

# **The Impact of Digital Collections on Library Use: The Manager's Perspective**

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## **Abstract**

**This paper focuses on the impact of digital collections on library use based on two years of experience in a metropolitan research university. Using statistics and observations it will be demonstrated that an academic library can become user-centered in the electronic environment. It will also be demonstrated that new educational initiatives from the state government and the university administration can help the library gain a more central place within the academic enterprise. Information will be presented on cooperative and consortia-based initiatives to contain costs and to expand access to electronic databases.**

## **Introduction**

The availability of electronic information continues to increase and become more accessible each year as more people are acquiring personal computers. Based on 1997 United States statistics there were 407 computers for each 1000 people, or one computer per two and one half people, the highest computer per persons ratio in the world (Statistical Abstracts). The growth of the Internet and related Web information during the past several years has likewise been phenomenal and continues to increase at a rapid pace. As people access and use the Internet their expectations for information are growing especially in the higher education environment and academic libraries increasingly experience the effect of these growing expectations.

In the 1996-97 academic year 3706 institutions of higher learning spent \$48 million (5.6%) of \$1,117 billion acquisition budget on electronic resources, a 1.1 percent increase over the 1995-1996 academic year (Bowker). Most academic libraries have had to update their technologies and their infrastructure to accommodate their users' demands for access to and use of electronic information. Users need up-to-date computing, good training and instruction and access to full text. Academic libraries had to begin rethinking their operations and services in terms of the electronic information environment. In most institutions use of the physical academic library and print resources has decreased in recent years while use of electronic information sources has increased.

Librarians are slowly beginning to understand information-seeking behavior in the electronic information environment and how users search for online information and they are starting to work with vendors and aggregators of electronic information to produce better designs for electronic product use.

## **Educational Environment – Kentucky**

Kentucky's population is undereducated for the challenges they will face in the 21<sup>st</sup> century information environment. Kentucky's average income level per person falls in the lower third percentage of the United States. A majority of Kentucky citizens do not have a higher education degree and Kentucky's full-time enrollment in higher education is one of the lowest in the United States.

Since 1995 when Kentucky Governor Paul Patton was elected to his first term (he was recently elected to a historic second term), he has worked with education leaders and the Legislature to upgrade the state's total education system. In 1997 he collaborated with the leaders in higher education to increase the percentage of Kentucky's population who have access to higher education. He allocated more than \$167 million additional resources for higher education during the 1998-2000 biennium to address

- research initiatives,
- technology,
- workforce development,
- physical facilities and
- financial aid for students.

The University of Louisville's share of this was more than \$4.5 million (28 percent). Governor Patton supported the creation of a new governing structure for higher education by creating the Council of Post-Secondary Education and gave them responsibility for the technical schools, the community colleges, the comprehensive and research universities and most recently, continuing education and the newly created Kentucky Virtual University.

## **Kentucky Virtual University**

The Kentucky Virtual University ([www.kcvu.org](http://www.kcvu.org)) was created in 1998 to help address the problem of access to higher education for Kentucky's citizens living in remote rural areas. The goal of the virtual university is to provide Kentucky's citizens with access to higher education both undergraduate and graduate no matter where they reside. Utilizing any type of library, school, community centers and computers any citizen can have access to learning, to information and to instruction.

## **Kentucky Virtual Library**

The Kentucky Virtual Library ([www.kcvl.org](http://www.kcvl.org)) is a library consortium including all types of libraries, public, private, school, academic and special. It is accessible 24 hours from any Internet-connected computer and provides access to a variety of databases for all citizens of Kentucky. Online tutorials help citizens learn valuable information skills. Timely document delivery, online reference service, cooperative digitizing projects and a common interface assist all citizens in equitable access to information,

## **Description of the University of Louisville (U of L)**

U of L is a metropolitan research institution, the second largest in Kentucky and has 20,000 students (64% full time, 36% part time). With 11.5 percent minority students U of L has the highest percentage of minority students in the state. Most students, 85.3 percent, are from Kentucky, 14.7 percent from other states and other countries. The University is a Research II institution on the way to Research I status and has 1250 faculty, featuring 163 degree programs including 30 doctoral programs. There are seven libraries including a medical library located on the health sciences campus and a law library. The libraries include 1.5 million volumes, 15,000 current serial subscriptions and diversified special collections and other media. Access to several hundred databases and more than 10,000 electronic full text journals is provided.

## **University of Louisville Libraries - 1997-2000**

The experience at the University of Louisville during the past three years indicates that the expenditures for electronic resources have more than doubled from 4.76 percent to 9.07 percent, or from \$220,000 to \$500,000 of the acquisition budget and that trend is continuing. To support the growing expenditures for electronic information resources \$2.5 million were spent during the past three years on a new client-server system, and to update the technological infrastructure and computers. The libraries went from a mainframe computer library system to a state-of-the-art client-server system, from no network to an Internet network featuring 100 megabit connections, from no servers to seven servers, and from 50 dumb terminals to 550 state-of-the-art computer workstations. The Libraries technology department grew from four to seven full time staff and a support structure of a 10-member technology team. The libraries have several state-of-the-art interactive computer classrooms and a state-of-the-art computer laboratory.

## **Library Use – Statistics and Observations**

During the past two years total library use increased by 40 percent. Approximately 1.2 million users enter the libraries physically each year and use circulation, interlibrary loan, reference, books, periodicals, films, special collections, archives and related services. In 1998-99 more than seven million electronic uses of the online catalog, web sites and electronic journals were registered. Each year more than 9,000 students receive instruction in information skills in partnership with the faculty and the university has begun to integrate information literacy throughout the curriculum. The libraries are a net lender of library materials for the state.

### **▪ Metrolab**

During its first 11 months of operation 60,000 persons used the Metropolitan College Computer Laboratory, created with funds from the Metropolitan College, a partnership between the University, Jefferson Community College and United Parcel Service to educate their employees. People wait in line to gain access to this important computer resource. Informal queries of persons using the lab indicate that students appreciate and need the information assistance offered in the lab. They also want to do their work there

because the work stations offer access to all types of electronic information and all types of software packages to help them do their various research papers and projects.

- **Web sites**

The libraries feature 20 Web sites including approximately 11,000 pages and 19,000 links and last year alone seven million uses of the electronic catalog and web sites were recorded, an increase of 350 percent compared to the previous year. It must be noted that the libraries are only at the very beginning of collecting use statistics related to electronic information and the Web and much more has to be learned to ensure that these statistics are meaningful in measuring use. It is also significant that there are as yet no national statistics recorded in this area of library information use.

- **Electronic Databases**

Our experience with use of the OVID interface indicates a user preference for this search engine since it allows users options to use and understand complex databases. It enjoys heavy use (43,000 uses in 1999) among health sciences and science students and faculty. In 1998 access to the *Web of Science* was offered for the first time, all components of it as well as substantial back files. The science faculty were especially pleased and use statistics from 1999 (34,550 searches) indicate heavy utilization of this database. It is significant that use statistics of electronic databases are at the very early stage of development. More cooperation is needed from vendors to ensure that such statistics are recorded and that they measure different types of usage.

- **Distance Education**

The University of Louisville supports a variety of distance education programs both within the United States and in other countries. At this time programs are offered in 20 different locations including countries such as Greece, Egypt, Hong Kong, Panama, Czech Republic, Singapore and San Salvador. The libraries have developed a special program in support of these programs. Included in the library program are document delivery, reference service and instruction in information skills. A distance education office was created with two staff, a library faculty and a technological support person and with state of the art technology including a proxy server to keep track of students and faculty involved in these programs. The libraries have installed Ariel software in the various locations to facilitate document delivery activities. They work with teaching faculty to create appropriate Web pages for the teaching of the courses. Based on five years of experience the librarians have also developed cost data for library support to distance education students and faculty. At this time 566 students are participants in distance education offered through the University.

## **Assessment of Library Users**

During the past two years the libraries' assessment team has completed several surveys of students and faculty and last year the University including the libraries contracted with an assessment firm, Dey Systems, Inc. to develop instruments to begin measuring students' educational outcomes. In addition, meetings and focus groups are held with graduate students, undergraduate students and faculty to alert librarians to information needs and concerns of these groups. Suggestion forms are available throughout the libraries and on the Web sites and help the library staff address library and information needs and concerns.

The libraries have utilized information obtained from the student and faculty surveys in 1997, 1998 and 1999 to improve library services. Users indicated a need for more computers, more electronic information, more books, more journals, better photocopying and additional hours and the libraries have added and improved library holdings and access to electronic information. They have extended library hours, updated and added computers, and instituted a state-of-the art photocopying service.

The trends in user needs and utilization of libraries during the past three years show an increase in all library services, but especially in reference use, online catalog use and electronic database use as well as requests for more online information.

## **Future**

Experience at the University of Louisville during the past three years indicates that users want access to electronic information whenever possible. They need state of the art computing equipment and networks to make this possible. They also need much training and advice to be successful information users. These findings compare favorably with data from other academic libraries.

Librarians provide value-added services such as instructional tools, teaching sessions and reference assistance to provide a layer of intervention between public and product. Librarians are concerned with user needs, customer self-help and providing a user-centered environment. Computers and software products can make information use difficult and librarians need to provide assistance and make information more usable. Building good web sites will help librarians provide more user-centered information by providing attractive, easy-to-use sites, intuitive navigation, currency and appropriate text links. Librarians need to facilitate information retrieval rather than surfing. Consistency, feedback, easy reversal of actions, user control, and keeping a session history are important factors in value-added electronic library services.

## **Recommendations**

Librarians have been working with the Web, electronic information and vendors for several years now to provide their users with the best possible access to online information. Their experiences reveal that vendors of electronic information and databases need to work with them on creating common interfaces to electronic databases, viable pricing structures and becoming consistent in reporting statistics including such items as

- the number of logons
- the number of actual searches of a particular database,
- the number of actual users of full text articles
- the type of subject searches completed
- how many users were unsuccessful
- the type of electronic information use.

Librarians need to assess the use of digital collections in terms of

- comparisons to print use
- previously underserved populations
- change in usage patterns
- value of the collections
- change in scholarly communication
- effect on cost (Veldorf).

Furthermore librarians need to regularly assess the impact of electronic information on library operations and services. Already operations have been and are in the process of change especially in terms of cataloguing, processing and collection building. Services are similarly in a changing mode in terms of electronic information provision, reference, instruction and document delivery. User studies are beginning to indicate that the following factors statistically influence the use of electronic information:

- ✧ form of access,
- ✧ available technology
- ✧ instruction provided
- ✧ available full text (Townley).

Ultimately, librarians need to work closely in partnership with the teaching faculty to assess the impact of digital information in terms of learning outcomes for students and with researcher to assess research results.

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