

Standard 5



Libraries and
Information
Resources

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Libraries and Information Resources



The completion of a \$47 million renovation and expansion of OSU's Valley Library in 1999 marked a renewed commitment to library resources and services. The University has committed to increasing library support as a larger portion of total expenditures in keeping with the University's mission and strategic goals.

Information Services provides library, media, networking, and computing services and support to the OSU community on and off campus. In 1994, recognizing the growing interdependence of OSU's library and information services, the University combined the OSU Libraries, Central Computing, the Communication Media Center, and Telecommunications into a single organizational entity called Information Services (IS). Network Services, Technology Support Services, and the Community Network were added as technology and services expanded. Today the unit is headed by the Vice Provost for Information Services, with the University Librarian serving as the Vice Provost's Deputy. An administrative unit and each of the information technology units are headed by directors who report directly to the Vice Provost. The resulting Information Services team is

uniquely positioned to face the challenges of the new and emerging information technology environment.

The Standard 5 self study first explores the purpose and scope of library and information resources at OSU. Next the components of the OSU Libraries (Valley Library, University Records and Archives, and Guin Library in Newport) and the IS technology units are discussed in terms of their missions, responsibilities, activities, obstacles, and accomplishments. IS facilities are then examined, with particular attention to their accessibility to students, faculty, and staff, as well as the larger community. IS personnel and management are next addressed, followed by a description of planning and evaluation efforts. Concluding the report is a summary of IS strengths and challenges.



Purpose and Scope

In 1994 OSU Libraries, Central Computing, Telecommunications, and the Communication Media Center was re-organized into Information Services. Shortly after that date, plans to expand and technologically enhance the campus library were put into place. A critical piece in these plans was to provide an administrative floor where IS



The Valley Library houses an Information Suite with offices for IS Management, Distance and Continuing Education, and Communication Media Services.

managers could share the same workspace. With the completion of a \$47 million renovation and expansion of the Valley Library in 1999, IS management as well as Distance and Continuing Education (DCE) were housed in an Information Suite. OSU Libraries and other units in IS

work closely with DCE to respond to the growing number of students taking classes at OSU and at off-site locations around the state via onsite face-to-face instruction, interactive television, the Internet, and video courses.

In addition to being integral to the OSU Libraries and DCE, OSU's electronic infrastructure has evolved in response to many changing needs of the academic, research, service, and administrative functions of the institution. Today's IS data network allows technology-based services related to the University's mission, goals, and strategic initiatives to be delivered wherever there is a need for information and connectivity. IS technology units are service-oriented and committed to excellence in promoting, delivering, and facilitating information technology services and resources throughout the OSU community and to the people of the state, nation, and world.

The Mission Statement of the University, the strategic plans of the IS units, established policies and procedures, feedback from constituencies, and available resources all help define the current

work of IS and provide direction for future efforts. Together the OSU Libraries and the information technology units play a central role in meeting the three strategic goals of the University's mission:

- **The University seeks to be a "statewide campus."** As the doors opened in 1999, the new Valley Library was recognized by the *Library Journal* as the Library of the Year, the first academic library in the nation to receive the honor, awarded particularly to institutions whose reach extends beyond their immediate community (Exhibit 5.1). The information technology units are also involved in outreach efforts, providing essential support for DCE efforts, as well as facilitating the general flow of information to and from the off-campus sites of the Extension Service and the Agricultural Experiment Stations throughout the state.
- **The University is committed to creating a "compelling learning experience."** OSU Libraries and information technology services are a central part of the instructional experience, linking classrooms, instructors, and students through a network of interactive teaching and learning techniques and services, both on and off campus.
- **The University aspires to be a top-tier university.** Central to this goal is the University's commitment to the Valley Library's eventual membership in the Association of Research Libraries, as well as the continuing and expanding support of information technology services consistent with top-tier status.

The OSU Libraries have several areas of strength in their collections, notably in forestry, agriculture, oceanography, and the renowned collection of the Ava Helen and Linus Pauling Papers. In addition, it serves as a Federal and Oregon Depository Library. In spite of its excellent physical facilities, the Library has experienced

inadequate funding for its operations. A 1999 study conducted by an OSU Faculty Senate Task Force (Exhibit 5.2) concluded that the Library has been underfunded for at least three decades, with expenditures averaging just over 2 percent of total University expenditures. This percentage is considerably below the level of funding at peer institutions. The Faculty Senate subsequently recommended that the University commit to increasing library support, with a goal of attaining a level of at least 4 percent of total expenditures by 2004–2005 (Exhibit 5.3).

This recommendation was made in light of a \$5.6 million deficit incurred by Information Services in the 1995–1997 biennium. The causes of the IS deficit were many, including the reorganization of the Library and other IS units, but it was primarily due to increased service demands on all areas of IS, a mandate from central administration to bring OSU to an equal level with its peer institutions, and inadequate budgetary oversight. Since 1997 and the appointment of a new Vice Provost for IS, the budget oversight issues have been addressed in a payment plan worked out with the Vice President for Finance and Administration. The IS deficit will be eliminated at the end of FY 2003. The Library has been debt-free since 1999.

As a result of the deficit and its continuing impact, both the OSU Libraries and the information technology units are experiencing significant budget pressures. The effect on the libraries shows mainly in the growing inadequacy of the monograph and journal collections, although there is also a clear need to add personnel, primarily because of the new building facilities and new technologies. Although the information technology units continue to provide critical services, many are operated without adequate backup personnel or equipment. Some services have been reduced or discontinued, and in some cases infrastructure replacement and development have been limited or delayed. At the same time, service

demands are growing along with an ever-increasing reliance on technological applications and the continuing flood of new technologies and services. Specific examples of needs and inadequacies are included in the following descriptions of IS units.

Information Resources and Services

Information Services supports the instructional and research interests of OSU faculty and students by providing access to information in all its varied formats, expanding and extending OSU's role as a land-grant, sea-grant, and space-grant university. Strategic plans (Exhibits 5.4 and 5.5) provide guidance for decision making in departmental units, tempered by a consideration of available resources, constituent input, and newly emerging priorities.

IS resources and services are discussed below in separate sections relating to the OSU Libraries and the information technology units, although their interests and activities are complementary and sometimes overlap. Evaluation and assessment information is incorporated into the descriptive context. Supporting information is included in the Information Services notebook exhibits.

Faculty, staff, and students at OSU can learn about IS resources through extensive Websites for IS (osu.orst.edu/dept/IS/) and the OSU Libraries (osulibrary.orst.edu). Services and resources are also described in the *OSU General Catalog*, as well as a number of informational fliers and brochures (see Information Services notebooks).

Finally, although they are not managed by Information Services, it should be mentioned that faculty and students also have access to six



The Valley Library rotunda houses quiet, light-filled study lounges and the Java II coffee shop.

departmental computer labs and eight specialized library collections. These resources are maintained primarily for members of the sponsoring departments, with varying degrees of accessibility to others. These facilities are described in terms of available services and equipment, usage policies, schedules, and locations on the IS Website (osu.orst.edu/dept/is/labs-libraries.htm).

The OSU Libraries

The OSU Libraries consist of the Valley Library and University Records and Archives on the main



campus and the Marilyn Potts Guin Library, a branch service library located at OSU's Hatfield Marine Science Center in Newport. Library units are organized in terms of collection services, technical services, access services, reference and instruction,

special collections, archives and records management, maps, and the Guin Library (Exhibit 5.6). Each unit develops goals within the context of overall Library and University goals. These goals provide direction for current work, new initiatives, and budget allocations (Exhibit 5.7).

Policies are in place to guide the major functions of the OSU Libraries and are available in such documents as the Access Services Policies and Guidelines, the Reference Services Policy Manual, and the Collection Development and Weeding Policies (see the IS Valley Library notebooks). These and other policies and procedures are being reviewed in light of the Valley Library's recent renovation and expansion.

Library resources and services are discussed below in terms of Library holdings, the adequacy of collections for instruction and research, reference services, instructional serv-

ices, outreach activities, branch services (the Guin Library and the University Records and Archives), and the Valley Library's management technology.

Library Holdings

The Valley Library collection includes 1.38 million printed volumes, about 12,200 serials and periodical subscriptions, and hundreds of video recordings. The Government Information and Maps Collection offers an extensive collection of U.S. and Oregon documents and maps (Exhibit 5.8). This collection is being refocused to complement the major collecting areas of the Valley Library. A distinguished research collection, the Ava Helen and Linus Pauling Collection, is housed in the Special Collections unit (Exhibit 5.9).

In addition to the print and multimedia collections, the Library has licensed more than 2,000 electronic resources in every subject area, half of which are full-text electronic journals. Other sources of information include the Encyclopedia Britannica; the Lexis-Nexis Academic Universe, offering full-text newspaper and magazine articles, transcripts, legal material, and other reference sources; the Oregon Newsstand, with full-text articles from the *Oregonian* newspaper; and other reference sources, including college catalogs, dictionaries, encyclopedias, libraries, and phone and zip code directories.

Also available are the following article indexes: the UnCover Journal and Document Delivery Service, enabling users to browse the tables of contents in professional journals and request articles; the FirstSearch Database Service, offering a wide variety of databases including WorldCat, AGRICOLA, and ERIC; the CD network, with information on how to access CD-ROM reference databases; and the SPIN Research Funding database which includes government agencies and private foundations that provide funding for research projects.

The Marilyn Potts Guin Library is located at OSU's Hatfield Marine Science Center in Newport and houses a collection supporting the Center's research, teaching, and outreach activities.

The Valley Libraries' recent membership in ORBIS, an eighteen-member consortium of Oregon and Washington academic libraries, has dramatically improved access to monographic materials. The implementation of user-placed holds allows OSU students and faculty to search member catalogs and place holds for needed items that will then be sent to OSU within forty-eight hours. The ORBIS libraries also support student and faculty instruction and research through document delivery. Interlibrary loans (ILL) continues to grow as a result of increased consortia membership and ongoing serial cuts. The OSU Libraries' recent membership in the Big 12 Plus consortium of more than thirty research libraries is expected to expand access to books and journals and will certainly increase the demands on the ILL service.

The OSU Libraries are in the process of shifting collections from paper to electronic formats, a decision re-affirmed at the 1999 Library administrative retreat. The original decision was based on a number of factors, including (a) requests from faculty, especially those in the physical and natural sciences, for more electronic information, (b) distance education demands for informational formats that can serve off-campus users, and (c) a desire to move from a legacy system of collections to a more responsive, customer-driven approach to meet the expressed needs of students and faculty. University administration supports the shift, students have fully embraced electronic delivery, and faculty members have been very enthusiastic as electronic research tools have been added to their discipline. Development of electronic resources for social sciences and humanities disciplines have lagged behind the sciences. Faculty in the social sciences and humanities are therefore making the move more slowly. As funding and appropriate electronic resources become available, the Library continues to change from paper to digital products.

Moving to an electronic environment has major budgeting implications. Licensing agreements and publisher restrictions prohibiting the cancellation

of the paper format when adding digital formats have been inhibiting staff and space savings. OSU Libraries has responded to this situation by employing a variety of strategies including the licensing of databases, subscribing to Highwire Press and other free services, participating in such activities as Project Muse, and providing article delivery on an as-needed basis.

OSU Libraries' purchasing power has been particularly eroded by the escalating costs of scientific journals that are indexed by or linked to electronic databases. The linkage to databases increases the utility of the databases that provide abstracts and advances search capability.

To seek additional funding, each year the OSU Libraries petition to have a portion of the University's technology resource fees made available for those electronic databases specifically designed to serve the needs of undergraduate and graduate students. While such petitions have been successful (though not to the degree that the Library requested), this source of funding is both unreliable and unpredictable. A better strategy is being sought by the Library. A proposal is underway to request that a guaranteed percentage of the technology resource fees be allocated to the Library on an ongoing basis. Another possible source of funding for collections is the University overhead monies. The amount of overhead given to the OSU Libraries has remained relatively constant for the last ten years, and an increase seems appropriate.

Adequacy of Collections for Instruction and Research

It is essential for the Valley Library to be in a position where it can respond positively to changes in scholarly and publishing environments. This is not the case, however. Library collections have suffered from static budgeting and the increasing cost of printed materials.



The process of shifting collections from paper to electronic formats has been greeted with enthusiastic support from students and faculty who appreciate the addition of valuable research tools.

Library collections to support OSU instruction and research in academic departments are acquired through a tiered arrangement. The



Library collections have suffered from static budgeting and increasing costs of books and scholarly journals. Collection assessment and development plans are underway for each academic discipline.

Collection Development Department includes the Associate University Librarian for Collections and Technical Services, the Head of Collections, and three subject coordinators who work with a cadre of librarians responsible for specific subject areas. Materials come through approval plans, as well as standing orders and individual selections. Coordinators and subject librarians work with departmental liaisons (Exhibit 5.10) to ensure that University faculty have input into the selection process. In addition, stu-

dents are able to request titles either in person or via the Web.

The overall direction for collections is determined through a detailed collection development statement as well as existing policies. Decisions are guided by departmental characteristics such as the types of degree programs offered, enrollment statistics, and research strengths.

A collection assessment was recently completed for all subject areas, and specific collection development plans are now being developed for each area (Exhibit 5.11). The assessment was accomplished by applying the conspectus method developed by the Association of Research Libraries and operationally defined by the Western Library Network (WLN) as a software tool used to describe collections. The WLN approach uses various methods to determine adequacy ratings of book holdings, monographs, serials, and journals, while also taking into consideration interlibrary loans, acquisition rates, and currency. Overall summary ratings can be determined for collections in each subject area. Listed below are some brief comments relating to the book, journal, and summary ratings of holdings in three subject area

collections (see Exhibit 5.11 for more information and details):

- **The Physical Sciences and Engineering Collection** supports research and teaching in the physical science programs of the Colleges of Science, Engineering, and Oceanic and Atmospheric Sciences. All of these colleges have doctoral level programs. Overall, only the oceanography and atmospheric science collections were rated as adequate for doctoral level research. Most of the collection is at the master's level, primarily due to the journal holdings. Industrial Engineering has several subject areas that do not even reach the master's level, making it the weakest of the physical sciences and engineering collections. Unfortunately, the physical sciences have some of the most expensive titles published, and the highest priced journals are in the areas of physics and chemistry. These journals have been subject to crippling inflation rates for the last fifteen years, with 10 percent being the minimum increase for many areas, and 15 percent not uncommon.
- **The Life Sciences Collection** supports biological sciences research and teaching in the Colleges of Science, Agricultural Sciences, Forestry, Health and Human Performance, Pharmacy, and Veterinary Medicine, all of which offer doctoral degrees. The collection can support entomology and various programs in zoology, including ecology and marine biology, at the doctoral level. Problems exist in the areas of biochemistry, genetics, and microbiology because of a lack of depth in the journal collection. Overall, the only agricultural collections that are at doctoral level according to the conspectus measures are forestry, fisheries, and food science. Plant and animal sciences are weakened by the journal collection. In all three areas of the "medical" collection—exercise and sport science, public health, and pharmacy—the journal collection

is not adequate to support doctoral level research. Pharmacy is a particular concern, as the Library has only 54 percent of the core journals recommended by the American Association of Colleges of Pharmacy and OSU has the state's only pharmacy program. The Library does, however, have a good collection of electronic databases that index biological and agricultural journals and other publications.

- **The Liberal Arts Collection** supports the College of Liberal Arts (CLA), the School of Education, and the Departments of Apparel, Interiors, Housing and Merchandising (AIHM) and Human Development and Family Sciences (HDFS) in the College of Home Economics and Education. The anthropology, English, and music collections were rated as adequate to support upper division undergraduate courses. Four collections (art, philosophy, political science, and psychology) do not meet the bachelor's degree program standard because of insufficiencies in the journal holdings. Where PhD programs are concerned, the education collection was found to be adequate to support doctoral research, the AIHM collection was adequate to support a master's degree, and the HDFS collection was adequate only for the support of upper division undergraduate courses.

Considered altogether, the results of the collection assessment underscores the need for upgrading the library's holdings, particularly in the area of scholarly journals. Failing to do so will not only negatively impact OSU's goals to become a top-tier university and provide a compelling learning experience, but is likely to influence accreditation assessments for specific educational programs and academic departments.

Reference Services

The OSU Libraries provide reference services at a centralized reference area, electronically through e-mail and the Valley Library Website, and by appointment with subject librarians. In addition, specialized reference assistance is available in the Valley Library's Government Documents and Maps Department, at the University Records and Archives, and at the Guin Library in Newport.

The central reference desk in the Valley Library is open eighty-seven hours a week during the academic term. The desk is staffed by library faculty and paraprofessional staff. Students and paraprofessional staff provide directional and catalog assistance in the library's Information Commons after 10 P.M. when the reference desk is closed. The University Records and Archives reference room in the Kerr Administration Building is open forty-five hours a week, and the Guin Library reference desk is open forty hours a week.

The number and type of questions asked at the Valley Library reference desk were tracked over a series of three, week-long periods in the winter of 1999, the spring of 1999, and the fall of 2000. The number of questions varied from 1,474 in the winter to 970 in the spring to 1,139 in the following fall. Reference inquiries constituted the largest proportion of questions asked during each of the three time periods, ranging from 57 percent in winter to 62 percent in spring. Directional questions accounted for totals ranging from 22 percent (spring) to 35 percent (winter). Inquiries by phone ranged from 10 percent (winter) to 16 percent (spring) (Exhibit 5.12).



Reference librarians offer support to students, faculty, and the public through a central reference desk, e-mail, the Library Website, and by appointment with subject-area specialists.

The Valley Library's Information Commons changed the nature of reference services as Internet access became available on all computer terminals in the Commons' reference center. Data



Self-instruction materials allow students to complete research study programs at their own pace.

collected during the three sampling periods indicate that the computers were used most often for searching the Web (41 percent, 42 percent, and 38 percent for each respective period), followed by e-mail (23 percent, 22 percent, and 19 percent), searching library databases (21 percent, 18 percent, and 12 percent), and searching the OASIS catalog (14 percent, 12 percent, and 9 percent). The number of people using the computer terminals increased from an average of thirty people per hour in the winter of 1999 to forty people per hour in the winter of 2000 (Exhibit 5.12).

The Valley Library began promoting reference by appointment and referral for in-depth questions in 1998. As a result, the subject librarians reported an increase in this type of reference and research assistance and the number of reference questions asked at the Reference Desk decreased. The subject librarians reported 114 requests in 1998 and 457 questions in 1999. Easy access to librarian e-mail addresses on the Valley Library's Website probably accounts for the fact that about 39 percent of the questions were sent via that medium.

Instructional Services

The OSU Libraries' instructional program consists of course-related instruction, self-instructional resources, discipline-specific credit courses, workshops, and tours. All subject librarians participate in the program, which uses student and faculty evaluations and peer reviews for assessment purposes. An Instruction Workgroup, charged with planning staff development activities relating to teaching methods and strategies, provides administrative oversight and goal setting (Exhibit 5.13).

Course-related instruction is the major component of the Libraries' instruction program. Subject librarians collaborate with faculty to provide discipline-specific instruction in courses throughout the curriculum, and requests have increased substantially over the past several years. In 1996–1997, librarians taught 14 classes with 200 students; in 1997–1998, they taught 28 classes with 549 students, and in 1998–1999, 101 classes with 2,457 students (Exhibit 5.14). A major reason for the increase is OSU's Writing Intensive Curriculum (WIC), which includes a requirement for writing in 300 or 400 level courses in all disciplines. Library faculty meet with the seminar for new WIC instructors each term, give presentations at WIC brown bag sessions, and contribute to the WIC newsletter.

Self-instruction is an approach used to introduce freshmen students to the research process. Reaching this audience has been a challenge for the OSU Libraries since the freshman writing program does not require a research paper or documented writing programs. Library staff created self-instructional materials for faculty to assign to students to complete at their own pace. STAR (Student Tutorial: Access and Resources), a computer-assisted HyperCard program, became available in 1991 and continued for three years until the Internet and full-text resources changed the nature of library research. STAR was replaced by a Web-based Library Research Tutorial with components that can be completed as independent modules (Exhibit 5.15). The tutorial is now being re-designed to provide more interactive opportunities.

OSU librarians teach **discipline-specific credit courses** in agricultural sciences, engineering, chemistry, and English. The chemistry and engineering classes can be taken for undergraduate or graduate credit. English (ENG) 200 is a required course for English majors and enrollment has been steady for the past several years. Engineering (ENGR) 485/585 was converted to the Web in 1999–2000. The agriculture class has changed

format several times since its inception in the 1980s. Until 1996 it was a required course for horticulture majors; from 1996–1998 it became part of a required Computers in Agriculture course; and in 1998 it was taught as a stand-alone, three-week, one-credit module. Currently it is a term-long, one-credit, elective class.

In 1997–1998 and 1998–1999, Information Services offered ALS 112, a class in computer technology survival skills that provided instruction in file management, software applications, library research, Web editing, and presentation software. Enrollment declined markedly in the second year. Students and faculty surveyed in March 2000 indicated they were satisfied with other existing resources for learning these skills (Exhibit 5.16).

An Information Services review of library credit courses in 1998 revealed that many faculty were not aware of their availability (Exhibit 5.17). At the same time, department chairs and head advisors in English and chemistry strongly supported the continuation of the courses, noting that their faculty did not have the expertise to teach them. As a result of these findings, the library classes have been marketed more aggressively.

The Valley Library has provided **workshops** in various topics since the late 1980s and offered its first Internet workshops in the early 1990s. Attendance has been disappointing, ranging from a high of forty attendees for a search engine workshop in 1997 to a low of one student per class in a series of drop-in trainings for the new online catalog in 1999. The average attendance has been five students. Workshops in new resources, such as EndNote, will continue to be offered, but efforts may be better directed toward course-related and self-paced instruction, as well as presentations to faculty groups. The University Records and Archives offers periodic workshops on records management topics to university faculty and staff.

The Valley Library offers drop-in guided **tours** at the beginning of fall term and also provides a printed, self-guided tour. A virtual tour of the

Valley Library is also available at osulibrary.orst.edu/tour/. Tours are also scheduled for new students participating in the First Year Experience Program (FYE) each fall. When the FYE program was first offered in the fall of 1998, 2,016 students participated in 146 tours. Peer leaders were trained to conduct the tours the following year, reducing the number of staff-led tours to 50 (642 students).

Outreach Activities

The OSU Libraries offer outreach activities, both internally through liaisons and collaborations with other OSU units and externally through extended education efforts in the Corvallis community and the state of Oregon. A selection of outreach activities is summarized below (additional examples are included in the OSU Libraries' notebook exhibit).



■ **The liaison program.** The OSU Libraries provide services to OSU faculty, staff, and students on campus and in remote locations through a vigorous liaison program (Exhibit 5.18). All academic colleges, departments, and student organizations are assigned a library liaison (Exhibit 5.10). Of particular note are the liaisons that support undergraduate organizations, Distance and Continuing Education, the Extension Service and the Agricultural Experiment Stations. For example, the Forestry/Extension Librarian developed orientation and training services during an Extension Service annual conference, developed a Web page that identifies services and resources of interest to Extension Service faculty and staff, arranged for borrowing privileges for Extension Service volunteers throughout Oregon, and participated in regional training programs.

■ **Undergraduate program support.** In support of the University's goal to provide a "compelling learning experience," the Library redirected resources to enhance services for

As part of its undergraduate support, the Library provides liaisons to multicultural programs, distance education, University Honors College, athletics, and residence halls.

undergraduates. For example, a Multicultural Librarian provides liaison and instruction for the Student Cultural Centers; the Educational Opportunities Program; and the Difference, Power, and Discrimination Program. The Distance Education/Instruction Librarian is



The successful First Year Experience Program introduces new students to the Library and research processes through Odyssey and Academic Success courses.

the liaison for the University Honors College, Intercollegiate Athletics, residence halls, and various student organizations. The First Year Experience Program (FYE) liaison is particularly successful. The Library offers orientation tours to FYE's CONNECT

and Odyssey classes, provides a library skills self assessment in the FYE AnswerDesk's Survival Skills section, and distributes the Library Research Tutorial in a packet of resources used by faculty teaching the FYE Odyssey classes. Library faculty also teach Odyssey and Academic Success classes and serve on the FYE Advisory Group. University Records and Archives staff members have been guest lecturers in several classes, including History, Art, Anthropology, and Geosciences, and the Archives' holdings support several undergraduate and graduate projects each term.

- **Faculty collaborations.** Engineering and Agricultural Sciences Librarians worked together with faculty from horticulture and agricultural communications to plan and design Hortbase, a proposed national horticulture information system under the auspices of the American Society for Horticultural Science. Life Sciences librarians participated in the development of the National Alfalfa Information System, a project funded by the USDA Agricultural Telecommunications Program Area. In 1999, the OSU Libraries funded CAMEL (Collection and Management of Electronic Links), a pilot project to collect, catalog, and manage electronic information resources created by OSU faculty (Exhibit

5.19). Thirty sites, primarily in agricultural sciences, were cataloged and added to OSU's OASIS catalog and OCLC's WorldCat. Faculty members whose sites were included noted an increase in the number of hits on their sites after inclusion in the CAMEL database and library catalogs.

- **State outreach.** In 1994 the Valley Library contracted with the State Library of Oregon through a federal grant to create NW LINK, one of five Reference Referral Centers providing extended reference services to public, academic, and school libraries (Exhibits 5.20 and 5.21). NW LINK serves nine counties by answering reference questions that cannot be answered with locally available resources, providing access to OCLC's FirstSearch, and offering on-site reference training. In 1996, the OSU Libraries partnered with the State Library of Oregon and the Oregon Independent Telephone Association to offer Jumpstart, which provided small school and public libraries in Oregon with Internet access (Exhibit 5.22). Staff from forty-six libraries received new, fully loaded computers and attended a two-day Internet Bootcamp training session taught by OSU librarians and computing specialists.
- **Community outreach.** The library has participated in Kids Need Libraries since 1994, collaborating with the Corvallis/Benton County Public Library and Corvallis public schools (Exhibit 5.23). OSU's role led to the development of use policies for K-12 teachers and students to ensure that students have access to needed resources. In addition, a two-week summer program, Pathways to Information Power, was implemented to teach information and computer literacy skills to middle-school students. The library also participates in the Saturday Academy, a precollege science, math, and technology education program sponsored by OSU, and hosted the Apprenticeships in Science and Engineering Symposium 2000.

■ **World Wide Web Outreach.** In 1995, OSU received grant funding from the U.S. Department of Education to create and maintain a Website for improving access to government information published on compact discs. The result was the Government Information Sharing Project (GISP), which provides convenient access to information and statistical data from such sources as the Bureau of the Census, the National Agricultural Statistics Service, and the Bureau of Economic Analysis (Exhibit 5.24). Response to the site has been overwhelmingly positive. Users have praised it for being “tremendously easy to use” and “incredibly helpful.” GISP has been rated as a Web Crawler Select Site and a Net Guide Gold Site and is in the top 5 percent of Internet sites recommended by Point Survey. GISP receives well over 100,000 hits per week from more than 20,000 unique sites.

Branch Services—The Guin Library

The Guin Library is a branch service which houses a collection supporting the research, teaching, and outreach activities of OSU’s Hatfield Marine Science Center (HMSC) in Newport. The 30,000 volumes and 310 periodicals cover a broad range of marine-related topics including fisheries, aquaculture, oceanography, geology, environmental studies, and biology. Library users include undergraduate students in residence for an academic term, resident graduate students, OSU faculty and staff, staff affiliated with the regional coastal office of the Oregon Department of Fisheries and Wildlife, and federal personnel working at HMSC (representing the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Department, and the National Oceanic and Atmospheric Administration). Access is provided to the OSU Libraries online catalog, various electronic databases, and the Internet.

The Guin Library has undertaken a variety of special projects during the last five years. In 1995–1996, the library staff (one professional

librarian and 1.5 staff FTE) responded to the flat budget and the regularly increasing costs of scientific journal subscriptions by critically examining usage of the Library’s journals by HMSC personnel. Expensive and underused journals were identified and cut from the collection, leading to an annual savings of \$15,000. The following year, the capability to scan and transmit documents via the Internet was added to facilitate the timely delivery of journal articles to library users. In 1997–1998, the Library’s Web presence was revised with the addition of electronic formats and the development of Web-based resources. A comprehensive Web-based bibliography of research and management publications focusing on Yaquina Bay was created in 1990, using grant funds from the U.S. Environmental Protection Agency and Oregon Sea Grant. Library services were extended to OSU’s Seafood Laboratory in Astoria, and a Web page was developed (in collaboration with Oregon and Alaska Sea Grant programs) to help those outside of OSU locate much needed seafood technology information.

Branch Services— University Archives

University Records and Archives is the newest department in the OSU Libraries. It had been part of OSU’s central administration until September 2000, when it was administratively transferred to the OSU Libraries due to a reorganization within the Division of Finance and Administration. The mission of the University Records and Archives is two-fold: (a) to collect, describe, preserve, make accessible to the public, and display historical records created or received in connection with the transaction of university affairs; and (b) to assist offices with problems and decisions related to filing, storing, reformatting, scheduling, and destroying records generated by University offices and departments (records management).

The University Archives’ holdings include archival records from more than 200 University depart-



The University Records and Archives provides access to historical records and photographs dating from the University’s establishment in the 1860s.

ments and programs dating back to the establishment of the University in the 1860s; the personal papers of more than 150 faculty members in a variety of disciplines; the records of many student, faculty, and staff organizations; extensive photographic holdings documenting OSU, Corvallis, and Oregon; nearly all publications created by the University; approximately 3,500 films and videotapes; and an extensive oral history collection.

The University Archives staff compiles the *OSU Archives and Records Management Handbook*, (Exhibit 5.25) part of the OSU series of policies and procedures manuals, assists with the compilation of the OSU records retention and disposition schedule, and prepares microfilms and computer indices of the University's long-term personnel records.



Approximately 60 percent of University Archives users are affiliated with OSU and include undergraduate and graduate students, faculty, staff, and alumni. The users outside of the University community include

genealogists, scholars from other colleges and universities, government officials, and local residents. The University Archives staff annually assists more than 500 researchers on site; responds to another 500 reference requests by phone, mail, and e-mail; completes approximately 400 requests for employment information; and conducts several departmental records reviews.

Library Technology

The library staff has easy access, via a Novell network, to the applications offered on OSU's Community Network. The library has about 100 staff accounts, and all staff have some degree of proficiency in Windows, e-mail, word processing, and other basic computer applications. Nearly all

staff computers are Pentium 133 MHz or better, with the majority being at least Pentium II 350MHz, and all staff have easy access to networked laser printers and/or local color printers. Many staff are proficient in specialized applications such as Endnote, OCLC, FTP, telnet, and applications related to the Innovative Interfaces Integrated library system (III).

The library has been using the integrated system from Innovative Interfaces since late 1998 after a migration from Geac's Advance system. Modules include acquisitions, serials, cataloging, circulation, OPAC, reserves, electronic reserves (planned), ILL, and Inn-Reach, a product supporting the ORBIS consortium materials sharing functions.

Library technology staff are responsible for seven servers, as well as the computer services provided to library users. A listing of servers, hardware, software, and other technological applications and adaptations is included in the Library's notebook exhibit.

The Information Technology Units

Information Services (IS) has six information technology units whose efforts are aligned with a central administrative group (Exhibit 5.6). The administrative group and three of the six units—Technology Support Services (formerly known as the Community Network), Central Web Services, and the instructional media part of the Communication Media Center (CMC)—are located in the Information Services Suite on the fourth floor of the Valley Library. CMC's classroom support functions are housed in Kidder Hall. Network Services operates out of the Kerr Administration Building and Central Computing is in the Milne Computer Center.

Briefly, CMC provides instructional media and technology support, Central Web Services coordinates and supports campus Web activities, and Technology Support Services provides desktop and

Television engineering is an important aspect of the Communication Media Center, which provides support for Distance Education programs.

network support for many colleges and departments. Network Services includes Network Engineering, which manages OSU's core network, and Telecommunications, which coordinates the University's telephone infrastructure and provides the wiring services. Central Computing supports OSU administrative information systems and provides large scale computing and central e-mail needs. In addition to their specific responsibilities, a number of units provide workshops and seminars for OSU faculty, staff, and students. (Current term schedules are available on the IS Website at osu.orst.edu/dept/isteach/isclass.html). The administrative group provides accounting, personnel, and general office support for the technology units, rather than providing direct services to the University.

Each unit develops goals reflecting its support of the missions of IS and OSU. These goals guide current work and new initiatives within available resources. Policies and/or guidelines are in place to cover most aspects of technological services. These include Web Policies and Procedures, Web Graphic Identity Guidelines for OSU Websites, and Network Engineering Policies, as well as others (see osu.orst.edu/dept/IS/). The IS administrative unit makes recommendations for policies and procedures that ensure compliance with legal requirements and improves processes that impact IS and the rest of the University.

The scope of the services and equipment maintained by the information technology units covers a wide range and can best be defined by describing their activities, accomplishments, and challenges. These are examined in the sections below.

The Communication Media Center

The Communication Media Center's (CMC) primary mission is to provide centralized instructional media and technology support to the OSU campus and satellite campuses. In a secondary role it also supports non-instructional media-

related activities for University colleges and departments. The functional areas of CMC are instructional media systems, distance education, photographic services, television engineering, classroom support, student computing facilities, computer equipment repair, and technology access (Exhibit 5.26 and osu.orst.edu/dept/cmc/index.html).

In 1995, when IS was formed, the immediate effect on CMC was the availability of technology resource fees to move OSU forward on a number of initiatives. Ten technology-enhanced classrooms and two distance education interactive television classrooms were designed and installed in existing classrooms.

In addition, two existing distance education ITV classrooms were redesigned. A Faculty Development Center (now inactive) was established, a new Student Computing Facility and classroom were built in a remodeled basement area of the Milne Computer Center, and an additional computer classroom was built in Education Hall. A distributed-learning developer was added to CMC to support multimedia course production. All of these developments supported a need to bring OSU to an equal level with its peer institutions. In doing so, a significant deficit was incurred that brought about a change in management and structure in CMC and IS.

Today CMC has two Co-Directors. One is responsible for instructional media functions and the other directs classroom support, television engineering, and student computing facilities. CMC is housed in two campus locations, the Valley Library and Kidder Hall.

CMC in the Valley Library is a centralized instructional media support unit that consists of professionals in distance education, multimedia,



Information technology enables distance courses to be offered via interactive television classrooms, Web, video, and individualized directed learning.

photographic services, and faculty development and training. The unit works with faculty in developing, producing, and delivering academic offerings (credit and non-credit) to on- and off-campus students. It also develops courses using the World Wide Web, interactive television, and video courses supporting instruction, research, and extended education. CMC's top priority is to design, produce, and deliver a variety of Distance and Continuing Education courses and programs as well as to serve the entire OSU community. The unit consists of four groups:



CMC offers a broad range of design and media services, from sign-making and graphic design to video, audio, Web, and multimedia production.

- **Distance Education** includes an instructional developer, television technicians, and engineers who produce interactive television courses and teleconferences viewed by the campus community, throughout Oregon, and around the country and the world.
- **Multimedia** is made up of Web course developers, instructional designers, graphic designers, and video and audio producers. The group provides on- and off-campus customers with consultations, Web courses, videotape lectures, multimedia materials, and instructional Websites.
- **Photographic Services** offers two main services, computer graphics and traditional photography. The computer graphics service produces 35 mm slides from digital files.
- **Traditional Photography** includes portraits, studio specimen photography, slide duplication, black and white printing for publications, and outside and event photography.

CMC in Kidder Hall manages the Student Computing Facilities, provides equipment and technical support for classrooms, and offers complete television engineering support for distance education classes and teleconferencing. It also

repairs computers and provides adaptive technology for persons with disabilities. More specific responsibilities in these areas include the following:

- **Student Computing Facilities** managed by CMC consist of a central computer lab located in the Milne Computer Center, one satellite facility, and six computer classrooms with a total of 156 PCs and 65 Apple Macintosh computers. Staffing and/or technical support are provided for the central facilities as well as several small departmental labs. About 820 logins occur on the central facility workstations each day. The six classrooms average about 105 classes and 33,000 student FTE hours per term.
- **Classroom Support** serves the campus with audiovisual equipment, computing equipment, and technical support for 175 general-use classrooms and various seminar and conference rooms, as well as large venues and athletic events. Included are twenty-seven technology-enhanced classrooms. Other areas are supported with a pool of portable equipment.
- **Television Engineering** provides services for operating, designing, installing, maintaining, and repairing services for the four distance education classrooms and studio, as well as the master control, tape duplication, and transmission facilities operated by CMC. Many of the same services are provided to other campus units if requested.
- **Computer Equipment Repair** provides campus support for PCs, Apples, printers and AV equipment by way of consultation, maintenance, and repair. The area is a certified Apple warranty station.
- **Technology Access** serves the technology needs of the disabled community at OSU and is a resource for CMC units and the campus as

a whole, supplying equipment and technical expertise for accessibility as well as statutory regulation advice.

Even with limited resources CMC has been able to continue to support faculty members, both on and off campus. A partial list of accomplishments in several areas appears below (more complete information is included in the Information Services exhibit notebook).

In the areas of Distance Education and Instructional Media Support, CMC has produced (a) 423 Web courses with DCE staff during the last two years, with 22 more courses under development; (b) two national teleconferences for the Department of Energy; (c) a national award winning biography; (d) a five-part regional television program airing on eighteen public television stations; (e) five multimedia CD ROM productions, one winning a national award, and (f) an average of forty interactive television and telecourses per term for the past five years.

Television Engineering staff have: (a) remodeled and upgraded a satellite antenna farm equipment facility to support OSU Extension Service and distributed education; (b) made improvements to two interactive television classrooms; (c) upgraded videoconferencing capabilities to support distributed education; (d) upgraded the video quality of telecourses through the introduction of digital video enhancements; and (e) designed, equipped, and maintained an interactive TV classroom and a large venue presentation facility at the Hatfield Marine Science Center.

Student Computing Facilities activities have included: (a) assisting departmental faculty in obtaining funding, designing, installing equipment, staffing, and maintaining a Language Arts Media Center and an Art and Music Media Center; (b) assisting in the design and building of a new computer lab in the Math Learning Center; (c) assisting the Educational Opportunities Program to upgrade its computer lab; (d) upgrading computers in student computing facilities;

and (e) working with the Valley Library to design and equip a computer classroom for seminars.

Enhanced Classrooms and Support accomplishments include: (a) working cooperatively with the Valley Library and the Graduate Student Association to establish and operate the Graduate Student Multimedia Production Center; (b) equipping classrooms at the OSU Central Oregon Center in Bend; (c) assisting the Oregon Center for Advanced Technology Education in Beaverton with facility development; (d) designing, building, and supporting twenty-seven technology-enhanced classrooms to support campus instruction; and (e) applying for and receiving State Legislative Emergency Board support for eighteen enhanced classrooms.

Overall, however, CMC does not receive adequate funding to support the entire University and its satellite or branch facilities. Many areas of CMC have had to rely on student technology fees, one-time allocations,

and customer charge-backs to provide basic core services to the campus. The Faculty Development Training Laboratory has been discontinued due to a lack of resources, and other basic faculty training services have been neglected. Even though great strides have been made in solving technological access issues for persons with disabilities, no permanent funding has been received.

Equipment repair capabilities and other support services have been reduced in an effort to pay back the IS deficit, and equipment replacement budgets are nonexistent. Permanent funding for many staff positions has not been available for years.

CMC's major goals are to continue seeking ways to use media in enhancing the learning environment at OSU and creating efficiencies while doing so. It is imperative that CMC vigorously explore new uses of technology and media to determine



With Distance and Continuing Education staff, CMC has produced 423 Web courses in the last two years and an average of forty interactive TV programs per term over the last five years.

which solutions would move the University forward toward its mission and goals. CMC also feels that funds are desperately needed to provide resources and training for OSU faculty who are developing multimedia materials for instructional purposes. To meet the demands of today's higher education institution, faculty members must be brought to a level of technology competency enabling them to independently create multimedia programming. CMC also needs to continue exploring other venues and technologies in distributed distance education courses and materials; continue developing, maintaining, and upgrading enhanced classrooms; and devote more time to research and development.

Central Web Services

Central Web Services (formerly known as WebWorks) is the central entity that coordinates OSU Web activities, manages Web projects, provides Web instruction, and supports Web systems. Central Web Services enables OSU to use the full potential of the World Wide Web in achieving its mission and goals (Exhibit 5.27 and osu.orst.edu/webworks/webworks.htm).

The basic mission of this unit is to guide the establishment of the OSU Central Web (osu.orst.edu), the gateway of the University. Since 1995 OSU's Central Web has grown from fewer than 1,000 pages to more than 100,000 pages, with more than 15,000 hits per day on the home page. Central Web Services is maintained through an organizational structure conveying the personality of the University with attractive and efficient designs. It provides the infrastructure needed to support Web development and delivery for OSU units and Web courses, sets up access to the central servers for hundreds of users, and provides initial how-to instruction. Sites are systematically examined by checking error logs and using error-detecting software to identify

linking errors and accessibility issues. Student workers review departmental pages checking for items required by OSU, enhancements that make the pages more searchable, design flaws, and so on. Comments from users are followed up, and site owners are notified and helped with improvements as appropriate.

Central Web Services consults with OSU units and individuals considering Website development, assesses options and requirements, and offers assistance when appropriate. It provides specialized expertise in graphic design, Web communications (conferencing, chat), database system design, and multiple indexing options. The unit has a marketing service that offers expertise and direction to those campus units engaged in Web marketing efforts on behalf of the University (such as University Marketing, OSU Statewide, Admission and Orientation, and colleges). In addition, it provides customer support for general Web inquiries and collects statistics tracking Website use.

Central Web Services also has a training component and instructs students, staff, and faculty in relevant Web-related areas by offering classes, one-on-one assistance (as appropriate), unit training sessions, and online instruction.

Network Engineering

Network Engineering manages OSU's core network, the central e-mail server, and several area networks, and also provides connection to the Internet and Internet2. Dial-in remote access for students, faculty, and staff is also supported by the unit. Services include network routing, switching, monitoring, and security; access to e-mail, news, FTP, and the World Wide Web; and deployment of new data transport and access technologies (Exhibit 5.28 and www.net.orst.edu/info/services.html).

OSU's main campus backbone is a switched Gigabit Ethernet system operating at 1000Mb/sec. It has been designed to be highly reliable and can



The OSU Home Page leads to more than 100,000 pages of University information.

continue to operate during most conditions. The backbone also supports connections at 100Mb and 10Mb as appropriate. Unfortunately, many building uplinks have remained at 10Mb and congestion on those links prohibits new workstations and their modern network applications from realizing their potential. So far funds have not been available to make a wholesale upgrade of all the old 10Mb links to 100Mb. At the same time, some researchers on campus are demanding Gigabit connectivity to the core network in order to exchange large data sets with other researchers also on campus. While the technology exists, budget restrictions are an obstacle. (More descriptive detail relating to the backbone system and other Network Engineering systems described below are included in the IS notebook exhibits.)

OSU's e-mail system has become a reliable and essential tool for faculty, staff, and students. Prior to 1994, daily outages and delays were commonplace with the cc: Mail system. After a series of recommendations and a dedication of resources, the system was finally stabilized and eventually migrated to MS Exchange. Today OSU has a dependable system that is accessible by any standard e-mail client.

Network Engineering also supports OSU's hosting of a prolific statewide network that is an integral extension of the campus network. This wide area network (WAN) currently serves remote field offices such as those of the OSU Extension Service and the Agricultural Experiment Station branch facilities. The network, launched in 1993, currently serves more than 54 sites and 500 customers via FrameRelay and four additional sites via dedicated T1s. The services available to each user include WAN management, Internet connectivity, e-mail services, and desktop, printer, and server support, all centrally provided from within OSU.

Network Engineering also provides video engineering support for new modes of network-based digital video delivery over the Internet. OSU is

the hub for a video network in the Willamette Valley involving five universities and five community colleges. Network Engineering is responsible for managing the core network, providing quality monitoring, and assisting the program that feeds institutions with technical problems. This network consists of terrestrial microwave, satellite, and broadcast quality video over IP. OSU is also the technical leader in what is

believed to be the first regularly scheduled class utilizing Internet2 (Abilene) to deliver broadcast-quality video between three universities, Kansas State University, the University of Nebraska-Lincoln, and OSU. This class brought instructors from each university together to provide graduate education in plant pathology.

Network Engineering has also built a reliable, robust system to provide Domain Name Service (DNS) and Host Configuration (BootP/DHCP) for faculty and staff. The system allows distributed administration of data, timely updates to the database, and central administration of the equipment, which facilitates monitoring and maintenance. For the most part, the system uses statically assigned IP addresses. Microsoft Windows 2000, however, is designed to operate in a more dynamic environment and clients expect to actively participate in the configuration process. To accommodate this new environment, the current system will need to be modified or replaced. Additionally, the user interface of the current system is a bit outdated and should be replaced with a Web-based interface like most other modern network-based applications. Since Windows 2000 will also place additional demands on the servers due to the additional client data, the server hardware and software will need to be upgraded as well.



Interactive TV classrooms enable a professor to teach courses in several cities simultaneously, responding directly to students in each location.

All members of the Network Engineering team are involved in the security designing process for basic Internet applications and other network services, as well as in recommending policies and standards to enhance the security of the network



Technology Support Services provides computer and networking expertise to departments, freeing faculty and staff for other responsibilities.

and the services being provided to customers on the network.

The unit is responsible for gathering, storing, reporting, and backing-up statistics relating to network usage and for following up on reports of violations to OSU's acceptable use policies.

Network security continues to be a challenge, however. Difficulties relate to insufficient equipment, knowledge, and time to perform security related tasks, as well as the challenge of developing security standards that everyone will support and follow.

Telecommunications

Telecommunications provides telephones, telephone services, and network data connections to the local campus community, as well as to off-campus locations such as the OSU Extension Service offices (Exhibit 5.29 and osu.orst.edu/dept/telecom/Telephone.html). Cell phones are available to faculty and staff, and pagers are available to faculty, staff, and students. All telephone work is handled by the Telecommunications staff working with telephone coordinators in each campus department. The OSU switch is the hub of the Oregon University System, linking all seven of the OUS institutions and the Hatfield Marine Science Center in Newport.

Through Telecommunication Services, resident students are offered private phone service with free local calls and other attractive features, as well as free cable television hookup.

Telecommunications also works closely with the Residential Computer Network (RCN), which provides high-speed Ethernet network connections to students living on campus. This service is coordi-

nated through the RCN Help Desk, which is staffed by student employees trained to answer questions, solve problems, and carry out individual appointments to install the necessary computer software and hardware. RCN user numbers have increased dramatically since RCN's conception in 1994. In the 1994–1995 academic year there were about 400 students connected to RCN. In the 1999–2000 academic year, more than 2,900 students (80 percent of the on-campus population) were connected to the network

Technology Support Services

The centralized Technology Support Services (TSS; formerly Community Network) utilizes the University's resources to manage, maintain, and upgrade departmental systems, freeing departmental staff for other responsibilities. TSS offers a full range of network services, from user services to local network engineering (Exhibit 5.30 and www.cn.orst.edu/).

Since it was established in July 1997, TSS has contracted services with more than 1,500 customers, including many historically "have not" departments. Customer service surveys show evidence that customers are "extremely satisfied" with the unit's response times and service in general. A great deal of this satisfaction appears to be attributable to TSS's service-oriented staff and relatively low staff turnover (see the Information Services Notebook).

TSS has also been involved in rebuilding a supported DCA (department computing administrator) structure on campus and organizing relevant campus software licensing (Netware, Microsoft and Symantec). These efforts have significantly and positively influenced customer opinions and satisfaction levels.

The unit has had the same state base funding since its inception, which has led to restricted development and hardware replacement, as well as the turndown of potential customers. The origi-

inal idea for the network was to have a two-thirds state-supported service, with the remaining one-third coming from contracts with individual departments. However, the contract pricing has seen a significant (50 percent) increase during that time, even though TSS has reduced operating costs per user by more than 20 percent. As a result, TSS began looking at cost recovery services that would be of value to current and future customers and developed a new “terminal services” aspect that was introduced in July 2000.

At the same time, the unit is requesting additional funding to compensate for the increased customer base and to encourage other departments to join the network. If an increase in funding does not occur, TSS will be forced to turn down prospective departments that want to join the network and, additionally, continue to limit infrastructure replacement and development.

Central Computing

Central Computing provides support for most centrally supported computing resources, including Administrative Information Systems provided by the Banner™ system; Student Information System (SIS); the Financial Information Systems (FIS) and Human Resources Information System (HRIS) projects; OSU data warehouses; kiosks with online access to grades, transcripts, and class schedules; the telephone registration system; and test scoring and other scanning services. It also includes partial support for some library functions, such as CD ROMS and the OASIS Library Information System. The unit also manages large scale computing for academic endeavors, as well as the central e-mail needs of the campus. Central Computing currently supports 1,500 Banner™ Administrative System customers, 670 data warehouse customers, 21,000 academic system (ucs) customers, and 150 test scoring and reporting

customers (Exhibit 5.31 and osu.orst.edu/dept/computing/).

The central computers at this unit are two Compaq 8400 AXP Open/VMS machines that support administrative computing and a Compaq 4100 AXP DEC/UNIX host for academic use. A fiber-based campus network provides digital communication among various departmental and college computing facilities.

The future direction of Central Computing is largely driven by vendor product releases that will be implemented as appropriate to OSU systems, needs, and interests. In the near future (two to three years), Central Computing plans to introduce Web for Faculty, Web for Employees, and Web for Executives.

Most Central Computing services are centrally funded with a small portion (about 3 percent) from service credits and sales. Technology resource fees have provided an additional 10 percent of the unit



funding, and are directed at the academic e-mail and large-scale computing services. A key portion of the funding for administrative computing has been from the FIS and HRIS projects, but those funds are no longer available. Central administration has paid \$220,000 of the \$300,000 necessary to maintain the same level of support. The remaining \$80,000, plus an additional \$100,000 to pay for equipment maintenance that for three years had been prepaid by HRIS project funds, have been added to the IS deficit.

Central Computing provides a campus-wide network for digital communication among various departments and college computing facilities.

Facilities and Access

OSU students, faculty, and staff have access to cutting-edge educational, instructional, and research services through a variety of information technologies. In both 1999 and 2000, *Yahoo! Internet Life* magazine named OSU as one of the “100 Most Wired Colleges” in the U.S. OSU’s



ranking (thirty-fifth in 2000) is based on a Yahoo survey designed to identify effective uses of the Internet and other electronic aids by students throughout the country. The University is also fortunate to have a state-of-the-art twenty-first-century building housing the Valley Library.

The OSU Libraries

The newly remodeled and expanded Valley Library features 343,035 square feet of space, seating for over 2,000, a large number of individual study carrels as well as varied sizes of group carrels, and lockers and self-service copiers on each floor. The library is an open and inviting environment highlighted by a notable collection of contemporary Northwest artwork in all hallways and selected alcoves. The Java II coffee shop is located on the premises and offers a convenient break area for library users.

The Valley Library is open 109.5 hours each week. It opens at 7:30 A.M. Monday through Friday and 10 A.M. on Saturday and Sunday. Closing occurs at 1 A.M. Sunday through Thursday and at 10 P.M. on Friday and Saturday. Hours are extended until 1 A.M. on Friday and Saturday of the weekend between the last two weeks of the term to accommodate student preparation for final exams. These hours were established in the fall of 1999 after consultation with students and consideration of staff and funding resources. The Special Collections are open Monday through Friday from 8:30 A.M. until 4:30 P.M.; library users need-

ing access at other hours can submit a request at the central reference desk.

The 21,000 square foot Guin Library at the Hatfield Marine Science Center in Newport was built in 1990 with funding from the U.S. Environmental Protection Agency and furnished with private funds. The comfortable physical space has good lighting, excellent study areas, and adequate meeting space for the needs of students and researchers. The facility’s network was recently upgraded to 100-base T 1999 with additional fiber optics providing flexibility for continued electronic linkages. The Guin Library is open forty hours a week, 8 A.M. to 5 P.M. Monday through Friday.

The University Records and Archives occupies approximately 4,000 square feet in the basement of the Kerr Administration Building. The space includes staff offices, work areas, storage for approximately 5,000 cubic feet of records, and a small reference room. The temperature and humidity in this area are relatively stable but the building’s HVAC system is inadequate in filtering dust. The storage space is nearing capacity and the office and workspace for staff is at times insufficient. The reference room is a comfortable, well-lit space that can accommodate four or five researchers at a time. It is open 8 A.M. to 5 P.M. Monday through Friday. The University Records and Archives also maintains an 800-square-foot storage area in Weniger Hall for non-permanent University records and with the Chancellor’s Office Controller’s Division jointly operates a second non-permanent records storage area that is located in the Facilities Services shops complex.

In the Valley Library, more than 120 workstations provide access to OASIS (the online catalog), ORBIS (catalogs of several college and university libraries in the region), research databases, e-mail, and the Internet. (Full access is provided by seventy-five of the workstations; others vary). Most of these workstations are located in the main Information Commons area, but many

Comfortable furnishings and a notable collection of contemporary art contribute to the Valley Library’s welcoming environment.

others are located throughout the facility. In addition, access will soon be available from any of 2,000 ports servicing study desks throughout the building.

The Valley Library's Information Commons includes a Reference Desk and a Technical Assistance Center with a Consultant's Desk where OSU's Writing Center, Math Learning Center, and Career Services provide evening tutoring. The Commons has computer terminals for general computing applications; an adaptive technology workstation; video players and monitors; and laptop computers that can be checked out by students, staff, and faculty. Laptop use varies greatly during the academic term, with the heaviest recorded checkouts in May 1999 (1,400), November 1999 (1,800), and February 2000 (1,400).

The Graduate Student Multimedia Presentation Center (GSMPC) provides equipment and technical support for graduate students producing and presenting multimedia materials. The students are trained to use the state-of-the-art equipment and can borrow laptop computers and projection units. The Center, funded by student technology fees and managed and staffed by graduate students, has experienced steady growth since its official opening in September 1999. More than 104 students have used the production room and equipment has been checked out sixty-five times.

The Valley Library also contains the Autzen Classroom, which is a space for hands-on training for the library's instructional programs. Fully funded by donations, the state-of-the-art teaching facility is equipped with twenty-four networked high-speed computers and an instructor's workstation with immediate access to sound, video, and computer technologies that can be demonstrated by means of a high-resolution data projector.

The Valley Library endeavors to make its collections and facilities accessible to all members of the OSU community. Any citizen of Benton or Linn counties can get an OSU library card for a \$1

fee, which grants check-out privileges and access to other library resources. Services for persons with disabilities include an adaptive technology workstation in the Electronic Reference Center; wheelchair accessible computer workstations, photocopiers, and study tables; assistance with the retrieval of books and other materials; and a TDD phone on the Reference Desk. Library services are available to distance education students and are described on the Valley Library's Web page (osulibrary.orst.edu/offcampus/bridge) and in the *Distance and Continuing Education Handbook*. The gate count for the Valley Library totaled 907,447 in FY 1998–1999 (compared to 497,634 in FY 1996–1997).

Increased use of new technologies is apparent in the Valley Library's Access Services area, where online renewals, recalls, and interlibrary loan requests by patrons are available. Courtesy overdue, recall, and billing notices are automatically generated and sent via e-mail when addresses are on record. Items checked out can generally be renewed online or by phone. Patrons can access their records with appropriate authentication. During the past year, faculty loan periods were reduced and fines implemented for some materials. This change has made materials more accessible to others since a substantial number of faculty members tended to return them only if a callback notice was initiated by another patron. At the same time, student loan periods have been extended.

After experimenting with electronic reserves in cooperation with the Library's technology department during the winter of 2000, it was mutually decided to forego the traditional method of electronic reserves and explore the placement of reserves on the course Web pages, particularly the faculty-generated class notes, readings, and sample tests. Traditional course reserves will



In addition to desktop terminals for general computing, the Valley Library offers laptop computers for checkout by students, staff, and faculty.

remain in the library to accommodate copyright limitations, physical materials such as video and audiotapes, and those faculty members who are not ready to move entirely to Web course pages.

Documented policies and guidelines cover most aspects of library access services, and are available on the Web (osulibrary.orst.edu/services.htm). All policies are reviewed annually and changes and additions made as necessary. In addition, staff manuals and a Rolodex are on the Access Services intranet for quick and easy availability when responding to patron requests for information.

The Valley Library's extensive Website (osulibrary.orst.edu) includes the library's address and phone number, as well as directions for locating the building on campus and access to OASIS, the online catalog. Additional content concerns the library hours, circulation and reference information, specific collec-

tions and services, how to find library materials, how to contact members of the library staff by phone or through e-mail, and other pertinent information. A virtual tour of the library is available on the Website; real-time tours are offered through the library's instructional program.

"The OSU Libraries are a source of pride to the OSU community, as well as to our many constituencies throughout the Pacific Northwest.... The Library's Information Commons provides a specialized reference environment where students can plan research strategies and learn to use research databases, the online catalog, and the Internet."

—Karyle Butcher, University Librarian and Deputy Vice Provost for Information Services

Additional Resources

In addition to those resources in campus libraries and computing facilities, OSU students also have access to a number of other electronic services and applications. For example, students can submit their applications to OSU electronically, register for classes online, and access computer kiosks across campus to check their transcripts, grades, and class schedules. Every student is provided with a central

computer account by IS Central Computing enabling access to the Internet and e-mail.

All rooms in residence halls and cooperative houses are wired for Internet access and networked printers are available in a central location. Resident students have access to free cable television hookups and private phone services with free local calls, special rates for long distance, voice mail, call waiting, and three-way calling. IS Telecommunications makes these arrangements, and also manages the Residential Computer Network (RCN) that provides students with direct access to the campus computer network.

Faculty have access to instruction and/or consulting in Website and networking development, Web course design, and the use of various software applications. OSU databases and large-scale computing facilities are available for research purposes. Enhanced classrooms, television studio facilities and support, and teleconferencing opportunities expand instructional possibilities.

Students, staff, and faculty with disabilities have access to a variety of adaptive equipment such as speaking computers, Braille translators, and listening assistance and alternative input devices.

Personnel and Management

Information Services employs 186 staff members, including 29 academic faculty, 36 professional faculty, and 121 classified staff. Further support is provided by student workers (162 FTE). (Based on figures available on January 23, 2001.)

Academic, professional, and technical staff are well qualified for their positions and have well-defined responsibilities. Many have opportunities for staff development but are unable to do as much as they would like, due to limited funding. Most units would like additional staff, although other needs generally have a higher priority. Recruiting and retaining staff is particularly difficult in the technology areas since OSU salaries are not competitive with the private sector.

Where resources are concerned, nearly all IS units report inadequate funding for carrying out their institutional mission. The IS deficit is being reduced annually, but is not expected to be erased until 2003. In the meantime, the self-studies of the information technology units report instances of outdated equipment, limited infrastructure replacement and development, discontinued services, little time for research and development, and an increasing deficit. At the same time, increasing demands are being made for new technology related to research and instructional purposes.

The OSU Libraries have been historically underfunded, and support is considerably below peer institutions (Exhibit 5.32). For nearly forty years, the library budget has been at about 2.5 percent of the University's General and Education Budget, even though this figure is about half of that recommended by library professionals and is low by academic research library standards. As a result of this continued inadequate level of University funding, the OSU Libraries have consistently lagged behind peer institutions in book acquisitions, journal subscriptions, staffing, and services. In the past decade the Library has been forced to eliminate a considerable number of journal subscriptions and reduce the purchases of monographs.

Although administrative support for the OSU Libraries wavers, student and faculty support remains strong. ASOSU students committed \$1 million to the Valley Library expansion project, and ASOSU graduate students were instrumental in increasing the Library's collection budget through a petition submitted to central administration. In addition, a resolution urging an increase in the percentage of the general funds going to the Library, up to 4 percent of the University's total budget within the next three biennia (FY 2005), was passed in the OSU Faculty Senate. Faculty and students have raised concerns that the Library cannot adequately support the curriculum or educational mission of the University, and this claim is supported by a recent

assessment of the Valley Library's collections across the curriculum. Although the Library notes there has been some recent, gradual improvement, funding is still inadequate.

Where curricular support is concerned, the available resources of the OSU Libraries and other information sources are reviewed to ensure that all new programs are adequately supported. The review is part of the proposal process coordinated by the Office of Academic Affairs. (More information on this process is included in the Curriculum Development Policies and Procedures section of Standard 2.) At the same time it should be noted that a recent, systematic review of Library collections for existing undergraduate and graduate programs has shown substantial inadequacies, particularly in the journal holdings. (See Adequacy of Collections for Instruction and Research, in the Library Resources and Services section earlier in this Standard.)

Planning and Evaluation

Planning for Information Services is based on the University's mission, goals, and strategic priorities, the strategic planning documents in the various units, and input from faculty and students. Planning and policy are also influenced by two Faculty Senate groups, the Computing Resources Committee and the Library Committee. Each committee is composed of faculty and students. Ex officio members include the Vice Provost for Information Services (the Computing Resources Committee) and the University Librarian (the Library Committee).

The purpose of the committees is to give a voice to faculty and students in the management and



ASOSU students committed \$1 million to the Valley Library expansion project, and graduate students were instrumental in obtaining central administration support for increasing the Library's collections.



An extensive assessment of the Valley Library collections provides valuable information on the adequacy or inadequacy of materials in specific subject areas.

direction of the University's information services. The committees serve in an advisory capacity, but also advocate for IS units within the larger University. They identify areas of concern and are highly involved in making recommendations for policies and improvements, as can be seen by reviewing the committee agendas, minutes, and annual reports (see the Information Services notebooks and osu.orst.edu/dept/senate/comm.htm). Annual meetings with the ASOSU (Associated Students of OSU)

Undergraduate and Graduate Senates also provide useful information relating to services students would like to see implemented or concerns they would like to have addressed.

IS assessment and evaluation takes a variety of forms, as can be seen in the following examples. (Findings from many of these examples have been cited in earlier text.) Data are collected to track various aspects of library usage, including the gate count, circulation, reference services, and computer access (see the IS–OSU Libraries Notebook, Book 1, Tab 3). Usage data are also collected to determine the extent of activity in the computer classrooms by facility, class, enrollment, and number of student hours, as well as how OSU Websites are being used and by whom.

Inventories are used to track equipment—for instance the CMC Inventories of Portable Equip-

ment for Classroom Use and the Inventory of Equipment in the Public Access Computing Labs.

Quality control techniques are used to systematically check OSU Websites (osulibrary.orst.edu/statistics). Surveys have been used to explore student attitudes and behaviors regarding printing at University computer labs and to identify faculty instructional technology needs. Customer surveys have been employed by the Community Network, and CMC's Equipment Operations and Photographic Services (see Information Services – OSU Libraries Notebook, Book 2, Tab 5).

An extensive assessment of the library collections provides valuable information on collection adequacies and inadequacies in various subject areas (Exhibit 5.11). Informal data include written messages in the library suggestion box, as well as unsolicited comments from library patrons in the form of e-mail or face-to-face encounters

A detailed assessment is completed by each faculty member involved in interactive distance education courses at the end of each term. Comments are used to continually improve course delivery to benefit faculty and students. IS instructional courses use student feedback forms to evaluate course quality and indicate student learning.

Although all of these efforts provide useful input, considered from a “big picture” perspective, the evaluation of IS resources and services is sporadic, with no clear plan for coordinated, systematic, comprehensive evaluation and assessment.

“The coming years are critical as libraries and society come to terms with the ever-multiplying media. It is a time to remember the vital role the Library plays in the strength and vitality of the University, as well as in the quality of life for all citizens of this state.”

—Karyle Butcher, University Librarian and Deputy Vice Provost for Information Services

Strengths and Challenges

The combining of the OSU Libraries and information services and technology units under the umbrella of Information Services has had positive gains in terms of synergy, as well as providing a larger profile on campus. IS considers its greatest asset to be its staff. IS has gone through several years of decreased budgets due to a \$5.6 million deficit and at the same time experiencing increased demands for services. The people in IS have learned how to prioritize their efforts and make the most efficient use of available resources.

Other strengths and assets include the physical facilities and technological features of the Valley Library. The fourth floor IS Suite not only allows for the development of teamwork, but provides highly visible evidence of the linkage of complementary information services and resources at OSU. The Library's outreach services were specifically cited in its recognition as the *Library Journal's* Library of the Year in 1999. The University's technological infrastructure provides valuable and reliable services to the extent that it has been recognized as one of the "100 Most Wired Colleges" in the nation. IS collaborative efforts with Distance and Continuing Education have led to an impressive number of new Web-based courses. Many other examples of successful accomplishments are included in the unit self-study reports, showing energy, creativity, and commitment to the University mission despite reduced financial circumstances.

The biggest challenge for IS continues to be inadequate funding for its various units. Numerous examples of unmet needs, ongoing concerns, reduced resources, and discontinued services are

cited throughout the self-study reports. The information technology units are concerned that they will not be able to fully contribute to the University's goals of top-tier status, compelling learning experience, and the state as OSU's campus, if a substantial infusion of funds does not materialize. The University Librarian and library staff see the OSU Libraries as falling further from the University's goal of achieving the minimum requirements for membership in the Association of Research Libraries.

Another challenge relates to the varied and decentralized nature of information technology at OSU. Many OSU colleges have their own information technology shops with more resources than IS itself, creating a situation where college needs exceed IS abilities to supply needed services. The University must look at the role of IS in a critical way and determine which services should receive central funding so that the University can continue to move forward toward its goal of being a top-tier research institution providing a compelling learning experience, and helping to make Oregon OSU's campus. With decreased budgets and increased demands, it is more important than ever that all areas of campus communicate to avoid duplication of efforts and collaborate in making decisions that will best benefit the University as a whole. IS needs to take an active part in facilitating this discussion.



All rooms in residence halls and cooperative houses are wired for Internet access, and networked printers are available in central locations. The Residential Computer Network provides students with direct access to the campus computer network.

Resources

Appendix

- 5.1 *OSU Library Resources*. Oregon State University, Fact Book 2000.

Exhibits

- 5.1 *“The Valley Library Earns National Library of the Year Honors”* — Mark Floyd. Oregon State University, OSU News and Communication Services, May 24, 1999.
- 5.2 *OSU Ad Hoc Information Services Committee: Report*. Oregon State University, Faculty Senate, April 23, 1999.
- 5.3 *OSU Faculty Senate Minutes: March 4, 1999*. Oregon State University, Faculty Senate.
- 5.4 *OSU Strategic Plan for IS Instructional Improvement: June 1996 – May 1997*. Oregon State University, Division of Information Services.
- 5.5 *OSU Library Long Range Plan: June 2000*. Oregon State University, Valley Library.
- 5.6 *OSU Information Services Organizational Chart*. Oregon State University, Division of Information Services.
- 5.7 *OSU Valley Library Goals: 1999–2000*. Oregon State University, Valley Library.
- 5.8 *OSU Government Documents and Maps*. Oregon State University Libraries.
- 5.9 *OSU Ava Helen and Linus Pauling Papers*. Oregon State University, Valley Library, Special Collections.
- 5.10 *OSU Library Subject Specialists – Departmental Liaisons*. Oregon State University Libraries.
- 5.11 *OSU Valley Library Conspectus Reports*. Oregon State University Libraries, June 2000.
- 5.12 *OSU Valley Library Use Statistics*. Oregon State University Libraries.
- 5.13 *OSU Valley Library Instruction Services*. Oregon State University Libraries.
- 5.14 *OSU Valley Library Summary of Instruction Activity: 1995–2000 and Instruction and Workshop Report*. Oregon State University Libraries.
- 5.15 *OSU Valley Libraries Research Tutorial and Student Tutorial: Access and Resources (STAR)*. Oregon State University Libraries.
- 5.16 *OSU Valley Library Survey Information Technology Use*. Oregon State University Libraries.
- 5.17 *OSU Information Services Service Item Review*. Oregon State University Libraries.
- 5.18 *OSU Valley Library Liaison Program*. Oregon State University Libraries.
- 5.19 *OSU Camel Project*. Oregon State University Libraries, August 1999.
- 5.20 *Toward Excellence in Information Service: An Evaluation of Oregon Reference LINK with Recommendations for the Future*. Himmel and Wilson, Library Consultants, August 1995.
- 5.21 *An Evaluation of the Oregon Reference LINK Program*. Himmel and Wilson, Library Consultants, December 1998.
- 5.22 *“Connecting Rural Oregon Libraries to the Internet or ‘Will It Fit in My Car?’* —Cheryl Middleton and Judy Cross. Public Libraries (January/February 1998), pp. 58-61.
- 5.23 *Kids Need Libraries*. Corvallis-Benton County Public Library, Corvallis School District 509J, April 1996.
- 5.24 *Government Information Sharing Project*. Oregon State University, Information Services, OSU Libraries.
- 5.25 *OSU Archives and Records Management Handbook*. Oregon State University, University Archives, 2000.
- 5.26 *OSU Communication Media Center Web Pages*. Oregon State University, Communication Media Center.
- 5.27 *OSU Webworks*. Oregon State University, Central Web Services.
- 5.28 *OSU Network Engineering*. Oregon State University, Network Engineering.
- 5.29 *OSU Telecommunication Services*. Oregon State University, Telecommunication Services.
- 5.30 *OSU Community Network*. Oregon State University, Community Network.
- 5.31 *OSU Central Computing*. Oregon State University, Central Computing.
- 5.32 *“A Crisis Decades in the Making: Inadequate Library Funding at OSU”* —Steve Hackel, Department of History, Oregon State University.