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Investigate the Canvas Learning Management System

TEAM/COMMITTEE MEMBERS

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1) Problem Statement – Purdue University currently uses Blackboard as its primary learning management system (LMS). The Blackboard contract expires on September 30, 2017. This committee’s scope was to investigate the opportunity for the use of Canvas an alternative LMS at Purdue.

2) Executive Summary – The committee’s approach was to do a high level investigation of Canvas to determine if it had the potential to serve as an alternative to Blackboard. In past years Blackboard has cornered the market of LMS’s by buying up many of its competitors. Their product is complex but is “seasoned” and well integrated into our student information system, Banner. Its architecture is server based which requires Purdue to house the system and data on site and schedule upgrades and maintenance during planned cycles. Its wide-spread use on campus requires careful consideration when looking at options for any change. It’s important as we consider other products that a broad base of constituents be included in the review process in order to maximize our potential for acceptance.

Canvas is a product getting a lot of attention in the LMS space partially because it is an open-source alternative. Meaning that if an interested party wants to download a copy of the system, manage, and run it on their own it is available. However for an integrated system-wide solution the more popular adoption approach is provided by their cloud based solution. As most cloud based services, modifications and upgrades are made incrementally and by the vendor. The product is run in the Amazon cloud negating the need to host it using campus resources. It is feature rich and takes advantage of current technology such as drag and drop, mobile
devices, pictures, video, social networking, etc. It includes an open application programming interface and many 3\textsuperscript{rd} party interfaces.

3) **Recommendation(s) & Action Items** – Due to the wide-spread use of Blackboard at Purdue, it would be in our best interest to identify potential alternative solutions giving us a long lead time for migration should we decide not to renew the Blackboard contract in 2017. Based on this committee’s review we believe Canvas could be a viable alternative. We recommend a pilot project be conducted under the oversight of a committee representing faculty, students, and staff. The recommendation is based on the results of the following reviews:

**Logistics (details included in attachment A):**
- A demonstration of the Canvas product
- Survey/benchmark those who’ve migrated from BB to Canvas
- Capture reliability and availability statistics

**Functionality (details included in attachment B):**
- Determine if Canvas has the potential to be a replacement for Blackboard, will it support the high level needs for the academy as well as conferences and certification programs
- Determine if Canvas should it be used as an augmented tool if it does not prove to be a viable solution as a campus-wide solution
- Look at 3rd party integration maturity – Publisher, Building Blocks, Kaltura, Echo 360, PREMIS, Loncapa, etc.

**Financial & Legal (details included in attachment C):**
- Develop a high level cost estimate
- Determine high level sustainability of the company
- Confirm housing Purdue intellectual property in a cloud based LMS solution is acceptable

**Integration & Data (details included in attachment D):**
- Determine if Canvas provides application integration to Banner similar to Blackboard
- Determine mobile device integration/limitations
- Determine extract-transform-load (ELT) data capabilities/limitations
- Determine learning outcomes, data analytic, dashboard, etc. capabilities/limitations
- Determine tools available to promote student success

**Course Network LMS (details included in attachment E):**
- During the Canvas investigation, Purdue was offered an opportunity to also review the CourseNetworking (CN) application to determine if CN could serve as a “light-weight” Learning Management System (LMS) alternative to Blackboard Learn
- It is our recommendation to not pursue the use of CourseNetworking.
4) **Investigation:**
   a) Consideration for key stakeholders that should be included in the pilot are indicated below:
      i) Faculty from each college and each campus be included
      ii) Students at the graduate, undergraduate level be included
      iii) Certificate and non-degree participants and on-line learners
      iv) A/P staff who develop and manage online content be included
      v) Staff from the Registrar’s Office and ITaP along with other administrative areas to be determined should be included to gain a better understanding of the integration issues with other systems.
      vi) Staff to address security and cloud based data risks should be included
      vii) Licensing and procurement staff should be included
   b) Milestones and key dates:
      i) By July 2014 identify the pilot oversight committee
      ii) By Sept. 2014 vet and propose the oversight committee and scope of the initiative outlining specific credit courses, non-credit offerings and milestones to participate
      iii) By Summer 2015 be ready to pilot initial set of courses
      iv) By Fall 2016 make a recommendation based on the pilot to continue to use Canvas, look for other alternatives or decide to renew Blackboard

5) **Resource Requirements**
   a) The Canvas pricing model is based on a one time implementation fee and a recurring annual fee based on student head count. Our current Blackboard contract has very favorable pricing therefore it is anticipated that a migration to Canvas could incur a per year average recurring need of $500K above today’s Blackboard cost. See attachment C for detailed information on financials.

   There may be additional opportunities to offset cost by holistically looking at our database strategy. Blackboard runs on the Oracle database platform. If Purdue were to adopt Canvas our dependency on Oracle would be reduced. There are other major systems that may be migrating away from Oracle during this same time frame. This project should work in conjunction with the ITaP infrastructure team to determine if our dependency on Oracle could converge to less expensive database platform(s) by 2017.
1. What were the driving issues for your decision to adopt Canvas?

- The Vista phase out caused (forced) three universities to investigate new options, and the other two needed to upgrade from older systems for reasons including cost, functionality, and faculty and student satisfaction
- Texas conducted a routine evaluation of the LMS marketplace and issued an RFP from Blackboard, Desire2Learn, and Canvas. Sakai and Moodle were in the initial review, but the decision was made to eliminate them as candidates early in the process
2. When did you migrate to Canvas?

- Migrations were generally very quick, 12 months. No scale up problems were noted. For the most part, the universities had significant faculty communication and engagement, with migration support.
- Texas took a very slow, methodical process. 6-month eval, 1 year RFP, 1 year pilot, 2 year transition.

3. What is the percent of usage/adoptions rate?

- Utah (65%)
- Auburn (45%)
- Washington (50% at branch campuses, 20% of the 2,000 Seattle courses, 70% of students take a Canvas course)
- Central FL (100% of on line courses, 50% for blended courses)
- U of Col Denver (Adoption is at 100% for courses using LMS)
- Bowling Green (71% of students, 73% of faculty)

4. What is the level of faculty satisfaction with Canvas?

- Utah: Faculty very satisfied in general. Math faculty seek more advanced equation and math homework functionality.
- Auburn: Faculty very happy with Instructure, but certain Blackboard features did not transfer. Students also very positive and especially like the mobile functions
- Washington: Faculty survey shows satisfaction.
- Central FL: Faculty were involved in the selection process and choose Canvas. Most are pleased with no significant negatives
- U of Col Denver: have surveyed faculty and students with 80% of faculty preferring Canvas and Students 90% satisfied.
- Bowling Green: 79% of students and 75% of faculty were satisfied of very satisfied
- Texas: faculty satisfaction is high so far. However, with the 2-year transition, only early adopters have opted to use Canvas so far.

5. What is the level of IT/administrative satisfaction with Canvas?

- Utah: Highly pleased. Canvas is robust, reliable and higher availability and performance.
- Auburn: IT is also very pleased with Instructure. Students also very positive and especially like the mobile functions
• Washington: IT is very positive on Canvas. Washington IT does 1st tier support. Good sub account structure is important. Do have grade book constraints, such as grading an exam on a 4.0 scale. Do workarounds on this.
• Central FL: IT likes the cloud hosting. Had a few architectural issues to resolve. Issue resolutions are minutes.
• U of Col Denver: Awesome satisfaction, now have just one LMS. Canvas easier to support, and has good tech support. Were able to add functions such as plagiarism detection quickly.
• Bowling Green: 90% were satisfied or very satisfied
• Texas: very satisfied with administration of the product

6. How is the hosting function performed?
   • All six use cloud hosting and are very pleased with that arrangement. The cited lower cost compared with the complexity of campus hosting. All have excellent up time, and considered the protections of information to be satisfactory.
   • Texas: No issues.

7. What additional factors should Purdue consider in evaluating Canvas?
   • Comments were very positive about migration, faculty and student acceptance, cloud hosting. No major caveats provided.
Canvas has replaced Blackboard:

- Maryland: http://www.it.umd.edu/ITforUM/2012/fall/ELMS.html
- Florida: http://lms.blog.usf.edu/?page_id=77
- Alabama Birmingham: https://www.uab.edu/students/announcements/item/1373-canvas-to-replace-blackboard-lean-as-uab-learning-management-system
- New Mexico State: http://learning.nmsu.edu/canvas/
- Considering, leading candidate:
  - Northwestern: http://dailynorthwestern.com/2014/01/17/campus/canvas-emerges-as-frontrunner-in-search-for-blackboard-replacement/ (This story has additional detail)

Course import issues from Blackboard – How, issues?:

- UW Bothell: http://www.uwb.edu/learningtech/help/how-to/canvas-for-faculty/importing-bb-courses-into-canvas/what-to-expect
- USFCA: http://www.usfca.edu/uploadedFiles/Destinations/Offices_and_Services/ITS/learning/canvas/PDF/Resources/MigrationtipsforFaculty.pdf
- Texas Training modules: https://utexas.instructure.com/courses/633028/modules

Canvas evaluation reports

- U Washington
- Texas: https://www.utexas.edu/its/canvas-project/
- Central Washington: http://www.cwu.edu/online-learning/canvas-pilot-evaluation

3rd Party Integration Maturity

- http://guides.instructure.com/s/2204/m/4214/l/41903-what-integrations-are-or-can-be-enabled-with-canvas

- See also:
IT Operational Oversight Committee
Canvas Report Attachment B

- Kaltura: http://universitybusiness.co.uk/News/kaltura_releases_video_app_for_canvas
- Publisher resources: http://vimeo.com/46039987

- Real-time Student Information System (Banner) integration – Yes
  - Course-load and roster sync – Yes
  - Real-time drop/add – Yes
  - End of term grade-push from Canvas to Banner – Yes
  - Retention of student course data after drop/withdraw – Yes
  - Course section merge – Yes

- Kaltura Media – Yes
- Echo360 lecture capture – Yes
- iClicker – Yes
- Scantron score/grade load – Yes
- McGraw-Hill Connect - Yes.
  https://www.dropbox.com/s/rs90sdouvfxfagsf/MH%20Campus%20click-through%20Canvas.pptx
- WebAssign – Yes (WebAssign needed to do work on their side to make the LTI integration better meet customer needs.)
- Pearson MyLab/Mastering – Yes
- Enrollment Manager (allows faculty to add instructors/TAs to a course, but checks FERPA certification first) - Custom integration? Probably but more info needed.
- MacMillian - Part of iClicker? Then yes. More info needed to confirm.
- Respondus Lockdown Browser - Yes. Quiz Creator and lockdown browser
- LON-CAPA score import - Unknown. No record of existing integration but it a) might have been done by a customer already or b) probably possible using open APIs.

**Additional discussion to understand requirements:** Premis and Ellucian Course Signals
- Canvas users are able to leverage the Canvas API to integration with other tools. Canvas API documentation is available at: https://canvas.instructure.com/doc/api/index.html
- Many of these (and other) tools utilize the LTI standard which makes integration with Canvas easy  https://www.edu-apps.org/index.html
Note: Details removed for posting.
Determine if Canvas provides application integration to Banner similar to Blackboard
  o Canvas provides real-time integration capabilities for Banner. Minor modifications may be necessary to account for the uniqueness of each institution.
  o Canvas provides an API for end-of-term grade submission

Determine mobile device integration/limitations
  o Canvas currently has a cross-platform mobile app that is provided at no cost to institution, students or faculty.
  o The mobile app allows for student notifications and assignment submission.
  o Text message available through Canvas
  o Mobile grading app for faculty to be released in 2014. Also free.

Determine extract-transform-load (ELT) data capabilities/limitations
  o Data access may be limited and require custom reporting utilizing Instructure Services at an additional fee.
  o Standard default reports are available through the admin interface.

Determine learning outcomes, data analytic, dashboard, etc. capabilities/limitations
  o Integrated learning outcomes with all content and assessments
  o Data analytics related to student performance and activity available. Similar in scope to Blackboard, but displayed in a more graphical manner with more detail.

Determine tools available to promote student success
  o Student homepage displays current grades for students in all courses
  o Alerts can be create based on grade criteria determined by individual faculty
  o Alerts can be delivered via text and email.
Overview

Teaching and Learning Technologies conducted an evaluation of the CourseNetworking (CN) application with two goals in mind:

1. To see if CN could serve as a “light-weight” Learning Management System (LMS) alternative to Blackboard Learn.
2. To facilitate potential research and development collaborations between the CN and Purdue University.

Recommendation

It is our recommendation to discontinue the use of CourseNetworking as an ITaP supported service for the following reasons:

1. According to Dr. Ali Jafari, CEO of CourseNetworking LLC, CN is a complement, not a replacement for a Learning Management System. CN provides a social network that focuses on collaboration, social learning, and pairing learners based on shared interests. This is also the conclusion reached by the pilot instructor.
2. No research or development collaborations occurred.
3. At this time, there does not appear to be sufficient interest from faculty to pursue use of CN.

Pilot Summary

During the spring 2014 semester, CN was scheduled to be piloted in 3-5 courses; however, only one faculty member ultimately piloted CN in two courses. Other prospective faculty members dropped out due to personal reasons not related to CN, e.g., course change in department, feeling overwhelmed with other commitments during the spring semester, etc. The one faculty member that did pilot CN found some beneficial components to the tool, but did not feel the shortcomings of the assignment functionality would make it a worthwhile tool for her subsequent use.

Pilot Instructor Goals

CN was used both as a tool to enable student interaction as well as assess CN’s usability in the pilot course, a course in Human-Computer Interface design. The pilot instructor is very interested in social media in courses and is an early adopter.

The instructor’s goals were to determine if:
1. CN can be a Blackboard replacement that is much easier to use. The instructor stated that the Blackboard interface is “incredibly clunky and annoying.”

2. CN enables more lightweight sharing and interaction among students. A place where they can share interesting links and examples.

3. CN will work reliably.

The instructor’s overarching goal was to find a tool that integrates all the other tools being used presently. For a typical course: Blackboard, a blog, Twitter, and a wiki or Pinterest to crowd source ideas.

**Pilot Instructor Feedback**

The instructor provided the following feedback.

“In my experience so far, the CN is not a Blackboard replacement. It served the purpose of lightweight interaction and sharing very well, but the part about creating, submitting, and grading assignments is much weaker than Blackboard. It simply misses some features that Blackboard has. For example, the CN forces an information architecture organized around the Daily Tasks. However, it would be beneficial to have a more flexible way of organizing information - for example, one place (not just a post) where students can see all the info related to the assignments in one place. Even if I can put that info in a post that they can mark to remember later, there is no possibility to create a link to uploading the assignment in a post. So I have to tell them to find the link to upload the assignment in the task for day xx. That violates the principle of having all info needed and relevant to one task in one place and it adds interaction costs. Another thing that is annoying is that there does not seem to be a way to download ALL students’ assignments. My TA has had to download them one by one, which is meaningless busy work.

But, in terms of lightweight interaction, sharing interesting links and examples, asking and answering questions, the CN does a good job of replacing the other tools I would have used otherwise: my blog, Twitter, and Pinterest. Students like to have a one-stop-shop for ALL their courses, or at least for one course. This is why, no matter how tempted I’ve been, I did not move the assignments to Blackboard. They do not like to have information scattered in several places, and from a usability standpoint, this wouldn’t make sense.”

The instructor would possibly use CN again, but only for this particular course because she requires students to post and share links and information. While CN facilitated student sharing, commenting and reflecting, the instructor did not feel that adding CN as a complement to Blackboard would be a good idea. She believes it would be confusing for students to have multiple grade books and multiple
discussion and assignment tools. The instructor believes she needs a more robust assignment and grade book tool and CN did not meet this need.

Although CN offers the ability to share discussions globally using the “Global Course” option, allowing students with similar interests to interact, the instructor chose to keep the course private. She felt that her students have a large amount of information to sort through without also having posts that may not fit the learning objectives of her course. Assignments posted by other instructors would also be confusing.

There were no problems experienced with reliability during the pilot.

**Detailed Comments**

**Faculty**

1. No Teaching Assistant role. Can assign the title, but it has same privileges as instructor.
2. Creating, submitting and grading assignments problematic; organized around Daily Tasks making it hard for students to find. Student assignments had to be downloaded one at a time.
3. CN provided good student interaction from a single location; replaced multiple tools, such as blog, Twitter and Pinterest.
4. Poor information architecture – navigation scheme very limited. Architecture is linear and restrictive. Instructor would have liked more leeway in creating course structure. The instructor opted to organize tasks by day. Assignments were difficult to find and submit if the student didn’t remember on which tab/day the assignment resided. It caused confusion and missed assignments.
5. CN UI design is not user-centered and there didn’t appear to be a clear design philosophy.
6. Training might have improved both the instructor and student experience; however, since this was a course in HCI, instructor thought this would be a good learning experience for the students.
7. Need a more efficient way to download and grade assignments. Currently, one assignment is downloaded at a time.
8. The CN term “Dropbox” for assignment submission was confusing for students.
9. Features used most often were discussion posts and polling. Two quizzes were attempted, but were not successful. Students could not see their results and subsequently submitted quizzes multiple times.
10. Prior to pilot beginning, some faculty found the inability to easily move final grades from CN to Banner a deterrent to using CN.
Students

1. Navigation not always intuitive and not always aware of new features when they become available.
2. Would like posts made by instructor (versus other students) to be color coded and more visible. Some students seemed unaware that posts could be sorted.
3. Availability of quiz grade located in Dropbox; student was looking in Gradebook.
4. Too easy to drop yourself from course. Function should be made less visible.
5. Students like the “Remember It” option.
6. Students like the easy social interaction with classmates.
7. Students didn’t seem to like the way the course was structured (use of Daily Task, tab structure).