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Date: February 14, 2012

To: Peggy O'Day, Co-Chair, Senate-Administration Council on Assessment and Planning
Sam Traina, Co-Chair, Senate-Administration Council on Assessment and Planning

From: Laura Martin, Chair, Digital Assessment Working Group (DAWG)

Re: DAWG Recommendation for an Assessment Management System

Established in March 2011, the Digital Assessment Working Group was charged¹ with developing recommendations for an electronic system to facilitate the management, archiving, and reporting of annual assessment results for academic, student affairs, and administrative units. The group was also asked to provide a schedule for the project.

To address these responsibilities, over the last 11 months, the DAWG

- 1) Developed and refined a prioritized list of functions for an enterprise assessment management system (Appendix B). Primary among the requirements is that the application be highly customizable in order to support current approaches to assessment across all three divisions of the campus, including associated vocabularies. Equally important is that the application be intuitive and user-friendly for both faculty and staff.
- 2) Contextualized such a system within the campus' evolving technology infrastructure and work flows (Appendix C).
- 3) Reviewed the vendor space and identified for further investigation six commercial and home grown products that address key required functions and/or are being used by another UC campus (Appendix D).
- 4) Gathered feedback from institutions about their experience with each of these six products and the vendor. Based on these results and publicly available vendor information, the DAWG identified three systems that seemed to best meet the DAWG's functional requirements – Nuventive's TracDat application, TaskStream, and TK20 (Appendix E).

¹ See Appendix A for the DAWG's full charge and membership.

- 5) Organized campus visits by these three vendors to gather additional information regarding a) system capabilities, b) hosting solutions and vendor support, c) the ability to interface with existing IT infrastructure, and d) approximate costs. Vendor demonstrations were guided by a “script” developed to ensure vendor attention to the DAWG’s specific functional requirements (Appendix F). Attendees’ responses to each system were solicited through a structured feedback form (Appendix G).
- 6) “Sandboxed” these same three systems. Working directly within the software, DAWG members explored the systems’ user friendliness and functionality from the perspectives of faculty and staff users and system administrators.

This work, and the sandbox experiences in particular, revealed that even the most flexible and customizable enterprise systems currently available, namely Nuventive’s TracDat application and TK20, do not meet UC Merced’s key functional requirements. For example, TracDat’s existing assessment structures do not yet facilitate the essential program/unit-level practice of identifying conclusions and actions that reflect consideration of multiple lines of evidence. Similarly, TK20 is not yet sufficiently customizable to replicate UC Merced’s existing assessment planning and reporting structures. Also, at this time, neither product directly facilitates display of database contents or reports to the web. The DAWG anticipates that the ability to easily communicate with external stakeholders in this way will become increasingly important given mounting regional and national pressure for transparency and accountability. The DAWG has communicated these concerns to the vendors, and the vendors have indicated that these issues will likely be addressed in product upgrades to be released within the next six to 12 months.

As such, the DAWG recommends the following:

- 1) That the DAWG Chair continue to follow vendor developments over the next six months to a year, including the anticipated product upgrades outlined above, reconvening the committee to review new versions and as appropriate to complete the recommendation process.
- 2) That any new vendor releases be trialed (i.e. “sandboxed”) before any final recommendation is made to pursue an RFP process as necessitated by cost.

The DAWG recognizes that this delay will require UC Merced to continue to use its current methods for reporting, managing, and archiving assessment results, but feels strongly that UC Merced choose a solution that advances UC Merced’s assessment-related goals.

Finally, to support planning and budgeting purposes, Appendix H provides a summary of the approximate costs and associated services for the three sandboxed systems as quoted in November 2011. These figures are based on student enrollment, so the costs should be expected to increase with growth.

Copy: Digital Assessment Working Group

Appendix A: Charge to Digital Assessment Working Group¹

Charge: The [Educational Effectiveness Report](#) states: *SACA has agreed to develop a strategy by June 2011 to archive assessment results to simplify reporting and make them accessible and useful to the campus community.*

In February 2011, the Senate Administration Council on Assessment (SACA) agreed that a Digital Assessment Working Group would be an effective means to achieve that goal.

Working Group Charge:

Develop recommendations for an electronic system that will

- a. Facilitate the management, archiving and reporting of annual assessment results for academic and administrative units. In doing so,
- b. Make assessment results accessible and useful to the campus in support of planning and decision making, including program/periodic review and institutional-level assessment.
- c. As possible, interface with, or at a minimum complement, related data systems including UC Merced's course management system (Sakai/CROPS), student information system (Banner), the Data Warehouse, faculty activity reporting (Digital Measures), and course evaluation system (see below).

The Working Group will also make recommendations for managing the collection, use (reporting) and archiving of data from the new course evaluation form at course, program and institutional levels and in support of faculty tenure and promotion review.

The working group will consult as needed with the Data Warehouse Steering Committee and will report to SACA.

Membership¹:

IPA representative, Nancy Ochsner

IT representative, Faust Gorham

Library representative, Sara Davidson

CRTE representative, Mike Truong

SACA representative, Laura Martin

Student Affairs representative, Emily Langdon

Senate representative, Fatima Paul

SNS representative, Tammy Johnson/Masa Watanabe

SOE representative, Corinne Townsend, Tom Harmon/German Gavilan

SSHA representative, Morghan Velez-Young, Megan Topete

Administration representative, Jim Genes

The working group will provide a schedule for the project by the start of June 2011. The working group will dissolve after developing its recommendations¹.

¹ During its meeting of April 28, 2011, SACA extended the existence of the working group into AY 2011-2012 and permitted the group to add more members as needed. The group is chaired by Laura Martin.

Appendix B: Prioritized list of functional requirements for an assessment management solution.

Overarching priorities: UC Merced is pursuing an enterprise assessment management system to support the ongoing development of a culture of assessment focused on improving student learning and success. As such the application must support the assessment philosophies and activities of the campus's three main divisions – academic, student affairs and administration- while making assessment results accessible and useful to the campus in support of planning and decision making, including program/periodic review and institutional-level assessment. The specific functions needed to meet this priority are described below.	Priority (High, Medium, Low)
1) Intuitive and user friendly for faculty and staff, and frequent and infrequent users.	
Logically organized workflow in keeping with campus assessment methodologies and philosophy	H
Faciliate use by infrequent users with limited knowledge of the structure of the system	H
Limit the number of clicks necessary to accomplish tasks	M
2) Customizable to Support Diverse Assessment Activities and Practices	
A) Institutional Hierarchy	
Database can be structured to reflect UCM institutional organization in relation to shared goals/outcomes, not just administrative relationships	H
Can easily accommodate changes in the hierarchy without the loss of data or the need to reenter data, as will be expected at a new, growing institution	H
Local control of hierachy	H
B) Annual Assessment Planning, Data Collection, and Reporting	
Enable local campus vocabulary, including differences in vocabularly among academic, student affairs, and administrative units	H
Replicate extant and distinct assessment planning and reporting methodologies and workflow for academic, student affairs, and administrative units, including annual and multi-year assessment planning	H
Enable /disable functions on unit by unit basis to support variation in the kinds of tools or applications required (ex. course-embedded vs program level assessment reporting only)	H
Support multiple lines of evidence/measures/metrics per a single outcome/objective	H
Plan assessment by assigning particular outcomes or metrics for review in particular years	H
Assign particular responsibilities to specific individuals, for example, responsibility for gathering a specific data set	H
At any level (course, program or unit), and as part of the natural workflow, report annual assessment conclusions and identify actions that reflect the collective evaluation of multiple lines of evidence, as opposed to being limited to identifying conclusions and actions for each individual measure/line of evidence only	H
Support curriculum mapping with program specific terminology	H
Enable users to see available assessment tools (ex. rubrics) & data campus-wide	H
Enable juried assessment, either paper or digital, with easy upload of digital work in bulk	H
Calculate and report inter-rater reliability for jurried assessments	M
Summarize rubric results as frequenices (not just averages), including results for the individual criteria composing analytic rubrics	H
Enable asynchronous faculty discussion of assessment plans, reports, and proposed actions and ability to document as desired.	H/M
Graphical representation of assessment results within application, rather than in appended documents	M
Enable and document rubric-based and narrative feedback on assessment practices to a unit	H
Support Deans /VC Responses to annual assessment and program/periodic review	H
Archive examples of student work, rubrics, etc. in diverse file formats (video, urls, audio, etc.) and associate directly with relevant measures/metrics	H
C) Program/Periodic Review	
Replicate extant and distinct program/periodic review self-study structures for academic, student affairs and administrative units	H
Support drafting of program review self-study and review by program faculty	H/M
Share self study and associated evidence with reviewers external to the program and to the university, possibly best as a password protected URL	H
Accommodate program review reports written by review committee	H
Support administrative and faculty to responses to program review report	H
3) E-Portfolios	
Associated, intergrated e-portfolio function, with portfolio results directly shared with AMS, not imported as a report	M/L
Asset/artifact (ex. student work) storage?	M/L
Student access to portfolios after graduation or ability to take portfolio with them in usable form	H
4) Customizable Reporting Functions	
A) Reporting Functions	

Overarching priorities:	
UC Merced is pursuing an enterprise assessment management system to support the ongoing development of a culture of assessment focused on improving student learning and success. As such the application must support the assessment philosophies and activities of the campus's three main divisions – academic, student affairs and administration- while making assessment results accessible and useful to the campus in support of planning and decision making, including program/periodic review and institutional-level assessment. The specific functions needed to meet this priority are described below.	Priority (High, Medium, Low)
Provide a "dashboard view" of assessment activities, progress, and other program/units stats etc.	H
Run reports that summarize/aggregate assessment practices, results, etc. across units in relation to shared, overarching goals/outcomes/objectives	H
Run ad-hoc reports/develop custom reports accessing information in any data base field	H
Generate reports aligned to WASC Standards	H
Generate reports aligned to standards of specialized accreditors (ex. ABET)	H
Manipulate layout and organization of reports produced by the application (as opposed to exporting report contents to Excel to manipulate)	M/L
B) Publishing/exporting reports	
Export reports to Excel to permit additional manipulation of data/information	H
Publish to PDFs	H
Share reports for feedback/input from colleagues and document comments within the system	H
Publish reports directly to Web	H
5) Assessment & Program/periodic review management	
Provide a "dashboard view" of assessment activities, progress, and other program/unit stats	H
Calendar function to track submission dates that vary across programs and units	H
Automatic individual email notification function	H
Email tasks to users that allow provide direct links to work to be completed	H
Link individual users to specific responsibilities (ex. report completion, providing specific outcomes data)	H
6) Role-based User Access	
Multitple user roles, and ability to assign an individual more than one role	H
Roles and access modified as part of workflow process	M/L
Users include:	
Faculty Assessment Organizers (FAOs)	
Non-FAO faculty	
Assessment Coordinators	
School, College One and Graduate Division Administrators (eg. Deans and staff)	
Administrative administrators	
Academic Senate staff	
Students?	
External reviewers, ex. for program/periodic review?	
7) Interface with other campus Information Systems	
A) Data from other systems (ex. ODS, Banner)	
Student demographic data including retention, graduation, etc.	H
UCUES/NSSE results, ex. program level	H
Course evaluation data	H
B) Export data to other systems (ex. ODS)	
Annual reports submission rates (program/unit)	M
Program/periodic review completion rates	M
8) Security	
Basic confidentiality standards (e.g. FERPA)	H
Single sign-on	M
9) Basic Survey & Analysis Tools	M
10) Strategic Planning Function	M
11) Hosting & Vendor Support	
Locally Hosted	L
Vendor Hosted	H

<p>Overarching priorities:</p> <p>UC Merced is pursuing an enterprise assessment management system to support the ongoing development of a culture of assessment focused on improving student learning and success. As such the application must support the assessment philosophies and activities of the campus's three main divisions – academic, student affairs and administration- while making assessment results accessible and useful to the campus in support of planning and decision making, including program/periodic review and institutional-level assessment. The specific functions needed to meet this priority are described below.</p>	<p>Priority (High, Medium, Low)</p>
<p>High quality vendor support, responsive to institutional needs</p>	<p>H</p>

* Some vendors do not support direct database access and so cannot query at will, rather have to use reporting forms developed by vendor in response to user needs

Appendix C: Summary of current and planned campus IT architecture and relationship to the planned Assessment Management System (AMS).

As depicted in slide 3 on the following page, the goal is to integrate the AMS into information flow on campus, ultimately with information moving from the Operational Data Store (ODS) into the AMS and, as appropriate, vice versa.

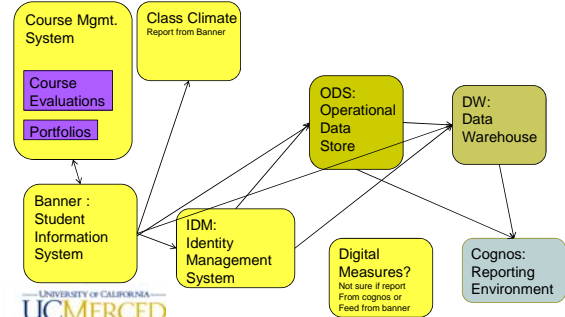
One outstanding question is the relationship of an AMS to Sakai or any future course management system (CMS), particularly as it relates to managing the collection and archiving of student work for later review for program or co-curricular unit assessment purposes. Any solution must also address the collection and conversion of paper-based student work into digital formats (ex. final exams, and equation-based assignments). There are a number of possible solutions that depend upon both software capabilities and the immediate and long term assessment practices of programs. For example, UC Merced's CMS may be the best solution for programs that assess student learning through course-based assignments that students can easily upload to the system (like written projects, papers, etc.), whereas UC Merced's acquisition of a document imaging system may be of use in managing paper-based assessments. An overarching goal is to meet these needs in as few steps as possible for both faculty and students.

Campus Architecture

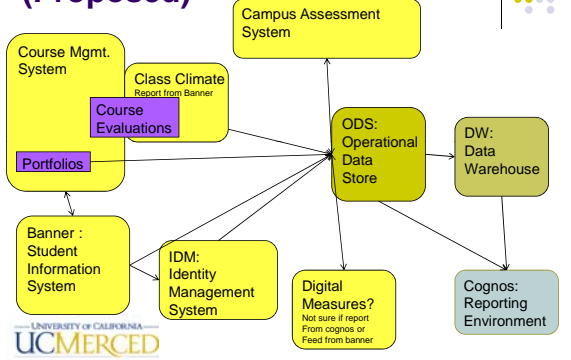
UC Merced
Faust Gorham, IT



Overall architecture (Current)



Overall architecture (Proposed)



Definitions

- **Transactional Systems**
 - Our key administrative systems
 - Banner, PPS, CROPS
 - Real time information
- **ODS – Operational Data Store**
 - Integrates data from multiple source systems
 - Reporting system
 - No History
 - Allows report writers to get data from multiple systems
 - Allows for feeds of data to downstream systems
- **Data Warehouse**
 - Takes data from the ODS
 - Maintains history
 - Allows report writers to develop reports across time

Current functionality

- **Survey Management**
 - CROPS, SNAP
- **Online Assessment**
 - CROPS
- **Asset Storage**
 - CROPS, Docushare, ECMS (future)