Blackboard Advisory Committee: Status Report, fall 2011
JQ Johnson, 22 Nov 2011 (for meeting scheduled 29 Nov 11)

Overview and Background
Welcome to the 2011-12 Blackboard Advisory Committee. The committee meets approximately quarterly and provides policy guidance to the Libraries. It ensures that Blackboard remains responsive to the needs of the faculty and the university community. This year’s committee has been reorganized somewhat to give it more focus as a Faculty committee, with official members who are teaching faculty, and with faculty (co-)chairs. We retain a number of “ex officio” members representing interested administrative units such as library, registrar, and information services. Members of the committee for this fall include (new members starred*):

Irina Armianu French (Romance Languages) *
Deborah J. Bauer Finance (LCB)
Pedro Garcia-Caro Spanish (Romance Languages)
Grace Golden Human Physiology
Deborah Healey AEI / Linguistics
Michael Hennessy Computer & Info Science CO-CHAIR
Skipper McFarlane Academic Extension
Deborah Olson Special Education CO-CHAIR
Raghuveer Parthasarathy Physics *
Ken Prehoda Chemistry
Michael R Price Mathematics
Caleb Southworth Sociology *
Robert Voelker-Morris Academic Extension / Teaching Effectiveness

Tim Boshart ex officio (Library)
Helen Chu ex officio (Info Services)
Sue Eveland ex officio (Registrar)
Mary Ann Hyatt ex officio (Law)
JQ Johnson ex officio (Library)
Nargas Oskui ex officio (Library)
Sean Sharp ex officio (Info Services)

We have a slightly smaller committee than last year, and in particular did not attempt to solicit student members since our experience last year was that it was quite hard for independent student members to schedule attendance. If the committee feels that changes in membership or committee scope are needed we’ll work to implement those proposals. We expect that the composition of the committee may change slightly for winter term, and that we will attempt to add one or two more instructional faculty members at that time.

Some background for new (and existing) members
The UO Blackboard course management system is managed by Scholarly Communications and Instructional Support (SCIS) in the Libraries, in collaboration with UO Information Services (IS). It provides a central location for online course materials and a tool for implementing online components in UO courses. The system is managed on a day to day basis by Tim Boshart, the SCIS Blackboard Coordinator. Overall project leader is JQ Johnson. Additional major support includes database management (IS, especially Stephany Freeman), hardware infrastructure (IS under the direction of Micah Sardell), faculty training (Nargas Oskui, CMET), pedagogical support (TEP, Robert Voelker-
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Blackboard is one of the most heavily used web services on campus, with an average of more than 3.3 million webserver hits per day. At one point in dead week (Dec. 2010) there were 15,000 people logged in to our Blackboard system -- more than half of the entire UO community.

Blackboard usage continued to grow during the 2010-11 academic year, with a growth in the number of course sites (courses using blackboard) of 8.7%.

During the 2010-11 academic year we supported a total of approximately 6962 CRN\(^1\) coursesites. (versus 6405 the previous year), a 9% year-to-year growth in the number of coursesites (courses using blackboard). In addition to these class-related sites, we have as of November 2011 25 sites in use for specific undergraduate majors, 141 sites for academic units, 43 sites from previous terms (in most cases made available to allow access for incompletes), about 200 test and development sites, and various other sites, for a total of 2794 available sites. Among sites in the “other” category are special-purpose training sites (e.g. “Student Data Warehouse Training” or “Introduction to Banner”), and sites set up to foster small group communications (e.g. “Mindfulness Discussion Group,” “Student Affiliates of the American Chemical Society,” or “Registrar's Reports and Documents”). As indicated in the following table, we continue to experience robust year-to-year growth in usage by a variety of metrics:  

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\(^1\) This number includes sites corresponding to a single CRN, “merged” sites corresponding to multiple CRNs, and sites for AEI non-credit courses. It includes only those coursesites that instructors marked as “available” to students.

\(^2\) We upgraded to Blackboard Learn 9.1 in December 2010. The increase in total number of webserver hits may be partly an artifact of changed system architecture. However, the increased rate of blackboard logins seems very real, and reflects a change in student behavior with much more frequent logins presumably to check the status of their courses.
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Data for fall 2011 also reflects continued growth in instructional usage. For example, total number of active (available) CRN coursesites in fall 2011\(^3\) was 2248 as of 28 October, a 6.8% increase over the previous fall numbers; the growth in number of coursesites seems to be slowing down as we reach saturation on this metric, whereas growth in number of enrollments may actually be accelerating reflecting increased overall UO enrollments and larger courses. Other data for this fall includes:

<table>
<thead>
<tr>
<th></th>
<th>2009-10</th>
<th>2010-11</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CRN course sites</td>
<td>6405</td>
<td>6962</td>
<td>8.7%</td>
</tr>
<tr>
<td>(terms 01 through 08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of student course site enrollments</td>
<td>237263</td>
<td>244299</td>
<td>3.0%</td>
</tr>
<tr>
<td>(total, terms 01-08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web server total hits (millions)</td>
<td>1035.8</td>
<td>1225.0</td>
<td>18.2%</td>
</tr>
<tr>
<td>(Sept 1-Aug 31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web server total data (GB)</td>
<td>22648</td>
<td>29926</td>
<td>32.1%</td>
</tr>
<tr>
<td>(Sept 1-Aug 31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of Blackboard logins</td>
<td>3,586,419</td>
<td>6,645,938</td>
<td>85.3%</td>
</tr>
</tbody>
</table>

We have seen over the past year a striking increase in number of logins. Data for fall 2010 showed an average of about 10,000/day. For all of 2010-11 we showed an average of about 20,000/day, and for Fall 2011 we are showing an average of more like 30,000/day. The average student login is for a fairly short sessions, on the 7.5 minute range. This suggests that most students are visiting the system multiple times of day to check announcements or download an assignment or course reading. The distribution has a long tail, though, with some patterns of use involving much more stickiness, for example when a course has a required online test.

The collaboration in blackboard support between Library and Information Services matured significantly during 2011, in part as the two organizations worked intensively together to resolve a mysterious problem that was causing weekly system crashes. Overall downtime during 2010-2011 was higher than usual: the system experienced 25.1 hours of downtime from July 1 2010 to June 30, 2011. This corresponds to about 99.7% scheduled uptime, which is below our 99.9% target though better than in 2009-10. The problems now seem to be behind us. Uptime in the past 4 months has been excellent.

In addition to collecting data on users and courses, we also collect web server performance data. Committee members are encouraged to look at [https://blackboard.uoregon.edu/local/awstats/awstats.pl](https://blackboard.uoregon.edu/local/awstats/awstats.pl) (available on-campus only) and using google analytics ([http://www.google.com/analytics/](http://www.google.com/analytics/)).

<table>
<thead>
<tr>
<th>OS</th>
<th>Visits</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>530,481</td>
<td>46.7%</td>
</tr>
<tr>
<td>Macintosh</td>
<td>547,198</td>
<td>47.83%</td>
</tr>
<tr>
<td>iOS</td>
<td>48,330</td>
<td>4.22%</td>
</tr>
<tr>
<td>Android</td>
<td>13,188</td>
<td>1.15%</td>
</tr>
</tbody>
</table>

Among other things, our web server data allows us to track browser and OS usage, and provides perhaps the best data available on campus about student browser and OS usage patterns. For example, we observe based on data from the month Oct 18, 2011:

\(^3\) Includes fall quarter and Law fall semester.
2011-Nov 17, 2011 that Mac usage is now slightly higher than PC usage, and that the growth in usage by handheld devices is beginning to be more than just noise.

Looking at browsers compared to a year ago we observe that Firefox and Safari usage are stable, MS IE is down by half, and Chrome usage has climbed from 6% to almost 17%.

<table>
<thead>
<tr>
<th>Browser</th>
<th>Visits</th>
<th>% visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firefox</td>
<td>533,127</td>
<td>46.60%</td>
</tr>
<tr>
<td>Safari</td>
<td>305,438</td>
<td>26.70%</td>
</tr>
<tr>
<td>Chrome</td>
<td>189,761</td>
<td>16.59%</td>
</tr>
<tr>
<td>Internet Explorer</td>
<td>97,074</td>
<td>8.49%</td>
</tr>
<tr>
<td>Android Browser</td>
<td>13,188</td>
<td>1.15%</td>
</tr>
</tbody>
</table>

**Budget notes**

Central blackboard support is funded through an index with a recurring budget allocation of (2011 budget year) $179,826. Expenses on this index include the UO Blackboard Learn license, salary for Tim Boshart, database administration, and a small amount of additional S&S. It does not include other expenses that might arguably be considered part of central blackboard support, including salary for JQ Johnson (about 30% of that FTE is blackboard-related, and paid from the general library index), the cost of providing faculty support through CMET Consulting, and hardware support expenses incurred by Information Services.

We have signed a contract renewal for our Blackboard contract, with period from March 2012 through February 2015, at an average 4% increase per year. Although we pay much less for our contract than the average cost to comparably-sized universities, this is still at some $90,000/year (and growing to $100,000/year) the largest component of overall Blackboard expenses, and the constant cost inflation presents a long-term problem given a fixed recurring budget. As of 2010-11, recurring budget is less than recurring annual expense.

Due in part to differences in organizational structure and reporting and in part to reticence in sharing detailed budget data, it is quite hard to obtain good comparative data looking at costs for CMS at different institutions. Many large universities seem to believe that their overall CMS costs are in the $500,000 to $800,000/year range. Our costs are comparatively low in part because we operate with a small staff, because as a long-term customer we have negotiated on our Blackboard license, and in part because we license only the core Learn product from Blackboard. Nominal list price for Blackboard Learn plus Community and Content Systems is $261,100/year, or almost 3X our current license costs.

**Some events of note in the past quarter**

Although usage has been heavy, this has so far been a fairly uneventful quarter, with minimal unscheduled downtime. We experienced one unscheduled outage on Sept 12, for about ½ hour due to a configuration error during network recabling in the Computing Center. We have a number of times had one or more application servers go offline, but we are making progress towards an environment where the loss of any particular server is not noticed by the users. Individual components of the blackboard
system also experienced various degrees of downtime, notably SafeAssign and the batch process that
generates email copies of course announcements.

The SafeAssign antipiracy system is one area where we have some ongoing concern, since over the
past several terms it has experienced a number of outages and capacity problems. SafeAssign is a cloud
based service that Blackboard provides us as part of our base license, but runs on servers managed by
the company. Blackboard invested heavily last term in server upgrades to deal with capacity problems.
Currently, their problem is that their servers in turn depend on public databases to check term papers for
possible plagiarism – notably web search (using Windows Live) and Proquest ABI/Inform to check a
database of published papers. These public databases are sometimes overwhelmed by the SafeAssign
load, resulting in delays in plagiarism checking as seen by end users.

There have not been many significant software changes in the Blackboard system this term, although
Tim has installed a number of bug fixes and security enhancements, mostly without any or at most a few
minutes of downtime.

Upgrade plans for the rest of the year

Tim and IS are collaborating on a major hardware upgrade, to Oracle RAC, which we have scheduled
for December 20-21, 2011. At the same time we will be upgrading from Blackboard 9.1 SP 5 to
Blackboard 9.1 SP 7. The database upgrade is a major one that will dramatically improve database
performance and move us to a fully redundant system with multiple database servers configured so that
failure in any one does not cause user-visible downtime. The Oracle RAC upgrade has been on our
agenda for a very long time; in my Blackboard report of a year ago we projected it for July 30, 2011.
We’re very pleased that it now looks like it will actually happen.

We were recently notified by IS that we will need to have additional downtime on Dec 10, which is not
on our downtime schedule or within the normal maintenance windows for other systems that affect
Blackboard downtime (though it is within the IS maintenance window for Banner). This downtime is
needed for a firewall reconfiguration and will involve a substantial amount of hardware relocation in the
Computing Center. The downtime is currently scheduled for Saturday morning starting at 5AM; we
plan to announce that it will run until noon, but there is some possibility that the systems will be up
early. Since this is just before quarter grades are due and is in the middle of Law School final exams,
it is important that we announce the downtime widely and minimize the downtime if possible.

We have a tentative downtime schedule for the rest of this academic year.

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sat. Dec 10</td>
<td>Computer Center equipment move</td>
</tr>
<tr>
<td>Tues.-Wed. Dec 20-21</td>
<td>Oracle RAC and Blackboard 9.1 SP 7 upgrade</td>
</tr>
<tr>
<td>Wed.-Thurs. Mar 28-29</td>
<td>OS upgrades to Red Hat 6.1; possible database software</td>
</tr>
<tr>
<td></td>
<td>upgrades</td>
</tr>
<tr>
<td>Sat. June 16 (tentative; might be June 23)</td>
<td>Likely upgrade date to Blackboard 9.1 SP 8</td>
</tr>
<tr>
<td>Sat. Aug 18 (after 8 wk summer; before Law Fall)</td>
<td>Likely upgrade date to Blackboard 9.1 SP 9</td>
</tr>
</tbody>
</table>

Additional Saturday time blocks are reserved for unforeseen needs, but are unlikely to result in
substantial actual downtime.

Blackboard SP 8 is a change with significant user-visible components, and we want to be very careful in
our planning for it. We will not be able to do very much, though, until we get a copy that we can install
and experiment with on our test server. We believe that most of the changes are appearance-only rather
than functional. We may be able to get access in time for our winter advisory committee meeting or
shortly thereafter. As soon as we have more data, the plans for upgrade and faculty support will need to
be a high-priority committee discussion topic. We expect SP 9 to be a primarily a maintenance release, consolidating patches that fix bugs introduced in SP 8 and improving back-end support.

If the Advisory Committee sees any reasons for concern with this schedule we will discuss and adjust. For the current projected downtime schedule through spring 2012, plus criteria we use to schedule downtime, see http://libweb.uoregon.edu/scis/blackboard/schedule.html.

Issues for consideration this year
Looking forward to the current year, how should the committee function to best utilize limited faculty time while improving the quality of educational technology support? I am very hopeful that the new faculty-led committee structure will also eventually result in positive changes in the analysis and types of advice the committee can provide.

The following are a few issues that I am aware of for 2011-12. Perhaps more importantly, though, what are the (other) issues that the Committee members feel are most important for consideration this year?

Support needs?
Having another Blackboard upgrade with user interface changes encourages us to re-examine our structure for providing blackboard support. Currently, support for students is somewhat minimal, mostly focused in providing online FAQs, and in person at the Library Information Commons Computer Help Desk. Some additional help is provided by the IS Help Desk and departmental IT support staffs. Support for faculty is somewhat more robust, being provided mostly by Teaching Effectiveness Program and by CMET Consulting.

What’s working and not working? What types of support could we effectively provide that we aren’t today? And what specific approaches should we take to make sure that faculty are not blindsided by user interface changes in SP 8?

iTunes U
The UO has signed a license to join iTunes U. CMET is currently exploring the most effective ways to use it both for public dissemination of UO materials, and for instructional use through blackboard. We currently anticipate that we will set up a public iTunes U “store” containing links to videos and other materials provided mostly by the Office of Communications and hosted on UO servers. In addition, there will most likely be separate limited-access stores, one for each course in blackboard that uses iTunes U. Our plans are still very preliminary, but we hope to have more information by January, and will want to discuss options at the winter BAC meeting.

BB mobile?
Blackboard has for a couple of years offered a free addon that allows iPhone and iPad users to access a Blackboard system using a user interface that is mostly an app (though it runs mobile Safari to display many document types). A commercial version was developed by Sprint, and is available for free to Sprint customers. Blackboard also licenses this extended version to other customers. They have recently reduced the price of the general license by more than half, to $30,000/year. Is there sufficient interest in this product at that price point that we should actively pursue seeking funding? What information would the committee need to provide more guidance?

WeBWorK integration
WeBWorK is an online homework submission and grading tool developed by the American Mathematical Society and used moderately widely in mathematics instruction. The UO math
department runs a WeBWorK server which it uses heavily in introductory math courses. At the request of the Math Department, we have been working on a project in collaboration with University of Missouri and Blackboard Inc. to establish a connector between Blackboard and WeBWorK. A first version of the connector was developed at Rochester, and a revised version with greater functionality is almost ready for testing. We hope to have it installed this term on our test server, and if all goes well to make it available for limited use winter term. The tool offers user interface integration allowing students to access their WeBWorK assignments via blackboard, and exports grades from WeBWorK to the Blackboard grade center. Perhaps more importantly, it is expected to allow management of student user IDs within blackboard rather than within WeBWorK, replacing a current ad hoc system in which Mathematics downloads enrollment data from Banner to create student WeBWorK accounts.

At some point in the future we may need input from the BAC about resource allocation for projects such as this one. In the short run the project seems to be moving along slowly, with the only groups directly affected being Registrar’s Office and Mathematics.

**Google Docs integration**

The Oregon University System signed a contract for Google Apps for Education. This year several IS staff and departmental IT directors convened a workgroup to look evaluate the feasibility of implementing the product at UO, and in October delivered a final report to Don Harris. The executive summary of that report states:

> Google Apps is a suite of cloud based applications offered by Google to Universities and other educational institutions. These applications range from a word processor (Google Docs), email (Gmail), a calendar (Google Calendar), an instant message client (Google Talk), web site creation (Google Sites), and a video player (Google Video). With no licensing costs required of educational institutions, many Universities throughout the world have been implementing and offering these applications to their faculty, staff, and students. The University of Oregon was presented with the opportunity to investigate the implementation when the Oregon University System signed a 3 year contract with Google.

> After careful consideration, the workgroup recommends that the University of Oregon implement only a portion of the Google Apps suite: Google Docs, including the Blackboard building block (i.e. plug-in) thus making Google Docs seamlessly available within Blackboard courses. Implementation will required new resources dedicated to its implementation, training and support.

Tim and I are extremely interested in offering easy access to Google Docs (and ideally to other portions of the suite, especially Calendar and Sites) for use within blackboard. We are currently investigating several alternative building blocks on the assumption that we will be able to go ahead with implementation. For blackboard, the basic features of the building blocks are (a) tools that make it easy to allow professors to embed Google cloud-hosted objects within a coursesite for students to access and edit, and (b) easy management of account mappings within blackboard, plus access controls so that courses can each have their own sets of Google Docs objects and control sharing as needed by the instructor. Law and CAS have already implemented separate Google Apps domains for limited use within their own schools. We could easily implement independently of the rest of the university, but there is reason to want to implement on a more centralized basis.

Committee members interested in Google Apps might be interested in looking at an article in Campus Technology, “**Pioneering Campus CIOs Say Necessity Drives Shift to Cloud**” by David Raths (10/25/11). Many campuses have implemented GAfE to provide email for all students using gmail.
rather than run their own mail servers; fewer have pursued the option we are exploring of not deploying gmail but instead focusing on collaborative editing and calendaring tools for instructional use.