

An Ohio Commons for Digital Education Project Plans and Initial Projects Working Paper

January 13, 2003

(This document is the follow up to the concept paper dated December 19, 2002. See http://www.olin.org/about_olin/olinnews.php)

Development, expansion, and maintenance of instructional technologies, information resources, and research are necessary for 21st century learning. A shared resources and services environment as the Ohio Commons for Digital Education (OCDE) can effectively and efficiently assist instruction, libraries, research applications and resources as they converge. Separate OLN, OhioLINK, and OSC activities are now converging in areas that will better serve learners and institutions. Each organization continues to focus on its own primary mission – developing Ohio's e-learning capacity, information resources, or computational research and networking – while taking into account the convergence of these activities. Expanded coordination of the three programs simply improves our collective ability to build the best services at the lowest cost with maximum use.

As developments in instructional technologies continue, these interrelationships must be more expressly recognized and accounted for to best leverage to maximum affect the capabilities of all three organizations. In this sense OLN, OSC, and OhioLINK act as partners to create a commons of resources and services for education and research purposes. The benefits of this commons should extend to the K-12 community.

All three organizations contribute to and enhance the instructional and research missions of Ohio higher education. In all cases the objective is to provide high quality services at less cost than individual institutions would incur for those same services. Six projects comprise the initial priority list. They are:

- Institutional Repository and Knowledge Bank Concept
- My Learning Space
- Learning and Course Management Systems
- Ohio Computational Grid
- Statewide Higher Education Authentication
- Faculty Development

Institutional Repository/Knowledge Bank Concept

Institutional Repository (IR) is defined as digital collections that preserve and provide access to the intellectual output of an institutional community. An IR allows for the capture, control, access and preservation of the intellectual output of the institution's faculty, students, and staff. In contrast to discipline-specific repositories and subject-oriented or thematic digital libraries, institutional repositories capture the original research and other intellectual property generated by an institution's constituent population active in many fields. The Ohio State University defines the Knowledge Bank (KB) more broadly to include the full array of digital assets and information services available to or being created by OSU faculty, staff, and students. As such it includes not only campus-produced digital assets, but also the OhioLINK and library supplied digital information available. The listing below details the fullest extent of the concept as envisioned by OSU. Institutional Repository is a subset of Knowledge Bank.

Initial steps

Institutions across Ohio will choose to pursue various parts of the Knowledge Bank array of services. Done individually, this will represent a great deal of "wheel reinvention" and duplicative technical costs, will result in systems that do not communicate with each other, and do not fully exploit access to and use of the assets created and maintained across our institutions. We also will have institutions with few resources for the development of these capabilities that will be left behind. As the OCDE partners have done with their existing missions and services, there is an opportunity to advance with Knowledge Bank aggressively and efficiently across our entire community. The OCDE partners can build and maintain Knowledge Bank set of services that each institution could take advantage of at its own discretion and pace. In so doing we must serve both the individual needs of each institution as we also create a richer shared resource for our community.

OhioLINK already has a number of the IR/KB elements in place and software platforms that may be extendable for IR/KB purposes. OSU has the IR/KB concept under active consideration and has obtained the rights to test the MIT D-space software (www.dspace.org). It makes sense to fuse these two efforts together to evaluate software options. OSU provides an active incubator for the trial and development of statewide IR/KB capabilities. The initial evaluation of alternatives and testing of options can take place as a joint OCDE-OSU project. The results of this initial investigation can then be shared with the Ohio community to confirm the acceptability of the recommended directions.

Digital Knowledge Bank at OSU

- Online Library Materials
 - Books
 - Journals
 - Government Documents
- Online Reference tools
 - Catalogs
 - Indexes
 - Dictionaries/Encyclopedias
 - Directories
- Scholarly Portal: Gateway to authoritative Internet sites
- Digital Publishing
 - Pre-print services
 - E-journal, e-book support
 - Web site development and maintenance
 - Working papers
- Administrative Data Warehouse
- Faculty Research Directory
- Online Help Desk
 - Virtual Reference
 - Online technical help
 - Online tutorials
- Digital Institutional Repository
 - Digital special collections
 - Rich media (multimedia)
 - Data sets and files
 - Theses/dissertations
 - Faculty Publications
 - E-portfolios
 - Educational materials
 - o Learning objects
 - o Course reserves/E-course Packs
 - o Course Web sites
- Research/Development in Digital Information Services
 - User needs studies
 - Applying best practices

My Learning Space

Today both OhioLINK and OSC are considering the creation of a storage area for students and faculty (residential and distance). OhioLINK is approaching this in terms of storing research papers, dissertations, art, etc; and stored searches that may be of ongoing use by the user. OSC has focused on development of the electronic laboratory notebook to facilitate tracking experiments that are conducted via simulation and visualization. My Learning Space can also allow users to store files online and then access them from anywhere. It becomes an extra hard drive that can be used from any computer connected to the Internet. This service could grow to support a student, faculty, or staff member throughout their complete career creating a "portfolio" of their work and interests.

Initial steps

OLN, OhioLINK, and OSC will examine existing services from major web sites and higher education and meet with leaders from across the state regarding needs and expectations. It is expected a task force will be formed to frame the requirements, the development approach, and resource needs. A white paper and pilot site would be developed from this discussion.

Course Management Systems/Learning Management Systems (CMS/LMS)

OLN annually negotiates and manages (with assistance from OSC) a statewide license for 31 institutions using WebCT as a course management system. This August that license ends for half of those institutions, while others continue for one or two years. Blackboard is used extensively across campuses, but no statewide license exists. Other campuses use other tools or a home grown system. Numerous Ohio campuses have requested that OLN take leadership in additional licensing of tools and OLN/OSC become more active in open source products such as Open Knowledge Initiative, MIT's Stellar project, or Stanford's CourseWork. Additionally, OLN has explored the feasibility of creating a statewide utility similar to Wisconsin's dot.edu academic services provider (www.uwm.edu/DETP/dotedu/).

Initial Steps

A set of services can be provided statewide that will better serve the needs of individual institutions. OLN and OSC have several LMS elements in place and will explore mounting existing open source software, including national and state projects and tools, and continue statewide licensing where appropriate. A small user group will assist OLN in decision making.

Grid Computing/Ohio Computational Grid

The availability of the Third Frontier Network and the Cluster Ohio project will create the Ohio Computational Grid. With an Ohio Computational Grid, individuals will think differently about how computing services and data storage are provided, hardware acquisitions, and the physical location of the equipment. For example, OSC has been testing computational grids via 17 distributed cluster systems. There is evolving software to manage clusters as a common computer system for the delivery of supercomputer class services for science simulation. Computational grids can provide supercomputer class services to certain types of scientific problems. The success of the Cluster Ohio project shows that many components of computational services for students, faculty, and administration could be provided via a grid. Today, the research in the use of grids is primarily in the scientific arena. As the use of grids matures, we believe that it will be common sense for Ohio to think of the state's academic computer systems, data storage, and network as a single unified service.

Initial steps

OSC continues to develop and research the management software and tools to create the Computational Grid. OSC works with the international Grid community to improve the software. Although it will be several years before the Grid can provide comprehensive computing services, there are some areas where the Grid is ready for use: science simulation, volume rendering, and distributed data storage (WAN-SAN). OSC will prepare periodic updates for the Ohio community including background information about how the Grid can be more broadly applied in instruction and research.

Statewide Higher Education Authentication

Many institutions have already or are in the process of creating a campus-wide authentication service. An integrated authentication system would have advantages for the state. As the use of OhioLINK, OLN, and eventually a set of grid services expand; we need to implement a robust and secure authentication system that works compatibly across institutions. Increasingly our students will be taking courses from multiple institutions and will need access to common services. Today, OhioLINK and OLN rely on IP address authentication as a security mechanism and user lists provided by the institutions. There are several broad-based network authentication schemes in development. The community must work together to find the best solution for the state as universal statewide authentication will be a key requirement to access My Learning Space, the Ohio Computational Grid, OhioLINK and OLN services, Institutional Repositories/Knowledge Banks, access to statewide software licenses, etc.

Initial steps

Create a statewide task force to identify existing solutions and develop a feasibility paper that describes how authentication and authorization can be managed on a statewide basis. This feasibility paper would address issues of how institutions would benefit, what the impact of the system might be on institutions and describe the kinds of systems we could create.

Faculty Development Programs

How can we ensure students have a high-quality learning experience? Faculty development is at the heart of technology-enhanced teaching and learning and at the center of the Ohio Commons for Digital Education. OLN works in collaboration with faculty development directors at Ohio colleges and universities (on faculty tools training, knowledge

exchanges, building learning communities and other projects) to help Ohio faculty meet the challenges that instructional technologies offer to them. (See http://www.olin.org/teaching_and_learning/

Newly created digital assets from the OLN Learning Communities will be organized, stored, and shared via the Knowledge Bank. The Ohio Computational Grid will assist faculty in teaching across the state by opening up access to ubiquitous computing. Faculty development activities of various types are the essential support for projects such as the Knowledge Bank, e-learning, Ohio Computational Grid, My Learning Space, and other forthcoming activities of the OCDE.

Initial steps

OLN will continue its ongoing faculty development activities, including the new Learning Communities initiative involving 30 communities across Ohio. OLN will broaden its faculty development programs to support the projects of the Ohio Commons.

