7-3272-466774, Korea +82-2-2193-5114, Latvia +371-750-3700, Lithuania +370-729-8468, Luxembourg +352-49 11 33 1, Malaysia +603-21161888, Mexico +52-5-258-6100, The Netherlands +00-11-33-45-15-000, New Zealand, Auckland +64-9-976-6800, Wellington +64-4-462-0780, Norway +47 23 36 96 00, People's Republic of China, Beijing +86-10-6803-5588, Chengdu +86-28-619-9333, Guangzhou +86-20-8755-5900, Shanghai +86-21-6466-1228, Hong Kong +852-2202-6688, Poland +48-22-8747800, Portugal +351-21-4134000, Russia +7-502-935-8411, Saudi Arabia +9661 273 4567, Singapore +65 6438-1888, Slovak Republic +421-2-4342-94-85, South Africa +27 11 256-6300, Spain +34-91-596-9900, Sweden +46-8-6311-10-00, Switzerland, German 41-1-908-90-00, French 41-22-999-0444, Taiwan +886-2-8732-9933, Thailand +662-344-6888, Turkey +90-212-335-22-00, United Arab Emirates +9714-3366333, United Kingdom +44-1-276-20444, United States +1-800-555-9SUN OR +1-650-960-1300, Venezuela +58-2-905-3800, Or Online at sun.com/store

SUN™ THE NETWORK IS THE COMPUTER © 2002 Sun Microsystems, Inc. All rights reserved. Sun, Sun Microsystems, the Sun Logo, The Network is the Computer, Sun Fire, Sun Netra, J2EE, Java, JavaServer Pages, are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. LFC 3.2 Printed in USA 10/02 FE1896-0/xK