Final Report
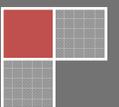
Course Management System Subcommittee

Flagship Information Technology Strategic Plan: Action Item 7.01

Course Management System (CMS) Subcommittee
FITS Action Item 7.01

Executive Summary

Action Item 7.01 of the LSU Flagship Information Technology Strategic (FITS) Plan states that, "The University must provide a single course management system that responds to the changing needs of the University." A subcommittee of the FITS Teaching and Learning Task Force was charged to coordinate a broad evaluation of possible solutions and to work with user communities to recommend a platform that will seamlessly integrate into LSU's systems, meet the largest majority of user demands, and be supportable.

The subcommittee put into place, a broad-based, inclusive, and open process for needs assessment, product evaluation, and selection. Following eleven months of extensive work, the subcommittee recommends the adoption of Moodle as the University's single course management system.

Moodle provides the greatest potential for meeting critical instructional and administrative needs quickly, efficiently, and effectively while stabilizing long-term costs. Moodle will provide local control and administration, while enabling the University to leverage considerable resources and support from the large Moodle user community.

The recommendation to adopt Moodle is based on critical underlying assumptions that must be met in order to ensure its successful implementation and ongoing administration.

   a. Cost savings that will result from the termination of Blackboard licensing and support must be dedicated to the support of Moodle. They should not be redirected to non-CMS initiatives.

   b. Adoption of Moodle will require the addition of three new staff positions dedicated to the support of Moodle application development and system administration. The salaries should be at competitive market values in order to attract and retain the caliber of individuals upon which the University's mission-critical CMS system will depend.

   c. A protocol must be implemented to prioritize future Moodle development projects. The committee anticipates that over time, numerous requests will be made for the development of new CMS applications and capabilities in order to meet emerging administrative and instructional needs. The number of requests may exceed the developmental resources at some point in time, therefore necessitating a need to decide which requests will receive priority. One option may be to channel requests through ISPAC.

The subcommittee also recommends that planning and preparation for all aspects of the transition begin immediately. An Action Team should be constituted as soon as possible and given the charge to lead the University's efforts to deploy Moodle. The team should be small enough to work efficiently to identify critical objectives and tasks, create a project timeline, engage appropriate individuals and resources to successfully accomplish the mission, and to provide general oversight of the project. The transition should include a comprehensive public information campaign to fully inform the University community. The Team should report to the CIO or his designated representative.

Course Management System Committee

FITS Action Item 7.01

The Flagship Information Technology Strategic (FITS) plan was developed by the University community in 2006 to set an environment that will enable the overall success of the LSU Flagship Agenda. The FITS Teaching and Learning Task Force was established in 2006 with the charge of implementing the Action Items of Section 7: Teaching and Learning, of the FITS plan.

Action Item 7.01 of the FITS plan addresses the University's need for a single CMS.

Action Item 7.01: The University must provide a single course management system that responds to the changing needs of the University.

While providing a plethora of options in the area of course (or learning) management systems might seem reasonable in light of IT abundance, too much variety forces an undue hardship on our student populations to essentially learn multiple systems. A variety may allow faculty greater choice and flexibility, however, the presence of more than a single system imposes an undue complication and hardship upon LSU's students. Hence a single CMS environment that takes advantage of a multitude of tools within a strategic platform suite should be established. Concerning the existing systems, neither Blackboard nor SemesterBook has proven satisfactory; Blackboard has also featured a steadily increasing licensing and support cost which is at odds with the rest of the IT paradigm of steadily increasing value for decreasing costs. A vended solution also constrains the flexibility and valuable customizations that many faculty and students would like to see. However, a wholly self-developed solution – such as SemesterBook – requires a great deal of resources to maintain over time, in an environment where development resources are scarce. ITS should be charged to coordinate a broad evaluation of possible solutions, including vended and open source options, and work with the key user communities (faculty and students), to select a platform that will seamlessly integrate into LSU's systems and meet the largest majority of user demands, and be supportable. A task force composed of faculty, students, graduate assistants (who perform a great many teaching tasks on campus), and academic leaders should be commissioned as a first step, and should seek a solution that could be implemented by fall 2007.

Project Committee

A subcommittee was established by the Teaching and Learning Task Force during the fall of 2006. The subcommittee was given the charge to recommend a single CMS solution as stated in FITS Action Item 7.01. The committee consisted of faculty, staff, and graduate and undergraduate students.

Holly Annison (University Registrar's Office)
Gary Breitenbeck (Agronomy)
Anne Collier (Education)
Alice Daugherty (LSU Libraries)
C.C.DuBois (Undergraduate student)
Joe Hutchinson (Centers for Excellence in Learning and Teaching)
Gerry Knapp (Engineering)
Will Monroe (Law Center)
Pam Nicolle (Center for Instructional Media Services)
Megan Poynot (Undergraduate student)
Martha Ratcliff (Division of Continuing Education)
Robert Russo (University Information Systems)
Justin Scott (Undergraduate Student)
Tiffany Walter (Graduate student)
Bill Wischusen (Biological Sciences)

The committee's initial meeting was in November 2006. Work on the project was continuous through September 2007, when the committee selected a single CMS for recommendation and presented its report to the chairman of the Teaching and Learning Task Force.

Background

Communications

Several strategies were implemented to ensure open communications and participation among the University's stakeholders. The chairman of the Teaching and Learning Task Force and the IT Faculty Liaison coauthored a special open letter to inform all University faculty members about the project and to invite them to participate in the evaluation process (Appendix A). A project web site (www.lsu.edu/cms) was created to provide current information and to function as a public repository for project-related documents and records. A special email account (cmsproject@lsu.edu) was created to serve as a point of contact for communications. Information and periodic announcements were placed on PAWS, the University's IT portal, and in *IT Wire*, the University's monthly IT online newsletter. Additionally, briefings and informational presentations were provided to various campus audiences.

Process

Timeline

The project was driven by two time-critical issues pertaining to the eventual implementation of the CMS of choice. Implementation of the CMS must take place at the beginning of the University's academic year (fall semester). Preparation for the implementation would take up to one year following final decision on a CMS. A detailed project timeline (Appendix B), including specific tasks and target dates, was developed to facilitate progress along a critical path that would enable the committee to fulfill its charge by the beginning of the 2007 fall semester.

Needs Assessment

The committee's initial efforts were focused on gaining a clear understanding of the University's CMS requirements. A needs assessment was conducted to inform the committee's work. Directed email was sent to all faculty, students, and appropriate staff members, inviting them to participate in an online needs assessment survey. 239 faculty, 2,024, students, and 14 staff completed surveys.

Conclusions from the needs assessment (Appendix C) were synthesized with known University IT parameters, a review of professional literature, information on similar projects at other institutions, and available information and reviews on several potential CMS to create a basic set of features and functions of interest to LSU. A list of "deal-breakers" (Appendix D) was also generated to establish absolutes on critical factors that must be met in order for a CMS to be selected for recommendation. Information acquired on product architecture, features, administrative and user functions, hardware requirements, training, technical and user support, and background information about potential vendors was used to issue a formal Request for Information (Appendix E) from CMS sources, and to inform product evaluation and decision-making.

Evaluation

Five CMS were selected for formal evaluation: Angel, Blackboard, Desire2Learn, Moodle, and Sakai. Responses to the Request for Information were obtained from all five (Appendix F).

The three commercially licensed Course Management Systems (Angel, Blackboard, and Desire2Learn) were set up for hands-on evaluations by their respective vendors. The two open source candidates (Moodle and Sakai) were hosted internally in a virtual server environment within the Frey Computing Services Center. A common demonstration course was set up on each CMS to evaluate the systems' features. Ninety volunteer evaluators were given instructor and student accounts to evaluate each system against a common rubric (Appendix G). Evaluators were split into two groups and each group was given three systems to evaluate, with Blackboard being the common system evaluated. Sixty-one completed evaluations were returned.

The University community was invited to live demonstrations of each of the five candidate CMS. Over a period of two weeks in early June 2007, each system was presented to the campus community. Each vendor was allotted time for four (4) fifty (50) minute presentations and an open lab for a period of eight (8) hours. The vendor presenting for Sakai was Unicon. LSU ITS personnel presented the Moodle CMS, due to the simplicity of implementing a working evaluation system. The open lab hours were allocated to promote hands-on experimentation with each system.

Decision-Making

The CMS subcommittee met on August 1, 2007 to review findings and to select a single CMS for recommendation to the Teaching and Learning Task Force. Discussion involved several issues that were considered across all CMS.

1. Deal-breakers - absolutes that candidate CMS must meet in order to be considered for recommendation
2. Features and functionality – ability to satisfy user requirements that were identified in the project needs assessment
3. Comparison of projected costs – initial implementation, future customization, annual operational costs, including licensing, hardware, personnel, training, and support (Appendix H)
4. Implementation requirements – resources, processes, time
5. User training and support – requirements for developing and delivering support for faculty and students
6. Vendor (technical) support – for LSU IT staff
7. Product orientation and future direction
8. Advantages and disadvantages of vended and open source solutions

Vended v. Open Source

The committee found attractive the potential for custom development of CMS applications via an open source solution rather than a vended solution. Open source is better suited for the development of LSU-specific mission-critical features in the most cost- and time-efficient manner. By adopting an open source solution, the University can set priority for the development of applications and features, will avoid future escalation of license and support costs associated with vended solutions, and can directly control the quality of technical support. Open source inherently provides greater flexibility to meet pedagogical needs of the University. Given the rapid changes in what faculty and students desire to see incorporated into any CMS, open source is the better choice as we look towards the future.

Conclusions about specific CMS

<u>Angel</u>

Angel met all deal-breaker requirements. It scored well on features and usability. Its interface was clean and intuitive, and it presented good potential for supporting innovative pedagogical strategies. Costs projections for sustaining Angel were within the expenditure "footprint" associated with the University's current CMS. Implementation requirements were within generally expected parameters.

Overall, Angel was not seen as a major improvement over the current vended solution and, although it is gaining market share in higher education, it is not evolving as quickly as open source alternatives. Considering the extensive user retraining that will be required and the need to develop an interface with the University's course scheduling and class roster functions, Angel would only provide a marginal gain, making it difficult to justify.

<u>Blackboard</u>

Blackboard met all deal-breaker requirements. It is a "known" option that generally meets the basic needs of many LSU users. The latest version of Blackboard would be the fastest CMS to implement since LSU is currently running an earlier version. However, it continues to present significant gradebook issues involving support for large-enrollment and multi-section courses.

As a vended solution, Blackboard does not provide as much potential for custom development of applications as does open source solutions. Customization of Blackboard or any of the other vended solutions, to enable known LSU requirements (i.e., integration with the University's course scheduling and class roster functions) or future needs will necessarily involve additional costs.

<u>Desire2Learn</u>

Desire2Learn met all deal-breaker requirements. Cost projections for sustaining Desire2Learn fell within the expenditure "footprint" associated with the University's current CMS. Implementation requirements were within generally expected parameters. However, Desire2Learn's usability was found to be difficult, suggesting significant implications for

faculty/student acceptance, training, and user support. Desire2Learn does not provide a significant improvement over the University's current CMS, and would necessarily involve the same cost issues as other vended solutions to implement needed custom applications.

Moodle

Moodle met all deal-breaker requirements. Cost projections for sustaining Moodle were within the expenditure "footprint" associated with the University's current CMS. Implementation requirements were within generally expected parameters for the project.

The committee noted that Moodle's open source architecture makes possible local customization by LSU IT personnel, as well as collaborative development of applications by an international user community. Moodle is very forward-thinking from a developmental perspective, and it enables innovative student-centered learning strategies. A growing number of major institutions of higher education world-wide are adopting Moodle, as are the University of Louisiana System and the Louisiana Community and Technical College System, each of which has a user base larger than LSU.

The committee felt that Moodle provides the best option for quickly and cost-effectively implementing needed LSU-specific custom applications, stabilizing long-term costs, and deploying future administrative and instructional applications and resources, either locally developed or obtained through collaboration with other Moodle-using institutions. In other words, Moodle will provide steadily increasing value while decreasing costs.

Sakai

Sakai does not meet the deal-breaker requirement associated with course archiving. Its projected implementation cost considerably exceeds the University's current CMS expenditure "footprint." Professional IT developers for Sakai are more expensive than those for Moodle, due to Sakai's use of JAVA RSF programming language and Moodle's use of PHP. Also, Sakai's quiz module, Samigo, has been removed from the core of Sakai, due to data loss.

Related Issues

<u>The Long View</u>

As part of the decision-making process, the committee not only considered immediate comparisons of candidate CMS and their adequacy to meet current needs, but also which CMS will have become the best solution five years hence. The consensus was that open source presented the greatest potential for innovation and the pursuit of yet unknown applications and technologies.

<u>Communication and Change Management</u>

CMS is a mission-critical IT application at LSU. There will be a substantial need for broad-based communications and change-management across the University community prior to, during, and following implementation. Comprehensive and inclusive planning and preparation will be required to anticipate and address user concerns and needs. The process should be initiated as soon as possible.

<u>User Enablement</u>

The University's CMS user base is huge, encompassing virtually all students and faculty. Comprehensive user orientations, training, resources, and support must be developed and deployed prior to implementation of the CMS. Multiple strategies and a blend of technologies should be used to deliver services and resources to the user desktop. Training tutorials, course templates, and FAQs are examples. Solutions for the CMS/course schedule interface, class roster application, and gradebook functions should be components of the fall 2008 deployment. In short, the transition should be made as easy as possible for users and ensure early successes.

Recommendations

Recommendation #1: Adopt Moodle

The subcommittee recommends that the University adopt Moodle as its single course management system effective with the fall 2008 semester. Moodle's open source architecture provides the greatest potential for meeting critical instructional and administrative needs quickly, efficiently, and effectively through local control and administration, while leveraging considerable resources and support from the large Moodle user community

The recommendation to adopt Moodle is based on critical underlying assumptions must be met in order to ensure the successful implementation and ongoing administration of Moodle at LSU.

 d. Cost savings that will result from termination of Blackboard licensing and support must be dedicated to the support of Moodle. They should not be redirected to non-CMS initiatives.

 e. Adoption of Moodle will require the addition of three new staff positions dedicated to the support of Moodle application development and system administration. The salaries should be at competitive market values in order to attract and retain the caliber of individuals upon which the University's mission-critical CMS system will depend.

 f. A protocol must be implemented to prioritize future Moodle development projects. The committee anticipates that over time, numerous requests will be made for the development of new CMS applications and capabilities in order to meet emerging administrative and instructional needs. The number of requests may exceed the developmental resources at some point in time, therefore necessitating a need to decide which requests will receive priority. One option may be to channel requests through the ISPAC.

Recommendation #2: Begin immediately to plan and prepare for all aspects of transition

An Action Team should be constituted as soon as possible and given the charge to lead the University's efforts to deploy Moodle. The team should be small enough to work efficiently to identify critical objectives and tasks, create a project timeline, engage appropriate individuals and resources to successfully accomplish the mission, and to provide general oversight of the

project. The transition should include a comprehensive public information campaign to fully inform the University community. The Team should report to the CIO or his designated representative.