

2006-2007 Learning Technologies Grants Proposal

(COVER PAGE)

Project Information

Investigating an Open Source Collaboration and Learning Environment: Sakai R&D

Project Title

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Project Directors

Center for Teaching and Learning, Enterprise Information Technology Services

Requesting Department

\$33,000

Amount Requested Year 1

\$12,000

Amount Requested Year 2

Project Director Signatures

Proposal Endorsement Signatures

Department Head

Dean

Proposal Abstract (100-word maximum)

This project is a two-year research and development effort based on the open source Sakai Collaboration and Learning Environment (CLE). The Sakai CLE facilitates creative and innovative pedagogy by allowing for the development and integration of community developed and commercially available tools. The goals of the project are to determine the feasibility of establishing an open source CLE at UGA and to explore the innovative implementation of the Sakai platform with members of the UGA campus community.

Introduction

In the spring of 1997, a campus-wide group of teaching faculty selected WebCT to provide Web-based instructional resources for the University. Since that time, thousands of courses have been created on our WebCT servers and used to enhance the learning environment with online discussion, presentations, images, quizzing, and more. With the addition of Horizon Wimba Live Classroom, faculty and students engage in online discourse from locations across Georgia and around the globe.

While WebCT continues to serve the needs of most, and we hear positive comments about the basic suite of tools available, it is not everything to everyone. When asked about tools not included in WebCT, members of the WebCT support team are usually able to suggest work-around solutions using the tools that are available, but not always with the outcomes sought by the faculty member. The Learning Technologies Grant program has funded at least three successful efforts, Live Classroom, <emma>[™] and JExam, to address needs left unmet by WebCT. The directors of each program were highly motivated to fill the gaps in order to improve the educational experiences of their students. Unfortunately, the structure of WebCT often makes it difficult to integrate home-grown tools like <emma>[™] and JExam to allow for single sign-on, gradebook integration, and statistical analysis.

This brings us to the question – how many more innovative ideas for online and hybrid instruction might be cultivated by offering the campus community alternatives to the standard learning management system (LMS)?

Project Description

Rationale

Beginning in May, 2006, the LMS Executive committee (LMS Exec) was formed to evaluate the current options in the LMS market. Following the acquisition of WebCT by Blackboard, a long-time competitor, it was apparent that change in our LMS future was inevitable and would probably occur within the next two years. How this change will manifest itself has yet to be determined, but Blackboard has committed to supporting our current version of WebCT until December 2007 and migration to an enterprise system (such as Vista) after that. However, recent patent litigation initiated by Blackboard makes the entire LMS marketplace uncertain.

LMS Exec is comprised of instructional technology experts from CTL, EITS, the Georgia Center for Continuing Education, University Libraries, and the Colleges of Agriculture & Environmental Sciences, Arts and Sciences, Business, Education, and the School of Forestry & Natural Resources. The University CIO, Dr. Barbara White, charged the committee with its initial task, to evaluate the state of the LMS market and compare the features of competitive commercial products such as Angel, Blackboard Learning System, Blackboard Learning System Vista Edition, and Desire2Learn. While any one of these seems capable of meeting the needs of the campus at an enterprise level, there remains a need for a more flexible, extensible system. Sakai has the potential to accommodate that need in a way that no commercial product can.

With this proposal, LMS Exec requests funding for a two-year research and development effort based on the open source Sakai platform. Configuration of the software for UGA, training the faculty and student body, and migrating our way of thinking about the LMS are huge tasks. Launching a pilot project to explore the features, flexibility, and scalability of Sakai will provide valuable insight into the feasibility of an open source learning environment at UGA.

A similar project was established at Virginia Tech, a UGA peer institution. Tech is currently in the final pilot phase with Sakai-based courseware available to any faculty member or instructor who is interested. They have indicated that their pilot has been successful so far. In addition to Virginia Tech, seven other UGA peer institutions are Sakai Partners: Arizona State University, University of California, Davis, University of Colorado, Indiana University, Michigan State University, University of Missouri, and University of Nebraska. Eleven of fourteen UGA aspirant institutions are Sakai Partners: University of California, Berkeley, University of Wisconsin, Madison, University of Arizona, University of Michigan, University of Virginia, University of Washington, University of Minnesota, Cornell University, Northwestern University, University of Illinois, and University of Texas at Austin. Here in the University System of Georgia, Georgia Tech has recently joined as well. As Sakai Partners, each of these institutions has made a monetary investment and programming contributions in the Sakai community. (*UGA Office of Institutional Research and <http://sakaiproject.org>*)

Nature of the Innovation

According to the Sakai Project Web site (<http://sakaiproject.org>), “Sakai is an online Collaboration and Learning Environment (CLE). Users deploy it to support teaching and learning, ad hoc group collaboration, support for portfolios and research collaboration.” It allows for the integration of tools developed locally as well as those developed in the private sector. “Sakai’s development model is called ‘Community Source’ because many of the developers creating Sakai are drawn from the ‘community’ of organizations that have adopted and are using Sakai.” Tools are created by developers in the Sakai community to meet the needs of local users and then shared with the entire community for use “as is” or for customization for a particular user group.

As an open source project, developers can “study, change, and improve its design” (http://en.wikipedia.org/wiki/Open-source_software). According to the Open Source Initiative Web site (<http://www.opensource.org>), “when programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing.”

The Sakai community is composed of academic institutions and commercial entities that have embraced open source as an effective model for the development of an extensible collection of collaboration, teaching and research tools. Contributors include over 100 academic institutions and a number of commercial and non-profit partners (Sun, Apple, IBM, Oracle, Unisys, HarvestRoad). Successful large-scale deployments include Indiana (121,000 users), University of South Africa (92,000 users), Michigan (67,000 users) and Yale (14,000 users).

Regarding innovation here at UGA, the Sakai CLE will provide the campus community with opportunities to work online in new ways. In their work sites, faculty and students have access to tools to facilitate collaboration and constructivist pedagogy, shifting the instructional philosophy from teacher centered to student centered. Work sites can be created for courses, for programs, for small and large groups, and for individuals, including members of the UGA campus community and, if desired, those outside our institution.

Within work sites, a variety of tools are available to help the users achieve their goals. The wiki tool is an excellent example of a tool which facilitates creative instruction. This tool allows faculty and students to create and edit Web pages as a group, with a history of edits available for review. The wiki can be used in myriad ways, including for small group research and presentations in class, collaborative development of new curricula in departments, committee input on dissertation and thesis drafts, and communication across courses and disciplines. What is brilliant about this tool is that there are virtually no limits on what it can be used for – only the imagination of the user.

Other tools currently available in the Sakai CLE are similar to those found in WebCT. What makes the Sakai CLE innovative, however, is the possibility for developing and integrating any other tool needed by the UGA campus community. See a need? Request a tool. If that need goes beyond our small community, others in the Sakai community may already be working on a solution.

Relevance and Students Served

The commercial LMS products on the market today offer tools to facilitate classroom and content management. While this functionality is needed here at UGA for the thousands of courses the current LMS supports, these products can also limit how some faculty members use the technology in their courses. Our current LMS, though robust and highly functional, has presented some challenges to faculty members interested in more innovative and creative pedagogy. Sakai promotes innovation and creativity by supporting the development and integration of new tools, while encouraging collaboration among students and faculty to reach course objectives.

The number of students immediately served by this project will be determined by the adoption of Sakai by faculty and student groups in the pilot program. LMS Exec will recruit faculty members from each college represented on the committee, starting with five courses and expanding each semester. We will also develop a collaboration environment using Sakai and encourage student groups to test the product. By the end of the pilot period, if it is determined that Sakai is viable as a production service, it could reach thousands of students.

This pilot-to-production process has been proven by other successful LTG projects, such as Horizon Wimba Live Classroom. Live Classroom began as a small pilot project to fill a need unmet by WebCT and reached fewer than 100 students in the first two years. With a second grant, contributions from the College of Education, and negotiation with the vendor by EITS, Live Classroom is now a site-licensed, production service hosted by EITS and funded by the Student Technology Fee. LMS Exec has identified another gap in instructional technology at UGA, one that may be filled by making the Sakai CLE available to the campus community.

Budget

YEAR ONE				
ITEM	Quantity	Total Cost	Requested from LTG	Provided by Other Sources
Project Director time – CTL	8 hours/week	10,400	0	10,400
Support staff time – CTL	4 hours/week	5,200	0	5,200
Project Director time – EITS	8 hours/week	15,000	0	15,000
Support staff time – EITS	8 hours/week	10,000	0	10,000
Developer time – EITS	16 hours/week	20,000	0	20,000
Java J2EE training	5 courses	10,000	10,000	0
Travel to Sakai conferences for support staff	3 attendees	12,000	0	6,000
Travel to Sakai conferences for pilot faculty	3 attendees	12,000	12,000	0
Consulting – WebID	40 hours	2,600	0	2,600
HP Proliant DL380G4 servers	2	11,000	11,000	0
Year One Totals		108,200	33,000	69,200
YEAR TWO				
Project Director time – CTL	8 hours/week	10,400	0	10,400
Support staff time – CTL	4 hours/week	5,200	0	5,200
Project Director time – EITS	8 hours/week	15,000	0	15,000
Support staff time – EITS	8 hours/week	10,000	0	10,000
Developer time – EITS	16 hours/week	20,000	0	20,000
Travel to Sakai conferences for support staff	3 attendees	12,000	0	6,000
Travel to Sakai conferences for pilot faculty	3 attendees	12,000	12,000	0
Consulting – WebID	40 hours	2,600	0	2,600
Year Two Totals		87,200	12,000	69,200

Budget Justification

- Managing this project, configuring the hardware, programming for the pilot, supporting faculty volunteers, and training students will require considerable time. Included in the budget as matching funding are time estimates for project directors from CTL and EITS, a developer from EITS, and support staff from CTL and EITS. While not included in the budget, members of LMS Exec not employed by CTL and EITS will also contribute time, especially with features testing, support for pilot participants, and evaluation efforts.
- Sakai tools are based on the Java Programming language. We are requesting funding to provide training for EITS staff to learn and enhance their Java skills.
- The Sakai community meets biannually to share implementation information and experiences. LMS Exec has pledged to arrange for three members to attend each conference. We are requesting funding to send, in addition, three participants from the pilot project to each conference. Conference attendance will allow the faculty members to see how Sakai is used by others and to share their own ideas as well.
- HP Proliant DL380G4, 2 @ 3.4Ghz Xeon, 4Mb RAM, 3x 72.8Gb SCSI drives, 2Gb FC HBA. This is currently a standard configuration for Web servers supported by EITS, and offers processing power, connectivity to existing storage, and the reliability, availability and serviceability required of production services. This ensures an efficient transition from pilot to production status.
- Web Instructional Development (<http://www.georgiacenter.uga.edu/idl/webid/>) has created hundreds of online courses over the last seven years and has considerable experience in planning, producing, testing, and deploying web-based instruction. WebID will contribute consulting, development, and quality assurance services in support of the pilot, committing a minimum of 80 hours of staff time over the two years of the grant.

Timeline

Time Period	Objective	Persons Responsible
December 2006	Attend Sakai Users Conference	LMS Exec Representatives
Spring 2007	Purchase & configure hardware	EITS
	Begin Java J2EE training	EITS
	Install latest public version of Sakai	EITS
	Begin software configuration for UGA pilot	EITS
	Begin feature testing	LMS Exec
	Recruit a small number of faculty members, instructors, and students to participate in pilot program	LMS Exec
	Launch a Sakai collaboration site/Wiki for campus communication on the project	LMS Exec
Summer 2007	Attend Sakai Users Conference	LMS Exec & pilot volunteers
	Continue Java J2EE training	EITS
	Train pilot program volunteers	LMS Exec
	Update Sakai installation	EITS
	Update software configuration	EITS

Fall 2007	Implement pilot testing	Pilot volunteers
	Continue training for faculty and students	LMS Exec
	Continue installation and configuration updates as available	EITS
	Quality Assurance testing	WebID
	Attend Sakai Users Conference	LMS Exec & pilot volunteers
Spring 2008	Continue pilot testing	Pilot volunteers
	Continue training for faculty and students	LMS Exec
	Continue installation and configuration updates as available	EITS
	Quality Assurance testing	WebID
	Evaluate results from Fall pilot programs	LMS Exec
	Report progress to CAIT	LMS Exec
	Recruit new volunteers for pilot program	LMS Exec
Summer 2008	Attend Sakai Users Conference	LMS Exec & pilot volunteers
	Train new pilot program volunteers	LMS Exec
	Quality Assurance testing	WebID
	Continue installation and configuration updates as available	EITS
Fall 2008	Complete pilot program	Pilot volunteers
	Complete pilot program evaluation	LMS Exec & pilot volunteers
	Re-evaluate benefits of membership in the Sakai Partners Program	LMS Exec
	Complete reports to CAIT and CIO	LMS Exec

Learning Outcomes

The main outcome of this project will be to determine the feasibility of establishing an open source CLE at UGA. Regardless of the conclusions two years from now, all members of the campus community involved in this project, including members of LMS Exec and participants in the pilot, instructors and students, will have had the opportunity to explore whether open source tools allow for more creative and discipline-specific instructional methods than proprietary products such as WebCT. This information will allow for more informed decision-making in the future, and potentially reduced dependence on commercial solutions for instructional technology at UGA.

Support Plan

This project is supported by the Center for Teaching and Learning, a unit of the Vice President for Instruction, and Enterprise Information Technology Services. Also involved are members of LMS Exec who have pledged a portion of their time for pilot testing and training as well as funds for travel to the biannual Sakai Users Conferences. Should the Sakai project be successful at UGA, CTL and EITS staff will recommend funding for membership in the Sakai Partners Program and continued technical support from the Vice President for Instruction and the Chief Information Officer.