

1 **Western Cooperative for Educational Telecommunications**
2 **Consultants' Report**
3 **to**
4 **Idaho State University**
5 **on**
6 **Academic Instructional Technology**

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Executive Summary

1 Idaho State University has made substantial progress in improving its information technology
2 services environment over the past decade. Particularly since the House report, the University has
3 improved the support for faculty and student use of information technology in support of learning. With
4 its significant network of interactive video services, the University is well-positioned to take advantage
5 of technology in supporting its learning environment and extending its services outside the immediate
6 Pocatello area.

7 However, the University would benefit from some additional changes in organizational structure
8 and support models. Like many other universities, Idaho State has a mixed model for academic
9 computing support. In ISU's situation, it has centralized resource allocation and support for most of the
10 services for academics but with a few colleges and departments operating independent services. Those
11 with independent services are the most satisfied with their academic support. We recommend that ISU
12 recognize and endorse that successful support model and extend it university-wide:

- 13 • Refocus the Computing Center as a service center tasked with providing basic
14 infrastructure services;
- 15 • Distribute academic support staff to colleges to provide direct support to academic clients
- 16 • Underwrite the expansion of the ITRC, which has been very successful in serving its faculty
17 clients – the University will benefit from increasing the number of faculty able to implement
18 technology-supplemented learning.

19 The University is fortunate to have good staff, dedicated to supporting the use of information technology
20 to advance University goals. We are not advocating wholesale personnel changes but rather a change
21 in the organization and management of information technology staff.

22 We also believe that the central funding model now in place will not scale well as use of
23 technology (computing and communications) continues to increase. The current cross-subsidization
24 model leaves some aspects of current services at risk if usage increases. For example, an optional lab
25 fee currently supports computing equipment, printing, remote Internet services, modem access – the
26 University cannot scale one service without impacting the funding of others. We recommend that the
27 University analyze sources and uses of funds that support academic uses of information technology and
28 then associate fees with the services they support. Separate the services and corresponding fees so
29 that fees can evolve and scale to meet changes in need and demand level.

30 We recommend that ISU align planning for information technology services with the strategic
31 goals of the University. For example, there are no high-speed connections in the dorms, though
32 applicants for admission are judging the University relative to others based in part upon that capability.
33 If increased residence-hall occupancy is a goal, Student Life and Computing & Communications should
34 work together to develop a business plan for networking the residence halls and then implement it.

1 Similar opportunities to use information technology to advance institutional plans may exist in other
2 areas.

3 The current technology advisory committees feel as if they have insufficient impact upon planning
4 and operations and, in fact, are somewhat uncertain of their roles. We believe that restructuring to a
5 distributed computing organization will help empower advisory committees, but we also recommend
6 simplifying the advisory structure so that there just two committees with appropriate subcommittees or
7 task forces as needed. A single strategic committee would advise the President on issues such as long-
8 term funding, institutional policy, and strategic planning for information services. A tactical committee
9 would advise the Director of Computing and Communications and the deans about standards, priority
10 for annual expenditures, etc. The two committees should have overlapping membership to facilitate
11 communication. We understand that many in the community believe that this *is* the current structure,
12 but there is considerable confusion within the community at large. We recommend clarifying and
13 sharpening the roles of the committees along these lines.

14 We believe that the University should engage in a broad-based visioning process that will result in
15 a shared vision of the role of information technology service in supporting the academic mission of the
16 University. The result of that effort should be a vision that integrates with the strategic plan of the
17 University and provides guidance to Computing & Communication and the individual colleges on the
18 allocation of resources on an annual basis.

19 We observed tremendous enthusiasm for the use of information technology to support instruction
20 and learning. We encourage Idaho State University to capture that enthusiasm, extend the successes of
21 the past decade, and use information technology to help the University excel in fulfilling its academic
22 mission.

Introduction

1 This report is an evaluation of and recommendations regarding academic instructional technology
2 support at Idaho State University. It is a result of initial contacts between Dr. Alan Egger, Assistant
3 Vice President for Academic Affairs, and Russ Poulin, Associate Director of the Western Cooperative
4 for Educational Telecommunications. Dr. Egger indicated that Idaho State University was seeking
5 assistance in evaluating its academic instructional technology services. This was being done in response
6 to recommendations made in prior accreditation visits and as a follow up to an earlier report prepared
7 by an internal ISU committee headed by Dr. Edwin House, Chief Research Officer. Dr. Egger also
8 indicated such an evaluation was needed to help ISU prepare for future its accreditation visit.

9 As a result of a series of conference calls, ISU and WCET agreed on a consultant team
10 composed of H. David Todd, Vice Provost for Outreach and Executive Director of Information
11 Systems at Montana State University in Bozeman, MT, and Raymond J. Lewis, Director of
12 Connections Associates of Portland, OR. After extensive communication via telephone and email
13 regarding the scope of the consultation, ISU and WCET representatives formulated a plan that focused
14 on academic instructional technologies. The work plan included a review of ISU print and electronic
15 materials, a site visit to campus to interview constituents, and the preparation of a report based on the
16 consultant team's findings.

17 The ISU representatives charged the consultant team to answer the following questions:

- 18 1. ISU has a mixture of centralized and distributed support for information technology but no
19 clear policy to support the evolution of services. What sorts of services should ISU be
20 developing, and should they be centralized or distributed?
- 21 2. What rewards or compensation should be offered for delivery of Web-based courses, and
22 who should decide which courses qualify?
- 23 3. ISU has no policy regarding purchases of institutional site licenses for software. Is it
24 important to have one? What are reasonable models? Who decides what the institution
25 supports?
- 26 4. What academic student information services should ISU provide? Universal accounts?
27 Universal email accounts? ISP access? Lab access? How should these be funded?
- 28 5. The help desk is now staffed with students, and unresolved issues are referred to staff
29 members. Hardware and software issues are handled by different individuals, so two visits
30 may be required. How might this model be improved?
- 31 6. ISU does not require students to demonstrate fluency in technology. Should there be a
32 general education requirement, or is this the sort of skill the University might assume
33 students will have or acquire on their own?
- 34 7. Can ISU use its website more effectively to project an image attractive to prospective
35 students and faculty? Related to this is whether our website organization makes sense to
36 users and is easy to navigate.

1 In preparation for visit, consultants were provided with following materials to review:

- 2 1. Idaho State University Undergraduate Catalog 2000-2000
- 3 2. Recommendation by and responses to the 1999 NASC visit (section on academic
- 4 computing only)
- 5 3. Academic Users Subcommittee Report, dated January 27, 1993
- 6 4. User Survey Results, dated November 19, 1992
- 7 5. CSAC Faculty Computer User Survey, dated April 16, 1995
- 8 6. Computing and Communications Organizational Chart, dated September 16, 1999
- 9 7. FY2000 Computing Services Budget

10 The consulting team visited the Pocatello campus April 25-26, 2000 [refer to Appendix A for the
11 detailed meeting schedule]. Detailed descriptions of the observations, analyses, and recommendations
12 follow in the subsequent sections of this report.

Background

1 Idaho State University, located in Pocatello, Idaho, is one of three major public universities
2 serving the State of Idaho. Approximately 37% of its ?? Annual Educational and General (E&G)
3 budget is provided by state funds. ISU enrolls approximately 12,000 students and anticipates growing
4 to a maximum of 16,000 students in the foreseeable future. Student enrollment continues to increase
5 routinely toward that goal. The student body is demographically “non-traditional” with an average
6 student age of 27.

7 ISU serves the central and southeast regions of the state and provides statewide distributed-
8 learning service in several disciplines. Approximately 70% of ISU’s students are from the three
9 counties in the immediate area around Pocatello. The University also operates a campus in Idaho Falls
10 that has had rapid increases in enrollment: in 1997, that campus enrolled 1300 students; in 1999 it
11 enrolled 3000 students. ISU also offers 150 telecommunications-based courses that are delivered
12 primarily via interactive-video network, though there has been substantial recent development of
13 Internet-based courses as well.

14 The academic and communications components of the Computing & Communications
15 organization had a FY00 budget of approximately \$3.1M and a staff of approximately 25 as of
16 September, 1999.¹ [Administrative information services were not evaluated in the course of this
17 consultation: we did not receive information about administrative systems, nor did we interview any
18 administrative information staff members.] Computing & Communications operates both central
19 servers and local labs for student use. Some departments or colleges operate labs independent of
20 Computing & Communications, and their resources are not included in the summary above. The
21 Information Technology Resource Center (ITRC), though funded separately, is administered through
22 Computing & Communications. The ITRC is responsible for providing direct support to faculty for
23 development of electronically-delivered curricular materials, and those resources are also not included
24 in the summary totals.

25 The NASC report on the ISU accreditation study noted dissatisfaction among some of
26 Computing & Communications’ clients. The major issue appears to be the centralized model in which
27 C&C works vs. the distributed models of resource management that clients desire. The distributed
28 model for allocation of resources supports more directly the achievement of faculty goals. Several
29 departments have been explicit that they would like better access to information technology and more
30 direct control of the support services. Though it functions in a centralized service model, the success of

¹ The staff count includes Computing & Communications staff responsible for academic computing, networking, systems support, operations, and management but does not include those staff explicitly designated as responsible for administrative information systems development, maintenance, or operations. Student staff are not included in the staff counts.

1 the ITRC in supporting faculty in a customer-centric manner has provided additional impetus for faculty
2 to seek changes to restructure C&C.

3 These issues led the senior administration of the University to take this opportunity to evaluate its
4 information technology service offerings and its resource allocation decisions. This consultation is a
5 result of that desire to re-evaluate these aspect of ISU’s academic information technology services.

Observations

1 **Organizational and Service Model**

2 The Computing & Communications (C&C) organization includes Administrative Systems,
3 Systems and Operations (including networking and telephones), and Academic Computing. The
4 Information Technology Resource Center (ITRC) is funded separately but reports to the same
5 Director. Prior to the accreditation visit, C&C reported to the Vice President for Financial Services.
6 After an interim period during which C&C reported to the President, C&C was moved to a dual
7 reporting relationship with the Vice Presidents for Academic Affairs and for Financial Services. The
8 C&C organization is managed by the Director and a team of managers for individual service areas such
9 as academic services, administrative services, telecommunications, etc.

10 As services to the campus, C&C provides:

- 11 • Central academic support, including the management of public student labs;
- 12 • Central administrative information systems (developed internally);
- 13 • Telephone service, including service to residence halls that also provides dial-in modem
14 support for student PCs;
- 15 • Campus network and external Internet service (currently a mixture of network technologies
16 for local service; ISU has been awarded an Internet2 grant to supplement external
17 connectivity and is preparing for implementation);
- 18 • Help desk/desktop services; the student-staffed help desk handles 95% of incidents with
19 the remainder handled by academic or technical staff.

20 A number of departments have been frustrated by their inability to obtain the kinds of service they
21 desire and have funded facilities and/or support staff to provide local service. Most notable are
22 Business, Education, Engineering, and Pharmacy. Those colleges view information technology as so
23 critical to their success that they allocated their own internal or grant resources to provide and support
24 it. So, while Idaho State operates Computing & Communications as a centralized computing support
25 organization for resource allocation and support, distributed computing is a reality for many
26 departments on campus. As the 1999 NASC report stated:

27 “... a distributed computing model is already a fact at Idaho State University ...”.

28 The most satisfied customers of computing services appear to be those departments that have at least
29 some amount of local support and locally-managed resources.

30 Among the issues with services noted by various constituents during our visit:

- 31 • Students do not now get email accounts unless they pay an optional technology fee;

- There is no enterprise calendaring system (though the College of Business has one);
- While there is Unix expertise among C&C staff, C&C does not support client departments (where Unix is used for internal Web service and local workstations);
- Help-desk service is too slow and/or staff too inexperienced with individual faculty needs; student staff recognize that they are not well trained or well managed either in technical expertise or in customer service; student staff are not compensated for longevity, so there is no incentive to continue working there; turnover rate can be as high as 90% per semester; colleges have hired their own staff, where possible, to provide more tailored and responsive service;
- Student access to public labs has been an issue of considerable faculty discussion – current central funding and policy structure interferes with instructional uses of technology;
- Local Area Network (LAN) services are mixture of legacy Novell and three newer NT servers and offer network drive space for PCs in C&C-operated labs.
- Some colleges and departments operate their own servers, but those are not managed to integrate with the central campus servers (no access to network drives outside the departmental lab);
- Residence halls are not wired for Ethernet; they use dial-in 56K service (non-blocking);
- C&C manages site licenses for WordPerfect, statistical packages, and Maple – funded through the central budget – but the process by which central funding might be allocated for additional, more specialized packages is unclear to those who would like to pursue it.²

Funding

Funding for the FY00 C&C budget came from a variety of sources that can be summarized as follows:

Computing & Communications Funding Sources, FY00		
Source Category	Amount	%
Appropriated funds	\$ 2,191,492.60	71.5%
Fee for service (pass-through)	\$ 135,000.00	4.4%
Technology fees	\$ 737,455.00	24.1%
Total	\$ 3,063,947.60	

² CSAC has proposed that there be a pool of funding for site licenses to be proposed by academic departments – funding would decline to zero after three years, for individual departments to then assume costs.

1 We note that funding for C&C is primarily through the centrally-allocated University budget (71.5%).
2 C&C does not operate on a fee-for-service model: most services to departments are “free”.

3 There are several student fees that contribute 24% of the C&C funding. A mandatory student
4 fee, applied to all students, of \$35/semester generates funds that are used for a variety of purposes:
5 25% to Physical Plant, 25% to central computing, 37.5% to academic computing labs, and 12.5% to
6 the Vice President for Academic Affairs for reallocation. An *optional* Microcomputer Lab fee of
7 \$17/student/semester entitles students to access to public labs, email accounts, printing service from
8 those labs, and dial-up access from off-campus.

9 The most significant service for which a fee *is* charged is telephone service. The basic rate for a
10 standard telephone (POTS) is \$21/month. Telephone service revenue funds basic telephone operations
11 (switch maintenance, moves/adds/changes, etc) and also subsidizes data network service. The
12 University has issued a Request for Proposals to upgrade the campus network infrastructure to a
13 consistent Cat-5 cable plant. The funding for that upgrade will be underwritten by telephone revenues.

14 The Computer Services Advisory Committee (CSAC) funds faculty desktop equipment requests
15 from a separate pool provided through the President. Competition for those funds is not intense.
16 CSAC is able to fund about half the requests they receive and feels that they are able to maintain faculty
17 desktops reasonably well. Those not funded are generally requests to upgrade equipment that is still
18 relatively usable.

19 We found that although C&C has taken advantage of leasing programs to annualize the funding of
20 computing equipment, departments on campus are unaware of that opportunity. In our subsequent
21 discussions with several individual departments, we found general interest among them in the possible
22 use of lease programs to avoid initial capital costs and spread equipment costs over several years.

23 **Advisory Structure**

24 We understand that there are three advisory groups associated with academic-related information
25 technology on campus:

- 26 • The Technology Oversight Council (TOC) reports formally to the President but effectively
27 reports to the Vice President for Academic Affairs. Its charter is to advise the President
28 (Vice President) on ways to advance the use of information technology in support of the
29 academic mission of the university.
- 30 • The Computer Services Advisory Committee reports to the President. Its charter is to
31 allocate resources (e.g., faculty desktop equipment) and to advise on resource-allocation
32 issues (e.g., site licensing policies).
- 33 • The Web Course Incentives Committee has been recently formed to develop programs to
34 encourage and support faculty development of Web-based instructional materials.

1 The Faculty Senate Chair is a member of the TOC, but there appears not to be a sense of “ownership”
2 of technology issues by faculty through its Senate. There is some confusion on campus as to working
3 role and scope for these committees, and there appears to be some duplication in their roles as
4 perceived on campus.

5 **Strengths**

6 A distributed computing environment has evolved at Idaho State. ISU has a substantial number
7 of key faculty and staff all over the university who are very knowledgeable about academic instructional
8 technologies and who are well connected to national networks of colleagues and organizations. But
9 deans and faculty also recognize that some centralized services, such as the ITRC, are the best way to
10 use limited available resources.

11 Because ISU operates an exceptionally large, active and effective interactive video/audio
12 network, it is well positioned to respond to the growing demands for distance learning services in the
13 region and the state. The ITRC, now in its second year of operation, will be an important factor in the
14 future success of ISU’s distance-delivery programs. The staff, services and customer service
15 commitment of the Instructional Technology Resource Center (ITRC) are very highly valued by faculty
16 and staff throughout the institution.

17 ISU has strategic advantages within the state as a result of the quality of some of its academic
18 programs. ISU’s statewide missions in health and education, and the commitment of these programs to
19 integrate computing and telecommunications into instruction, give the university a distinct strategic
20 advantage in its dealing with state policymakers. ISU is gaining valuable experience with online course
21 design and delivery through its participation in the Idaho Virtual Campus and from the efforts of
22 numerous other faculty who are teaching courses partially or totally online. Similarly, ISU’s
23 Geographical Information System (GIS) resources are critical tools that are enhancing the data base,
24 research and instructional activities of the institution as well as enhancing ISU’s capacity to write grants
25 and make policy recommendations to government and business.

26 In general, customers of the Help Desk and Computer Labs highly value the technical expertise of
27 the respective staff members. Their dissatisfaction is with the organization and management of that
28 service rather than with individual staff. It has been frustrating for clients to seek assistance from
29 anonymous staff – frequently poorly-trained students – rather than to have a consistent point of contact
30 for problems and on-going support. That frustration is increased by their knowledge that there are, in
31 fact, helpful staff available but that the organizational structure discourages those direct relationships.
32 Again, this is in sharp contrast with the satisfaction expressed in departments that have employed
33 support staff for direct support of a limited number of clients.

34 With regard to networking infrastructure, the fiber-optical cable between buildings on the ISU
35 campus is robust and capable of meeting the institution’s instructional and administrative needs in the
36 foreseeable future. The plans to install a intra-building Cat-5 cable system will bring the campus up to

1 current standards relative to other universities and should provide the bandwidth needed for service to
2 faculty, staff, and students for the foreseeable future, too. ISU will be connected to Internet 2, which
3 will greatly enhance its research and instructional resources and facilitate partnerships with other entities
4 that will be critical to the institution's future. ISU's remote dial-up access to its network via a pool of
5 144 modems is a valuable service to its constituents throughout the region.

6 **Challenges**

7 One of the major challenges ISU faces is to integrate planning for academic instructional
8 technologies into the institution's processes for strategic and tactical planning. While faculty and
9 students consider those issues to be integral to their work, the University appears generally to have
10 responded to technology issues as they arose rather than anticipate them. We observed considerable
11 confusion about the future role of information technology, distributed learning, etc. and corresponding
12 resource allocation. Few institutions have really addressed these issues coherently yet, and so ISU is
13 not alone. It is important that the University develop a process for arriving at a shared vision for the
14 role that academic instructional technology tools should play in on-campus and distributed learning, then
15 fund and implement the resulting model.

16 Key to the success of this effort will be the development of an organizational and funding model
17 that supports the distributed computing model that has already started – and been so successful – in
18 some areas. The process should involve major stakeholders such as deans and key department heads
19 in the design and implementation of a distributed computing environment. The resulting environment
20 would involve stakeholders (policymakers, mid-level managers and day-to-day users) directly in
21 academic instructional technology management.

22 The University has the opportunity to use information technology to the University's strategic
23 advantage. For example, it should be possible to provide user-friendly, web-based systems that track
24 student progress over time and that can be integrated into the curriculum planning and design process.
25 We did not evaluate administrative information systems issues, but it will be important to integrate
26 planning for those systems to provide a full range of information services for a technologically-literate
27 client base. Obvious needs include a user friendly, reliable systems for electronically enrolling and
28 registering students in distributed-learning courses and a system to provide advising support for
29 faculty/student interaction.

30 In support of its strategic use of information technology in support of learning, the University will
31 need to develop coherent programs to support and encourage faculty development of technology-
32 based instruction. It will be important to provide faculty with academic instructional support services
33 that effectively integrate technical skills with teaching and learning skills – the ITRC is a good example
34 of the kinds of services needed.

35 In the current model, though, faculty approach ITRC on their own initiative and invest effort from
36 their own motivation. There are few incentives to encourage faculty to invest the effort in developing

1 courses with the new technologies. Development of materials for Web delivery is particularly time-
2 consuming, yet there is no recognition in promotion and tenure; workload is considered to be part of
3 normal faculty load; and there is no clerical support for faculty who do undertake course redevelopment
4 (e.g., there is no work-study help for faculty data entry). Faculty teach distance-delivered graduate
5 courses in the Idaho Virtual Campus as overloads – there is no additional compensation. The notable
6 exception is that there is a “bi-campus” incentive for faculty who teach at the Idaho Falls facility and
7 drive to that site several times a semester.

8 There is also no accommodation for increased workload that the ITRC is generating for itself.
9 ISU will need to plan to scale ITRC operations in response to interest and success.

10 The University has the opportunity now to integrate the activities of the ITRC with the more
11 broadly-chartered Center for Teaching and Learning. That integration would support faculty more
12 broadly in their instructional activities. As a group, faculty are split on the value of using information
13 technology, and it would be best to provide a single focal point for various modes of instructional
14 support in order to get universal faculty support. It will also be important to integrate into the faculty
15 evaluation and compensation processes criteria that recognize the additional time and skills involved in
16 developing and delivering technology-based instruction as well as the value it adds to the
17 teaching/learning process.

18 The field of academic instructional technologies is a rapidly-changing field, and it will be important
19 that both support staff and faculty participate actively in national and regional networks with their
20 professional colleagues (e.g., conferences, workshops, listserves, etc.), and the University should be
21 prepared to aggressively endorse and underwrite that kind of participation.

22 ISU has the opportunity now to develop services that reflect the pervasiveness of the changed
23 information-services environment:

- 24 • Provide convenient and affordable access to university email services for all students;
- 25 • Coordinate and fund software site licenses for both campus-wide use and for significant
26 subsets of the university that includes major stakeholders;
- 27 • Assess the adequacy of 56K connectivity in the residence halls for meeting the bandwidth
28 needs of students as Web-based and streaming video systems become standard tools for
29 instructional support;
- 30 • Provide Internet access to all classrooms;
- 31 • Coordinate technology infrastructure and service planning with the institution’s grant
32 development process;
- 33 • Provide technical support for computer operating systems required for special institutional
34 needs (e.g., support for Unix systems across campus);
- 35 • Systematically identify and support new technological opportunities (e.g., Internet 2, GIS)
36 that are critical to ISU’s future;
- 37 • Develop a help desk system that supports the evolving distributed-computing model by
38 providing help desk services that are well-managed, customer service-oriented and

- 1 responsive to a wide range of expertise and content areas and by providing adequate
2 training for help desk and computer lab employees;
- 3 • Meet faculty expectations for student computing support – faculty want to know that
4 students have access to computing tools and especially email from campus labs.

Recommendations

1 **Develop a Distributed, Service-Center Model for Support**

2 We believe that the University should develop a support and resource-allocation model that
3 corresponds to the distributed model that has started and is quickly evolving. The most satisfied users
4 of technology at ISU are those who are supported now by distributed services; that seems to be the
5 approach that is most certain to satisfy the customers of the service more broadly. In a resource-
6 constrained environment, it is nearly impossible for a centrally-managed organization to satisfy the
7 specialized needs of individual clients with diverse interests that typify the academic environment.
8 Decisions about resource allocation and priorities should be made as close to the clients of the service
9 as possible – at the college or department level in this case. This is not to suggest that campus
10 standards and centralized services are not critical to success, though. The University must strike a
11 balance between direct customer support services, to be provided locally, and deeply technical,
12 infrastructure support services to be provided centrally. Our recommendations are intended to move
13 the academic information technology support environment to that model and are couched in that
14 context.

15 We recommend that ISU move away from the computer center model to a service center model:

- 16 • Continue (or accelerate) the distribution of academic support staff to colleges (details
17 below) where their priorities for daily tasks would be established by deans and department
18 heads or their designees;
- 19 • Retain a single staff person in C&C to coordinate the distributed support organization;
- 20 • Establish standards and direction for customer service by consensus among the service
21 providers;
- 22 • The first line of contact for users would be their college service providers (technology
23 support staff), not a central help desk;
- 24 • The distributed support staff are customers of C&C networking and systems staff for
25 advanced technical assistance;
- 26 • C&C will take a proactive role in identifying new strategic opportunities and working
27 together with the colleges and schools to devise a shared response. C&C should focus on
28 being a convener of colleagues with shared concerns rather than deciding issues alone.

29 Our recommendation that C&C staff be physically distributed to individual colleges is likely to be
30 highly controversial. Members of the ISU community would need to develop implementation details,
31 but these are some specific suggestions for implementation that can serve as a starting point for campus
32 discussion:

- 33 • Continue (or accelerate) the application to Computing & Communications of a variation of
34 the staffing model used to distribute financial officers to academic units at ISU;

- 1 • Assign 2-3 staff from Computing & Communications to each of ISU's colleges/schools to
2 support the instructional computing needs of the respective organizations; locate those staff
3 in the colleges or departments;
- 4 • Colleges/schools should set the workload priorities for these employees on a daily basis;
- 5 • The staff should continue to report to Computing & Communications for purposes of
6 professional development, overall coordination and evaluation;
- 7 • Colleges/schools should have direct input into the staff evaluation process and should be
8 responsible for defining the position duties and "hiring" from the internal candidate pool;
- 9 • In such an arrangement, these staff could tailor their work to the needs of the colleges and
10 be advocates for them within the Computing & Communications organization;
- 11 • The distributed computing staff members should be convened routinely to discuss service
12 issues, future directions, new technologies, standards for systems and services, etc. The
13 C&C liaison would coordinate but not manage those meetings (rotating leadership from
14 among the service providers would work well for that role).

15 To supplement the focused professional support provided directly to departments in this model,
16 the Help Desk should be upgraded as a source of support for general problems. In particular, the
17 orientation and ongoing training of Help Desk staff – students – should especially emphasize customer
18 service skills, word processing, network access, data bases, elementary problems with the UNIX and
19 NT operating systems, and WebCT. Provide management training for Help Desk managers. Reduce
20 the high turnover rate of new student employees by improving orientation and training and by providing
21 increased wages commensurate with experience and customer evaluations.

22 **Plan to Support Pervasive Computing**

23 In order to support the pervasive use of information technology as an integral component of the
24 learning and scholarly environment of students and faculty, we recommend that ISU:

- 25 • Devise a policy that provides universal access to ISU email for all students (we suggest a
26 single fee which provides for email and lab access -- details to be developed in concert with
27 student leadership);
 - 28 < Separate the funding and management of dial-in service from public lab service;
 - 29 < The mandatory fee should pay for public lab access and universal email account –
30 services that are directly in support of visible student uses of technology only;
- 31 • Work collaboratively with all academic units to devise a mechanism for coordination of
32 university-wide and multiple-unit software site licenses;
- 33 • Establish a professional development plan for each Computing and Communications
34 employee which includes requirements and support for training, conferences, self study, etc.
35 This applies to both central and distributed support staff.

1 Institutionalize Support for Academic Development

2 We believe that the use of information technology in support of learning can benefit the institution
3 in several ways. First, it is important that students come to feel that the appropriate use of technology in
4 support of work in their chosen field is natural, and having faculty as models promotes that sense.
5 Second, students learn in different ways, and the information technology tools are critical to helping
6 some students understand the material. Finally, Web-based courses can be delivered independent of
7 space/time constraints and so have the potential of either attracting students who are remote from
8 campus or serving students who have time constraints because of employment. For ISU, with a large
9 non-traditional student body, these are potentially important factors. The potential to attract additional
10 students may also bring additional revenue and so is yet another reason to address this institutionally.

11 There seems to have been a tendency at ISU to focus on Web-based delivery when discussing
12 computing in support of instruction. The use of information technology in support of instruction is not
13 limited to just development of Web-based courses. Faculty may choose to use email lists to facilitate
14 discussion among students. They may choose to use simulations of economic models or simulations of
15 chemical processes or displays of molecular structures to reinforce theoretical points. Graphical artists,
16 business faculty, engineers, and social scientists all use different tools that might be used to facilitate
17 student learning – or which should simply be components in the students’ professional toolkits when
18 they graduate. It is reasonable to expect that incorporating *those* applications of information
19 technology in support of learning is simply part of the job of being a faculty member.

20 However, the development of Web-based courses is a different issue. Done well, that effort
21 requires both an extensive re-thinking of the goals of the course and possible delivery and reinforcement
22 methods *and* the development of a set of skills that are *not* standard in the faculty members’ disciplines.
23 That demands a massive one-time investment on the part of the faculty member, even if there is
24 adequate support staff to handle the technical and clerical details. If the resulting course involves the
25 use of computer-based discussion groups, there is a tremendous on-going course load as the faculty
26 member or graduate assistants monitor and guide those discussions. And it is that interactive learning
27 on the part of the student that has made this mode of instruction so effective.

28 To improve instructional support for faculty, we recommend that ISU build on its successes. Use
29 the already-successful model of the ITRC and the recent efforts to create teaching and learning centers
30 by combining these technical and the pedagogical support services in a manner that will respond to the
31 full range of faculty needs.

32 We see two issues here: provision of incentives to encourage the development of Web-based
33 courses, and compensation for on-going delivery of Web-based courses. The former might be
34 accomplished with summer stipends, course relief during the academic year, bonuses for courses
35 developed, etc., where there is a clear deliverable from the effort. The latter requires some
36 compensation for the ongoing labor involved: reduced numbers of courses to be taught, additional
37 compensation based on number of distance-delivered students, etc. State and university policy vary

1 among states on the ways in which faculty can be compensated, so we cannot be directly prescriptive in
2 our recommendations.

3 We recommend that ISU convene meetings among representatives of the faculty and the offices
4 of the Vice President for Academic Affairs and the Vice President for Financial Services to explore
5 ways to increase the incentives and rewards available to faculty who take on the added challenge of
6 developing and delivering courses that involve the use of instructional technologies. In addition to
7 financial compensation and release time, such discussions should include strategies such as technical and
8 clerical assistance.

9 As specific actions, this group should work with other constituents or advisory committees to:

- 10 • Document case studies of faculty who have integrated instructional technologies into their
11 teaching and share this information with other faculty through the ITRC newsletter and other
12 campus communication media;
- 13 • Plan to allow a much longer lead time than normal to evaluate the cost-effectiveness of
14 technology-based courses in order to encourage innovation and improvement;
- 15 • Encourage the Office of Institutional Research and the Deans' Council to include
16 technology literacy and related criteria in the assessment plans devised by ISU
17 departments;
- 18 • Implement the site-license funding pool proposed by CSAC to fund academic site licenses
19 as proposed by academic departments.

20 We encourage the University to take advantage of its unique, strategic opportunities to use
21 technology in certain high-visibility areas. For example, take the steps necessary to provide institution-
22 wide coordination and support of GIS activities since this area is of general interest and has high
23 visibility within the state. In the distributed support model, several departments (GIS among them) are
24 likely to place a priority on Windows NT support from their service providers. Computing &
25 Communications should plan to provide deep technical support and coordinate standards for the NT
26 operating systems that would be supported by those local service providers.

27 Technology literacy requirements are best determined within the context of individual disciplines,
28 but there is no doubt that students graduating now and expecting to have productive professional lives
29 over the next fifty years will need to be comfortable both using current technologies and learning new
30 ones. We recommend that the University convene a small task force of representatives of faculty,
31 department heads, and deans with the charge of developing a technology literacy requirement that again
32 follows the distributed model. The following is one scenario for development of a technology literacy
33 requirement that ISU might follow. Each college would document its expectations for computer literacy
34 among its graduates (with variation among departments as necessary). Common requirements of basic
35 computer skills, theory, information search techniques, information modeling, and presentation skills
36 would be met with a common course that all students would take. Students could test out of that
37 requirement. Specialized skills (as in graphical design or CAD/CAM) would be met within the context
38 of courses offered by individual colleges or departments. This approach would benefit students by

1 documenting the expectations they would need to meet and benefit departments by letting them focus
2 on the specialized instructional needs of their disciplines.

3 **Restructure Funding for Information Technology**

4 The current budgeting and funding structure includes considerable cross-subsidization between
5 services for which fees are charged and services provided. For example, telephone fees subsidize
6 network services, and student lab fees subsidize modem pools. Those models do not scale well when
7 there is a sudden surge in use of a service subsidized by other sources. For example, if departments
8 decide to provide faculty and staff with cell phones from a local provider because the rates are much
9 lower, C&C's funding for both phones and networking would be at risk.

10 While some co-mingling of fees and services is appropriate – the cable plants for networking and
11 phones are probably installed in parallel, for example – we recommend that ISU attempt to restructure
12 its fees to align more closely with the services provided:

- 13 • Institute a separate networking fee that could, for example, be scaled up as the University
14 assumes the cost of maintaining the Internet 2 link after expiration of the grant. This would
15 likely result in a lower fee for telephone service but might bring in additional funding from
16 direct charges against grants in support of research network connections;
- 17 • Separate the charges for lab usage (PC replacement and maintenance; printing), that can
18 realistically only be provided by on-campus entities, from remote-access fees that might
19 well be provided by commercial vendors (ISP's);
- 20 • Plan to charge a usage fee for student printing service – programs that offer for “free”
21 services for which there are costs of expendables do not scale well to full campus use;
- 22 • Provide the ISU community with an explicit accounting of how the funds raised by the
23 student technology fees are spent so that students would be more comfortable supporting
24 increases in fees if needed.

25 In the distributed computing model, colleges and departments will assume more responsibility for
26 priorities and methods for funding technology. The role of C&C will be to help establish standard ways
27 of doing business and to take advantage of “best practices” that individual departments discover. To
28 support the pervasive use of computing, investments in technology should be understood to be ongoing,
29 not one-time expenditures. In support of that model, C&C should identify a variety of approaches for
30 leasing equipment – whether with internal funds or with state bonds or commercial loans – to help
31 departments develop regular annual budgets for technology investments.

32 **Implement a Visioning Process**

33 The ISU community does not have a coherent shared vision of the role of information technology
34 in the academic environment. While we believe that unanimity is unlikely, we believe that the University

1 would benefit from a broad-based community discussion of this issue and the subsequent development
2 of policies and plans that more consistently reflect the sense of the community. In particular, we
3 recommend that Academic Affairs manage a set of processes to:

- 4 • Initiate an instructional technology visioning process that initially gathers input from many
5 small groups of stakeholders from different organizations and levels of expertise and
6 involvement about the desired role of information technology in their activities;
- 7 • Present the written suggestions from these groups to a small group (7-10) of representative
8 individuals who would be charged with drafting a vision plan for the institution that would
9 subsequently be presented to the appropriate governance bodies (faculty senate,
10 President's Council, etc.);
- 11 • After review and revision, formally adopt that vision as institutional direction with the
12 intention of using it to guide planning, resource allocation, promotion and tenure decisions,
13 etc.

14 Such a two stage process has the advantage of allowing for participation by a broad cross-section of
15 interested faculty, staff and students as well as the efficiency of a small deliberative group capable of
16 focusing on such a challenging task.

17 We would expect that the process would result in focusing information services' attention and
18 resources to give ISU a particular strategic advantage within the state. For example, we might
19 anticipate that coordination and support of GIS as an element of an institutional strategic plan might be
20 an opportunity for C&C and the distributed service providers to work together to develop a common
21 approach to implementing GIS systems and seeking grant funds to support them.

22 We also observed that there is some ambiguity in the roles of the advisory groups associated with
23 information technology. We recommend clarifying this situation by eliminating all current advisory
24 groups and establishing two new groups with appropriate subcommittees that would focus on special
25 issues as needed. The two new organizations would have ongoing responsibility for strategic (5-10
26 year) and tactical (1-2 year) planning, respectively.

- 27 • The strategic organization should focus on the policies necessary to implement the
28 institution's vision for the role of academic instructional technology (e.g., reward/incentive
29 structures, new initiatives). This group would be chaired by a member and would advise
30 the President on long-term planning for resource allocation, institutional policies and
31 direction, etc.;
- 32 • The tactical organization should focus on shorter-term concerns such as deployment
33 schedules, software standards, etc. This group would be chaired by a member and would
34 advise the C&C Director and college deans on priorities and short-term resource
35 allocations.

36 We recommend that several individuals serve on both committees to integrate long-term and short-term
37 planning: that role should not fall to the C&C Director or other administrators alone.

1 **Replace Administrative Information Systems**

2 While we were not engaged to consider administrative computing issues, it is impossible to
3 evaluate the impact of technology upon the academic environment without observing the impact of
4 administrative information systems. Applicants expect to be able to apply for admission and financial
5 aid through a Web interface from their homes in Boise or Moscow or New York City; students expect
6 to be able to register on-line via Web interfaces from their residence-hall rooms; faculty expect to be
7 able to advise students with current copies of their transcripts on their desktop PC screens. Pervasive
8 computing is just that: pervasive.

9 We note that the current information systems were developed in-house. We believe that it is
10 likely that the University will need to replace those systems with commercial systems within the next five
11 years. The administrative systems group will find it difficult to maintain competitive functionality cost-
12 effectively. We believe that student systems, in particular, will be the most significant source of
13 competitive pressures on the University that compel implementation of a new integrated system. Web-
14 based application for admission, Web registration, Web-based advising, Web-based interfaces to
15 financial aid and integration with new federal systems, integration with campus portal systems,
16 integration with distributed-learning management systems, etc are complex systems through which other
17 schools are already offering services. We would be remiss if we did not note that ISU should be
18 anticipating those competitive pressures to use administrative information systems in support of the
19 academic mission.

20 We believe that ISU should anticipate investing \$8M to \$10M in a 3-year implementation of a
21 new administrative information system within the next five years. We urge the senior administration to
22 begin the financial planning now and to engage faculty in the discussion about the need for that
23 investment. It would be easy for members of the community to dismiss this issue because of the
24 problems encountered by peer institutions. That would be a mistake. The process is difficult and the
25 costs are high, but so are the rewards. And potential students will notice the differences among
26 institutions as they apply for admission.

27 In the course of implementing the new system, ISU should pay particular attention to the
28 collection of information about applicants and students. ISU needs a more effective approach to the
29 collection and sharing of student data in order to help faculty better assess both traditional and
30 technology-based instructional strategies. The advice of professional Institutional Research staff would
31 be particularly helpful here to ensure that the data gathered are standardized in ways that assist in
32 subsequent analyses. The limitations of the current administrative computing hardware and software
33 appear to be a major barrier to addressing this need.

Summary of Responses to Questions

1 Service Model

2 *ISU has a mixture of centralized and distributed support for information technology*
3 *but no clear policy to support the evolution of services. What sorts of services should*
4 *ISU be developing, and should they be centralized or distributed?*

- 5 • Distribute direct customer services to colleges or departments as local service providers,
6 who will be the primary points of contact for academic faculty and staff..
- 7 • The client organization directly sets priorities for daily tasks of support staff.
- 8 • Distributed staff are responsible for managing local labs.
- 9 • Coordinate direction, policy, standards, etc., through a C&C academic computing
10 coordinator, who is responsible for coordinating rather than determining direction.
- 11 • The C&C organization will focus on managing infrastructure (networks, central servers,
12 telephones) in support of its customers, the local service providers.

13 Course Development Incentives

14 *What rewards or compensation should be offered for delivery of Web-based courses,*
15 *and who should decide which courses qualify?*

- 16 • Rewards might include release time, additional summer compensation, bonuses, or
17 additional compensation for distance-delivery enrollments, depending upon state and
18 university policy constraints.
- 19 • Depending upon the way information technology is used to support instruction, the
20 investment of faculty time may be one-time or on-going. The compensation methods should
21 take that into consideration.
- 22 • We recommend establishing a high-level task force to consider policy constraints and then
23 implement a consistent mechanism for acknowledging the faculty effort involved in
24 incorporating information technology into instruction and then continuing to deliver courses
25 at a distance.

26 Site License Policy

27 *ISU has no policy regarding purchases of institutional site licenses for software. Is it*
28 *important to have one? What are reasonable models? Who decides what the*
29 *institution supports?*

- 30 • We recommend implementing the CSAC proposal.

1 Student Information Services

2 *What academic student information services should ISU provide? Universal accounts?*
3 *Universal email accounts? ISP access? Lab access? How should these be funded?*

- 4 • ISU should provide public lab access (global and departmental) and universal file service
5 and email access to all students, funded through the mandatory student technology fee.
6 Scale that fee as necessary to fund the services. Work with student leadership to ensure
7 that students understand that the fees they pay result in services they can directly identify.
- 8 • Plan to implement a per-page charge for printing, though in the short term printing costs
9 might be covered through the technology fee.
- 10 • Charge separately for dial-in access, whether in residence halls or off campus.

11 Help Desk

12 *The help desk is now staffed with students, and unresolved issues are referred to staff*
13 *members. Hardware and software issues are handled by different individuals, so two*
14 *visits may be required. How might this model be improved?*

- 15 • The basic two-tiered approach to resolving problems through the Help Desk is a good one.
16 The problems seem to be in the management of that service.
- 17 • Faculty and academic staff will refer to local service providers as their first point of contact
18 in the support model we're recommending, so the load on the Help Desk will be
19 significantly reduced.
- 20 • The Help Desk will evolve to respond primarily to routine questions about standard
21 software (word processing, network access, etc.) from faculty, staff, and students and after
22 regular business hours.
- 23 • Implement a pay plan that increases compensation with experience as a way to retain
24 student staff; train them more aggressively, with emphasis placed upon customer service;
25 work to build a support *team* that includes both student and professional staff rather than
26 manage student staff hierarchically.

27 Technology Literacy

28 *ISU does not require students to demonstrate fluency in technology. Should there be*
29 *a general education requirement, or is this the sort of skill the University might*
30 *assume students will have or acquire on their own?*

- 1 • Focus on the technology literacy needs of individual academic disciplines, then abstract a
2 core of competencies needed for all students.
- 3 • Provide that core instruction through a common course from which students could test out.
- 4 • Individual departments can then focus on the specialized needs within their disciplines.

5 I

6 **ISU Website**

7 *Can ISU use its website more effectively to project an image attractive to*
8 *prospective students and faculty? Related to this is whether our website organization*
9 *makes sense to users and is easy to navigate.*

- 10 • Yes, ISU should invest considerable effort to improve its Web site. Information is difficult
11 to locate and incomplete for those who know what they want to find. The site is not
12 particularly engaging for those who simply want to explore. Increasingly, potential students
13 will evaluate institutions based on their Web presence.
- 14 • This is a tremendously dynamic area right now. Schools are evaluating and have begun to
15 engage “portal” providers to help tailor services directly in support of students. They have
16 integrated distributed-learning opportunities into their Web environment to attract new
17 students.
- 18 • ISU could improve the appearance and utility of its current Web site with some redesign.
19 We recommend that ISU consider outsourcing an initial Web redesign to a professional
20 company.
- 21 • The integration of student information services and distributed-learning opportunities will
22 require substantial extension or redevelopment of administrative information systems. We
23 recommend that the University begin preparations for replacing the current systems with
24 commercial systems that are designed to provide those services.

Conclusions

1 We believe that Idaho State University has a wealth of untapped enthusiasm among its faculty and
2 students for the use of information technology in support of its academic mission. ISU also has already
3 in place excellent models that suggest how the University might successfully exploit that energy and
4 enthusiasm to advance the institution. The ITRC and the departmental computing specialists provide
5 service tailored to particular needs and with a customer-service orientation. We have recommended
6 that the University extend that successful model to the full range of academic support and develop a
7 distributed model for academic computing support.

8 We are aware that this will require significant re-thinking of the roles of staff and administrators,
9 the roles of the advisory committees, and even broader issue of the role of information technology in the
10 academic endeavor. We believe that the community is ready for that challenge – in fact, much of the
11 current frustration results from the lack of that re-thinking.

12 We encourage ISU to seize the opportunity and begin the process.

Appendix A: Schedule of Interviews

1 **Tuesday, 25 April 2000**

2 9:45 am Dr. Jonathan Lawson, Academic Vice President
3 Dr. Alan Egger, Assistant Academic Vice President
4 Mr. William Duggan, Director, Computing and Communications

5 10:30 am Mr. William Duggan, Director, Computing and Communications

6 11:30 am Dr. Jennifer Attebery, Chair of Faculty Senate and Associate Professor of English

7 12:30 pm Lewis: Dr. John Jones, Director, Institutional Research
8 Todd: Ms. Jennifer Fisher, Assistant Academic Vice President and Executive
9 Assistant to the President

10 1:00 pm Deans' Council Meeting
11 Dr. Paul Tate, Graduate School
12 Ms. Kay Flowers, University Librarian
13 Mr. Ernest "Skip" Lohse, Museum
14 Dr. Jennifer Attebery, English
15 Dr. Ranaye Marsh, Applied Technology
16 Dr. Butch Hjelm, Arts & Sciences
17 and others joining later

18 2:00 pm Instructional Technology Resource Center (ITRC) tour with Dr. Terry Lay, Faculty
19 Coordinator

20 2:30 pm Faculty Focus Group, ITRC
21 Dr. Charles Harris, Nursing
22 Dr. Joseph Higgins, Nursing
23 Dr. Terry Lay, Faculty Coordinator
24 Dr. Anne Hackert, College of Business
25 Dr. Carla Dando, Applied Technology
26 Dr. Randy Stamm, ITRC

27 3:30 pm Dr. Scott Hughes, Idaho Virtual Campus

28 4:00 pm Roundtable Discussion with ITRC staff and clients
29 Dr. John Knox, Physics
30 Mr. Daryl Bennett, Systems Manager

1 Mr. Tony Lovegren, Computing & Communications
2 Ms. Julie Mead, Registrar's Office
3 Dr. Scott Hughes, Idaho Virtual Campus

4 6:00 pm Dinner with Dr. Terry Lay, Faculty Coordinator of the ITRC; Mr. Randy Gaines,
5 Manager, Media/Distance Learning Center; Ms. Kay Flowers, University Librarian;
6 Dr. Alan Egger, Assistant Academic Vice President

7 **Wednesday, 26 April 2000**

8 9:00 am Dr. Jennifer Fisher, Assistant Academic Vice President and Executive Assistant to the
9 President

10 10:00 am Lewis: Dr. Charles Peterson, Biology Faculty, Ms. Debra Thompson, Associate
11 Dean, Applied Technology
12 Todd: Engineering Faculty with Dr. Jay Kunze, Dean; Dr. Vitit Kantabutra;
13 Dr. Mike Ellis; Dr. Lee Robinson; Dr. John Blotter; Dr. John McWhirter; Dr.
14 John Bennion

15 11:00 am Lewis: College of Education, Dr. Al Strickland
16 Todd: College of Business, Dr. Corey Schou

17 12:00 noon College of Pharmacy: Dr. Barbara Wells, Dean; Dr. Paul Cady, Interim Associate
18 Dean; Mr. Craig Kelly, Technical Support Manager

19 1:00 pm Lewis: Dr. Edwin House, Chief Research Officer; Mr. Keith Weber, GIS Director;
20 Ms. Beth Stamm, Assistant Director of Research and Associate Professor,
21 Institute of Rural Health
22 Todd: Computer Services Advisory Committee: Mr. Craig Kelly, Pharmacy; Dr.
23 Peter Vik; Mr. Les Wilson, Computing and Communications; Ms. Janet
24 Higgins; Dr. Gene Stuffle

25 2:00 pm Student focus group

26 3:00 pm Mr. William Duggan

27 3:30 pm Dr. Jonathan Lawson and Dr. Alan Egger

28 4:00 pm Health Sciences Faculty: Dr. Pamela Clark; Dr. Erin Francfort; Dr. Tony Seikel; Dr.
29 Charles Francis

30 5:15 pm Departure