

### **3. Information Systems Infrastructure and Equipment**

**Goal 3A.** Instructional computer servers and related equipment will be purchased, implemented, and maintained to insure that the university computing infrastructure is capable of supporting the 99 additional distance education courses developed as a part of this project.

#### **Summary**

#### **Goal 3A. OSU Computer Infrastructure and Equipment**

*Local Workgroup Support.* This project continues to provide direct hardware and software support to the course development team members and their manager(s). Workgroup support is a vital function necessary to the successful operation of the workgroup. At the present time the combined workgroups (OSU Extended Campus and IS/CMC) currently operate approximately 40 workstations, including Macintoshes, PC desktops, NT workstations, and several UNIX workstations. Productivity software in use on these machines ranges from the standard Microsoft Office and Outlook Email software, from software used for graphic design, to advanced multimedia authoring suites, as well as digital video editing software to name a few. The workgroup support team has provided the needed maintenance to insure the development and delivery of the proposed 99 distance education courses as a part of this project.

*Faculty Development Support & Training.* While some faculty members take advantage of the talents of the entire course production team, many choose to pursue the development, production and delivery of their course materials on their own. This often leads to one-on-one consultations and tutorials, on an as-needed, when-needed, basis as they encounter difficulties or roadblocks while pursuing their individual efforts. The OSU Extended Campus course development team members have spent a considerable amount of time providing faculty, (and their student helpers) with these types of consultations. The OSU Extended Campus estimates that this time amounts to approximately 25% of course development staff time. OSU Extended Campus staff has also provided training, support and assistance for courses in the Blackboard course management system. Project staff has also participated as presenters in workshops for faculty, and as tutors to other staff when asked, creating tutorials, or instructional documentation, or developing course supplementary materials as needed by instructors.

*Systems Implementation.* The basic systems supported by this project consists of two Sun Enterprise 450 multiprocessor servers, an Enterprise 450 and several Sun SPARC 20's. These servers are currently housed in the machine room of the University Computing Center located in Milne Hall on the OSU campus.

*Systems Maintenance.* Maintenance activities are an ongoing responsibility of the IS project support staff, from user support like resetting passwords, to software upgrades. The amount of activity required for these tasks varies, depending on numerous factors, however the load generally increases to a full

workload (1.0 FTE) during the term breaks. During these times when most classes are not in session activities are oriented toward the system level maintenance procedures that would cause unacceptable downtime during the academic terms.

*Product Support.* The largest support task by project staff is the OSU Portal -- Blackboard, the OSU online course development and management software. All instructors offering distance education courses are required to use Blackboard in support of their distance education course.

*Streaming Media.* The field of streaming media has continued to evolve during this reporting period. Although still considered in a development stage, streaming media shows considerable promise for the instructional arena. The OSU Extended Campus has continued to experiment with streaming video over this reporting period using Real Media software. It has been determined that appropriate applications for streaming video are those where a video will enhance the message being delivered and a great deal of visual acuity is not required. Any place a message needs to be conveyed by audio or video, we are finding that steaming video can play a role. OSU Extended Campus expects steady growth of traffic and interest in the service. Beginning fall 2002, OSU expects to be streaming media for courses on a regular basis.

*Instructional Portal System.* Project staff was instrumental in working together with OSU Central Computing to developing the engineering specifications for the current implementation of the Enterprise-wide Instructional Portal System, Blackboard 5 Level 3. This work anticipated the growth of the use of the web for teaching and learning, and administrative and student services. Project staff also developed and implemented emerging technologies in distance education course delivery including the use of databases, streaming media, and the use of course management software packages (e.g., Blackboard and Respondus). These specifications also took into consideration the anticipated growth in the use of the web systems not only by the distance students, but also by resident students, and by other non-traditional learners (alumni, extension, etc.).

The learning portal environment was designed for "high availability" with appropriate redundancy. OSU has implemented the Blackboard 5 Level Three system. The OSU e-mail system will be separately housed (with IMAP/POP3 interface). OSU used Oracle 8i for the Blackboard database, and housed on its own separate (Sun) server. We have front ended the (2) Blackboard servers with a load balancing network appliance (e.g. ServerIron).

The Portal is now interfacing, event driven, to the Banner system via COBRA messaging (Gemstone) and also connected to Banner for the full Web 4 Student/Faculty/Employee functions. OSU has established a LDAP server for single authentication. OSU is using the current Banner catalog and schedule of class functions. A level 1 and 2 Help Desk supports the system. Level 3 help is managed through the OSU Central Computing service. An online FAQs page for the OSU Portal can be found at: <http://my.oregonstate.edu/?bbatt=Y>