Portal and Academic Web Services (PAWS) Planning Report
May 22, 2001

1. Description of planning process
   1.1. Committee membership: Carolyn Bartlett, Steve Adams, Sally Pyne, Beckie Benner, Bill Cummins, Mark Troester, Eric Thomas, Steve Bell, David Williams (chair)
   1.2. The committee has been meeting weekly since December. Work has focused around the matrix presented in the white paper developed in the Fall 2000 to set the stage for further planning efforts. The dual objectives of the planning committee were to address both infrastructure needs for delivering information systems in a portal environment, and the implementation of an interactive and integrated student information system.

   From in-depth discussions of the features, components, and updating of various aspects of our current academic information systems, the committee has developed a very detailed matrix which can serve as the blueprint for the next two years of work bringing campus academic services and information to the Web in a portal environment and setting the stage for the next planning phase. The committee's work has brought to light many issues that were not initially discussed in the white paper and those issues have been integrated into the planning matrix. The matrix also includes infrastructure issues such as the implementation of a campus portal, security and authorization elements, and e-commerce. These issues have far reaching impact beyond just academic information systems. Although the need for student information services is driving certain infrastructure elements in the design, coordination with needs in the student services and finance and planning areas is recommended as planning moves forward beyond this stage.

   1.3. Definitions
   AIS: Administrative Information Systems (formerly Administrative Computing)
   IWSS: Institutional Web Support Services
   CISS: Computer Infrastructure Support Services
   LDAP: Lightweight Directory Access Protocol; the online, electronic directory used for campus sign on to various computer and Internet services, and for email addresses, campus addresses and phone numbers.

2. Meeting the needs of our campus constituents. The first stage of the plan as detailed will provide the following new services via the web to the following campus constituents by the Spring of 2002:
   2.1. Students: new personal portal, display of class enrollment (current and past), address-change and authentication online, student voting, integration with WebCT and Webboard, Web-based housing applications.
   2.2. Faculty: new personal portal, grade processing, integration with WebCT and Webboard, and course scheduling.
   2.3. Prospective students: online admissions for graduates and undergraduates, admissions progress tracking, possibly also personal web portal
   2.4. Alumni: integration of 3rd party alumni portal with new campus portal
   2.5. Staff: support for academic advisors and other academic administrators with scheduling, class enrollment, grade processing, online admissions, and eventually, online degree audits.

3. New initiatives for academic Web services. The plan as detailed includes the following new initiatives:
   3.1. Increased scope to the delivery of campus information systems to include all campus constituents: faculty, academic staff, students, prospective students, and alumni.
   3.2. A personalized web portal service to all campus constituents that can be individually customized.
   3.3. Single-sign-on, single-authentication network environment where a user only logs on once to gain access to most campus computing systems.
   3.4. Implementation of the full scope of student and alumni services to the Web within a two to three-year timeline.
   3.5. Design and implementation of academic information systems using the team efforts of IWSS for front-end Web design and implementation, CISS for host-based services work (i.e., web server, LDAP, WebCT, etc.), and AIS for back-end database work and the middleware integration of mainframe database information with the web front end.
   3.6. Addition of e-commerce capability for credit card transactions for student services activities.

4. Updated Planning Matrix (see matrix attached)

4.1. A great deal of information is expressed in the attached planning matrix. This lays out all of the components that need to be developed in bringing a full-featured set of academic information services to the web in a personalized portal environment. Each "web-based operation" has been identified, its planned evolution described, and each step in its evolution rated on a scale of 1-5 (with a 1 indicating a most critical component needing to be implemented first). A 9 rating indicates that the step has or is about to be completed.

4.2. PAWS Evolution stages. Each component in the matrix is mapped to one of four solutions, starting from the quickest to the most complex or long-term solution. Those stages from easiest to most complex to implement are solutions that require:

- "no authentication" and are publicly posted on the campus web;
- "custom authentication," or pre-portal solutions where someone needs a unique password/ULID to access;
- "single-sign-on authentication" through a campus personal "portal" providing display of personal (student, faculty, staff, etc.) information only; and the
- "single-sign-on authentication" through a campus portal with the added ability of interactation through the web page for entering and updating information, as well as performing "what-if" scenarios for planning.

  Note: model would be to begin with single logon/password, with single-sign-on later. Password would suffice for entry into all display content; additional PIN number would be required for a user to make changes to privileged information such as student information and course registration.

4.3. Ratings. All operations over the four evolutions for solutions are individually rated on a scale of 1 (most critical) to 5 (least critical). A 9 denotes a component completed or near completion. The matrix has been sorted to show those projects near the top that are the "1" rankings.

4.4. Infrastructure issues. The lower portion of the matrix spreadsheet (Items 21-31) note critical infrastructure elements that are needed to provide academic information systems within a single-sign-on, personalized portal environment. Even though the need for these elements is being driven by the student information system demands, the development of this capability should be done in coordination with student affairs and finance and planning initiatives.

5. Assumptions. In the process of developing the matrix, the committee identified several assumptions they felt need to be articulated:

5.1. We will require new funding and staffing to fully implement and maintain all aspects of the proposal and the new initiatives

5.2. The infrastructure issues must be in place (e-commerce, authentication, digital ID, portal, etc.). This was later moderated to recommend that the portal piece be developed in parallel with work on the AIS components and coordinated to provide security and authentication as required as certain parts of the system come online.

5.3. The ultimate, long-term goal should be to provide a single-sign-on authentication for all campus users such that once a member of the campus has logged into the campus personal portal, no additional authentication is required to access any feature provided within the portal environment including PIN number.

5.4. The development of PAWS will require a campus-wide team effort five major units on campus:

- Academic service units that use and support these systems (registrar, admissions, financial aid, alumni service, etc.)
- Institutional Web Support Services that develops the front-end web interface for these systems and provides research, support, and training to academic units designing and maintaining these web pages.
- AIS which provides the backend database work and the middleware that integrates access of the mainframe database information with the web front-ends.
- Computer Infrastructure Support Services which provides web, LDAP authentication, and email server support, as well as perform the development or installation work for future portal services
- Institutional Research which supports the data warehouse information

6. PAWS Development Model

6.1. Web front-end and user engineering support (IWSS)

6.2. Oversight of PAWS development and planning (Associate VP for Information Technology)
6.3. Web, LDAP, and portal host support (IWSS and CISS)
6.4. Back-end database and the middleware integration of mainframe database information with the web front end (Administrative Computing)
6.5. Input and testing from academic services, advisors, department and college administrators, and students

7. Integration of current Administrative Systems work priorities with new PAWS matrix and planning.
   7.1. Current textbook (7A on the matrix), scheduling projects (6B, Phase 1 only), and faculty/staff alumni queries (22c) to be completed as planned. All web-based PAWS work after these projects will be managed under the new proposed PAWS long-term plan.
   7.2. Cut over to new PAWS development model to begin with three key projects. These projects have been selected as good pilot projects for the PAWS team to work to through:
      7.2.1. Online admissions tracking (B2 on the matrix)
      7.2.2. Online grade submissions (B13 on the matrix)
      7.2.3. Campus web portal and single-sign-on infrastructure (25 and 26 on the matrix)
   7.3. All other web-based projects under current AIS Project list are covered by the new PAWS plan and priorities would be changed to synchronize with this plan and its various components.

8. Budget and funding. There are obviously a number of long-term saving issues that may be realized when the system as proposed is fully implemented. Among those are staff time, processing time, paper & printing, phone inquiries, and personal contact time.

   As stated under the assumptions (5.1), new funding and staffing will be needed to implement the proposed system within a two-year timeline. Further work is needed on the budget, but, at first glance, some expenses can be projected. At least one additional staff person is needed in each of three development areas, IWSS, CISS, and Administrative Computing, dedicated to this project. Additionally, new servers will need to be brought online for e-commerce, portal, and authentication components. And, software development tools and licensing arrangements will need to be considered as planning and implementation continues.

9. What needs to happen next?
   9.1. Finish the work of the current committee in developing a two- to three-year suggested timeline for implementation (done)
   9.2. Gather input to the planning from ECAT and PAC and obtain VP approval to move ahead. (ECAT and PAC approval)
   9.3. Secure some level of funding to move ahead for next year and develop a long-term funding model for the project with the VPs
   9.4. Initiate portal and infrastructure development team(s) that involves key people from all VP areas on campus. ECAT has completed a planning document for campus portal design; an e-commerce study group is in process. This would include the evaluation of software tools (Middleware, Eagle, LDAP, databases, etc.). See separate handout on committee structures.

   9.5. Set up a study group to begin to define content and focus for personal portals for students, and faculty/staff. (See committee structure document).

   9.6. Set up a study group to define the requirements of a campus-wide document imaging system including the needs of Milner Library. (See committee structure document)