New Rates of Exchange: Technological Integration and University Libraries in Central and Eastern Europe

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Over the course of the past ten years, Central- and Eastern-European Countries have seen significant changes in virtually all sectors of society. Higher education has been transformed, bringing western philosophies to the discussion table and introducing technology into areas once devoid of this medium. University libraries have also undergone fundamental philosophical and organizational changes while integrating and utilizing technology to perform many of the functions that were once labor intensive. In this paper, I would like to provide a brief analysis of the overall progress that has been made so far in regard to technological integration within C&EE university libraries and then present possible scenarios and models for technology and information infrastructure development for C&EE universities moving into the 21st century.

Where are We Now?

As the host country for this year's conference, it would seem fitting to begin with a review of Hungary's academic library initiatives. Hungary has provided a unique model among its peer countries in establishing uniformity in library systems, since several different versions of online catalogs are now available. In 1996, the National Infrastructure Development Program created a distributed search function, linking multifarious systems with one interface; users enter the WebPac system and are given a selection of university libraries from which to choose regardless of their own platform. This system could actually serve as a model for cross-platform distribution of online catalogs within many areas in the West. More notably, the Hungarian Electronic Library (HEL) is a highly innovative project that has been developed over the past few years. Using Voyager as its OPAC, the HEL allows searchers to access an online help desk, view new acquisitions, download software tools, and even view the historical and literary exhibitions in the Magyar Pavillion in a Virtual Reality Markup Language (VRML) environment.

Hungary's neighbors to the north and south have also implemented new technologies to further the technological development of the region's information infrastructure. The Czech and Slovak Republics have teamed to create a National Union Catalogue (CASLIN), which has become widely available as a tool for resource sharing among the two countries. Additionally, the Croatian Academic and Research Network has teamed with Ovid Technologies to offer databases such as Current Contents, MEDLINE, Agricola, and INSPEC across the university library system. Librarians working on the project are even providing workshops to train university affiliated faculty and staff in the use of virtually every common technological product from Microsoft Word to Internet searching and Internet security. Perhaps the most progressive
model of networking initiatives is Slovenia's Cooperative Online Bibliographic System & Services (COBISS). In the mid-1990s, the government of Slovenia set up the Institute of Information Science (IZUM) as a public, non-profit entity charged with bibliographic development among the university libraries. Virtually the entire country's libraries now use it as their main information resource, and each university benefits from the shared use of one common platform.

Telecommunications service is still a problem in many of the C&EE countries, however, creating a strain on both the home and university user. This will continue to be an unfortunate impediment to technological integration in universities and their libraries. Privatization efforts have had varying effects; in many C&EE countries, the formerly state-owned telecommunications networks still dominate the market. External competitors are therefore faced with limited distribution networks and local access nodes, and consumers of information are subsequently prevented from accessing the Internet through traditional means.

Ironically, the problems associated with the telecommunications industry within C&EE countries have not stopped information consumers—many have given up on traditional cable and have embraced cellular technology. However, the increased emphasis on the use of this medium creates strange scenarios for consumers of information. Dan O'Shea, technology editor for *Telephony*, observed several cultural phenomena taking place in Central and Eastern Europe as a result of shifting telecommunications priorities:

On a Warsaw bound train, you're liable to run into a few people commuting simply to use the Internet, a modern equivalent of heading to town for supplies.

In Krakow, an Internet cafe is like a petri dish for telecom's impact on the social experience. It also says something about how one society's reality ultimately dictates the shape and manner of telecom adoption.

With all of the attention paid to non-traditional vendors by the general public, we might now begin to ask how C&EE universities have been able to address and plan for changing trends in telecommunications infrastructures. Although university libraries have created global information services, patrons are still constrained to using many of these resources in-house as opposed to the remote access with which we are familiar in the West. University libraries have added servers and have even developed web sites, yet the colleges can neither provide readily available Internet access to the academic community nor can existing telecommunications infrastructures support higher volumes of web traffic. If scenarios such as these continue to hamper academic library network developments, it might be time to investigate the feasibility of alternative modes of telecommunications support within the university systems.
Technology and Information Resource Sharing Using "Economies of Scale": Higher Education in Connecticut

The strides C&EE university libraries have made to implement technology and increase its use is more than apparent. Those of us in Western countries know this is a daunting task and that several roadblocks are sure to be encountered along the way. Within the context of higher education in Connecticut, I would like to look at a few models of how the use of shared technological resources and consortial bargaining might help in developing C&EE university information infrastructures in the 21st century.

The dilemma that many of the C&EE university libraries are now dealing with in regard to network distribution and technological integration is similar to the situations encountered in the United States. As an example, the University of Connecticut enrolls 25,000 students each year, providing classes at its main campus in Storrs, CT; yet it also offers programs ranging from the bachelors to the doctoral level at six other campuses across the state. In the past, the individual library on each campus acquired, cataloged, and maintained its own collections and databases independently of the main campus. There was little communication between the individual schools when dealing with collection development and technology issues, and consequently librarians were collecting duplicate resources and were maintaining expensive databases without working with their peers at sister campuses. This model proved somewhat costly in terms of personnel, equipment, and acquisitions budgets. However, in the mid-1990s, the University of Connecticut Libraries embarked on a mission to centralize technology, resource sharing, and staffing. Each campus library became one unit within the larger library structure, and computer systems and management were centralized at the university's main campus in Storrs. Now the organization runs more efficiently and effectively in terms of dollars and people, and the information flow between all of the campuses has largely increased. Additionally, when negotiating database licenses with corporate vendors, all seven campuses act as one unit to secure reduced subscription prices.

The community college system within the state of Connecticut has also been able to benefit from shared technology and information resources. There are 12 community college campuses within the state of Connecticut. All of the Local Area Networks (LAN) on each campus are routed into a Wide Area Network (WAN), which is administered at a central location. This WAN subsequently shares all of its servers with each campus, including servers for e-mail, web hosting, data management, and network administration. By using this model, the community college system has spent far less money on expensive servers and has distributed its resources through a virtual information highway across the state.

When dealing with a database or technological media vendor, the all-too forgotten concept of reciprocity still exists; to what extent we profit from this relationship is in large part based on our own actions. In the United States, there has been an increasing emphasis placed on collective bargaining within the framework of networking information resources. Companies that
vend information online stand to gain by selling their product to as many customers as they can reliably support. One can infer from the title of Jeffrey Gitomer’s book *Customer Satisfaction is Worthless, Customer Loyalty is Priceless*, that a long standing relationship with clients has become the most critical element for surviving in business. Companies that sell knowledge rely on the income associated with a loyal client base to help them maintain their operations for the long term.

When joining together as loosely-coupled organizations to negotiate with database companies, libraries bring tremendous bargaining power to the table. Corporate providers of information stand to benefit directly by gaining the consortium contract of several libraries working through "economies of scale," and as a result libraries benefit from reduced pricing structures. Successful examples might include the following:

- The Connecticut Library Network and Bibliomation, Inc., both out of Connecticut, have negotiated with GaleNet and EBSCOHost to access their full text databases at reduced prices for consortium members. Bibliomation, Inc. also offers an online catalog through the Colorado Association of Research Libraries (CARL) to six community colleges in Connecticut.
- The New England and Southern Library Networks (NELINET and SOLINET) have enabled many of the academic libraries on the eastern coast of the United States to subscribe to LEXIS/NEXIS® Academic Universe through their consortium negotiations with Congressional Information Services. The price on this database was once so prohibitive that many small and mid-size academic libraries could not afford subscriptions.

Libraries within the Connecticut Community College System administer their subscription database and online catalog licenses, using a somewhat different model than the University of Connecticut. Although each campus is a representative of the community college system, each library is at its own discretion to participate in one of three main non-profit consortia within the state. The libraries within each consortium then determine which products they will purchase and negotiate licensing as a group rather than as individual libraries. By using this type of "privatized" consortium model, each library is actually a stockholder in the overall organization and is given a vote when selecting new products. As is the case with most "economies of scale," database vendors have been more helpful in providing extended services and are far more willing to lower their prices in order to secure the long-term commitments of multiple sites.

Equally, telecommunication systems can be negotiated with local or regional network providers by way of the consortium, providing dedicated lines for information infrastructures within higher education. Many of the colleges and universities within Connecticut have worked out arrangements with Southern New England Telephone to lease telecommunications lines with increased bandwidth at very competitive prices. Since either college or consortium members are
the only users generating network traffic on these lines, the information infrastructure in higher education has seen increases in the speed and efficiency of the network, resulting in far faster Internet download times for the front end user.

Conclusion

Those of us in the West who are helping to address the complexities of technological integration in C&EE libraries are oftentimes quick to rush for immediate answers based on our own situations. Yet "long term success comes through awareness of both social limits and possibilities, not through making over other societies in our own high-tech image." Certainly it has been a very difficult time in Central and Eastern Europe over the past ten years-but it has also been an exciting era for new ideas and extended partnerships with colleagues across the globe. It is hoped that our colleagues in Central and Eastern Europe might benefit from analyzing the successes and failures of university libraries in the West. Perhaps this might be the driving factor for developing long term planning in the 21st century. One thing is certain though: through continued partnerships such as the Alliance of Universities for Democracy, we can surely reach shared objectives for higher education while jointly planning for a new millennium—a millennium in which all of us our both educators in and stakeholders of a global society of knowledge seekers.