AN EXAMPLE OF
THE INFORMATION TECHNOLOGY ENVIRONMENT
AT AN INFORMATION-RESOURCES-INTENSIVE INSTITUTION

In addition to the general requirements outlined in the HEIRAlliance Evaluation Guidelines for Institutional Information Resources, the following represent some of the possible characteristics of an environment in which information resources are highly developed. This list is admittedly not all-encompassing, and input is welcome with respect to areas that could be included in future iterations.

Not all aspects of such a “leading-edge” environment will be feasible or desirable for many institutions. However, each institution can find appropriate elements that will apply. This example is offered in the summer of 1995; with the passage of time, some of the characteristics will change to accommodate emerging technologies and strategies.

1. Infrastructure
   a. A high-speed multi-protocol network has been installed to handle both on-campus and Internet access. Multimedia, voice, and video transport are enabled.
   b. Access to networked information and computing facilities exists that enables the same services from remote locations as on campus.
   c. A distributed computing environment exists including production-level implementation of file systems, directory services, remote procedure calls, and security.
   d. Message-enabled applications, electronic mail, groupware, and electronic forms are in place.
   e. Archive and back-up systems are in place.
   f. A campuswide information system is in place, using widely familiar access tools that are easy to use and providing an initial entry point to most of the institution’s information resources.
   g. Small, scalable computers built on open systems and protocols are used as file, data, and cycle servers.
   h. The library’s server provides search engines for locating information in a wide variety of locations on and off campus, both through its own catalog and through other finding tools.
   i. Massive online storage capacity is available for research projects.
   j. Video conferencing systems are in use for administrative functions as well as interactive two-way and multi-way instruction, real-time collaboration among a global community of researchers and scholars, and so forth.
4. **Instruction**

- Faculty are commonly using information technology to support instruction and promote learning in the classroom; set-up time in the classroom is minimal.
- Faculty are also commonly using network technology to communicate with students outside the classroom.
- Labs and support personnel are available to assist faculty in the development of course materials, and partnerships are in place among information technology resources groups to enable more effective development.
- Librarians participate with faculty in providing instruction on the location and use of information resources on the campus network and on the international networks.
- Distance learning programs are offered as part of degree programs; architectures are established to support these programs; and library and administrative systems to support students in these programs are in place.
- The potential for technology to enable the redesign of curriculum is recognized, and research into new instructional models (especially ones that are designed for distance learners) is encouraged.
- A faculty reward structure is in place to encourage faculty to develop innovative teaching and learning techniques, using technology where appropriate.

2. **Standards**

- Architectures are in place that describe the data environment, the technical environment, and the application environment; the means to implement those architectures are in place and in use.
- The institution’s technology standards are well-defined and are uniformly applied in the evaluation, selection, and adoption of new systems, and in the upgrading, enhancing, and transformation of existing systems.
- The institution’s technology standards, even where these are only advisory, are clearly communicated throughout the institution and are kept current with advances in the technology marketplace, so that users making their own technology decisions can be advised on these matters.
- Interoperability and open systems are institutional priorities.

3. **Desktop**

- Network-connected workstations with sufficient power to utilize network services are on the desks of all faculty and appropriate administrators and staff, and all students have access to a workstation of this class.
- Public facilities are in place with hardware and software to support the instructional needs of faculty and students, with access to the Internet available in these facilities.

5. **Research**

- CPU servers of the type needed for robust research activities are in place and available for researchers.
- Specialized support is in place in the form of walk-in facilities that enable faculty to use sophisticated information technology for research activities.
c. Networked information systems are in place that allow faculty easily to access scholarly information and to communicate with colleagues.

d. An array of networked scholarly information is available (including full text, abstracting and indexing services, and image databases)—some acquired for campuswide access, some provided on a per-use basis from off-campus sources, and some created by on-campus research projects.

6. **Administrative systems**

a. The institution has undertaken a “rightsizing” effort to ensure the ability to respond easily to changing business needs of academic support areas, and plans are in place to migrate legacy systems to, or interface them with, client/server distributed systems. Systems beyond the pilot stage have been implemented in emerging technologies that can facilitate such a direction (for example, object-oriented programming and languages).

b. Students have easy access, in a user friendly environment, to their own records, including transcripts, grades, demographic information, class scheduling, advising, financial aid information, balance and payment information from their financial accounts, and so forth.

c. Students and faculty have easy access, in a user friendly environment, to online public access catalogs (OPACs) and their related circulation information as well as electronic services such as online reference services (e.g., via e-mail to the library reference desk or to online sources), electronic requests for book delivery or for inter-library loans, requests for journal article copies, and so forth.

d. A structure to enable process reengineering and partnerships between appropriate units in the institution is operating and successful. An activity-based costing process is used to determine benefit of processes and uncover areas ready for process reengineering.

7. **Support**

a. The central information resources organizations (for example, computing centers and libraries) have in place support centers and help desks to help faculty, staff, and students solve technological problems related to the use and manipulation of information.

b. A support structure which concentrates on local support providers who in turn support the end users is in place. Specialized support for areas such as mathematics/statistics, humanities computing, and high-level research computing is readily available.

c. The support services of information professionals are readily available, both in the computing and library areas, and training programs for the use of new technologies have been developed and offered.

8. **Planning and Advisory Committees**

a. A commitment to and understanding of the importance of information resources at the institution is evident at the highest level and integral to the strategic planning process.

b. Advisory committees for academic, administrative, library, information access, and other services are in place to guide and advise the priorities of the information resource areas.

c. A user-survey and benchmarking process is in place to assess the effectiveness of the information resources areas.

d. Organizations within the institution, especially the information technology organization, are flexible and able to change rapidly in support of changing business needs.

e. Groups have been charged with looking into emerging new technologies and testbeds have been established for the more promising of these.
9. Partnerships, Consortia, Collaboration

a. Partnership arrangements are in place with other institutions and vendors to address the highest strategic priorities of the institution.

b. Libraries, computing organizations, university presses, and other information resources units are cooperating to enable full-featured, automated access to catalogues, electronic text and images, and other academic information services to the constituency.

c. The college or university community has access to professional periodicals, both printed and online, in the information resources fields.

d. All information resources personnel have the means for continuous training to stay abreast of technology and usage.

10. Professional Development

a. Information technology and library staff attend conferences and seminars in their fields on a regular basis and contribute original work at these events.

b. The institution encourages such staff to actively participate in professional associations and recognizes the benefits of learning from colleagues at other institutions.

c. The college or university community has access to professional periodicals, both printed and online, in the information resources fields.

d. All information resources personnel have the means for continuous training to stay abreast of technology and usage.

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Print copies of the HEIRAlliance Evaluation Guidelines for Institutional Information Resources are available from CAUSE at $5.00 each (orders@cause.colorado.edu or 303-939-0310).

You may retrieve an electronic copy of the HEIRAlliance Guidelines as well as this supplementary example document at no charge by sending e-mail to heira@cause.colorado.edu containing the message:

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Text of both the HEIRAlliance Guidelines and this example document can also be retrieved from the HEIRAlliance folder on the CAUSE Gopher server (gopher://cause-gopher.colorado.edu/) or from the CAUSE Web server (http://cause-www.colorado.edu/collab/heira.html).

Comments and suggestions may be shared with the HEIRAlliance c/o CAUSE, 4840 Pearl East Circle, Suite 302E, Boulder, CO 80301-6114; phone 303-449-4430; fax 303-440-0461.