The library and the computer center - friends or foes?: a general overview

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The relationship between academic computer centers and libraries is a many faceted, complex subject differing from one university to another. However, all libraries are doing today what they did in the past, and will do in the foreseeable future - that is, providing information, only the physical form of the information having changed. The computer center, however, is not providing the same service it did in the past - providing campus-wide computer resources and campus-wide programming services. Due to technological advancements, the client now provides these services for himself.

Parallel development of computer centers and library computerization

The meteoric rise of the power of the personal computer, the advent of networks and the parallel lowering of hardware costs signalled the end of the era of the mainframe, and the concurrent need for centralization of computer services. There is a definite correlation between the decrease in physical size of computers, the monopoly of the centralized computer centers, and the development of integrated on-line library systems. Academic computerization, as a rule, started off on mainframes (usually IBM and thereafter Vax machines). The sheer physical size of the computer, its cooling requirements and power consumption necessitated a central location attended by around-the-clock maintenance staff and a whole cadre of programmers. The financial investments in the computer meant that it had to be shared by all, in order to justify the high capital outlay for not only the machine, but the staffing, physical plant etc. At this stage, library computerization consisted mainly of
inventory control circulation systems, except for the pioneering DOBIS/LIBRIS system of IBM. The lowering of the prices of computer hardware, together with the growth of computer power lead to the advent of the mini-computer, as was characterized by the PDP and VAX family of DEC computers. These smaller, less expensive and more user-friendly machines became very popular in academic institutions (especially scientific institutions). Initially these machines, while nowhere in the size range of the mainframes, were still large, and, since the central computer center still used the mainframe, it made the computer center the obvious site for the placement of these machines. When they first appeared they were a "poor man's" mainframe, and each served several departments, necessitating campus-wide communications (which all lead to the computer center because of the mainframe). Libraries quickly understood the advantage of these new, smaller yet more powerful machines, with friendly operating systems that used plain English commands. Vendors rushed to get totally integrated systems up and running, even if the system then purchased had several modules which were in the "later to be implemented" stage. These turnkey systems no longer needed a large number of programmers to locally tailor the system but took advantage of the local librarian who knew his needs better than any outside programmer. There were systems which were connected to the vendor's central computer and changes or corrections were made in the evenings, but these rapidly gave way to table-driven systems, whereby choosing a different set of parameters in a table made the system react in a different manner.

As the size and prices of computers continued to shrink, and inversely their power grew, so did the need for a central computing organization wane. The physical environment was no longer a factor of great importance, as now the computer could stand in the library without special power requirements, or climate controls. The lack of central control lead to the purchasing of a large number of different brands of computers on any one campus, and eventually to the adoption of Unix as the "standard" operating system of the campus (Let us ignore the problem of each vendor's different version of Unix). Although totally user-unfriendly, the librarians could not go against the tide of the computer industry, and vendors either brought out
new systems using Unix, or re-wrote their existing systems for the new standard. The proliferation of brands of computers, once a standard operating system was established, brought up the subject of standards for bibliographic records, allowing the libraries to migrate from one computer to another with relative ease.

The library is in the foreground of technology

Despite the library's traditional conservative image, and despite it's now misleading name (the Latin root LIBR referring to books), the library has been in the foreground of technology for the last decade. Before students' cards or food packaging had bar-codes, all library systems were reading them and printing them for inventory control. Packet switching networks were used by on-line searchers years before the general public discovered them. CD-ROMs were adopted by libraries before the public either listened to them, or used them as reference works, and it was libraries who linked their stand-alone CD-ROMs on to networks, much to the displeasure of the on-line vendors. The Internet and its capabilities was adopted by librarians long before all the metaphoric, and often childish, web jargon existed ("surfing" the net, Archie, Veronica, etc.). Library systems are now rushing to get client/server architecture up and working way before the computer world has wholly adopted the technology. SQL inquiries are appearing in more systems every year, and the list of new technologies embraced by libraries goes on and on.

While all this furious activity has been going on in the once staid library, what has been happening at the campus-wide computer centers? The above mentioned miniaturization of computers and their subsequent dispersal throughout the campus was accelerated even more by the appearance of the "table-top" sized PC computers, and afterwards by the "lap-top" models. Suddenly computer centers found their computing power owned and distributed throughout the campus, and their role changing from supplying computer resources to that of supplying the networks to link all those resources together. Network architecture, development, physical installation of network
cables and their maintenance moved the computer more in the direction of hardware, and away from the software that kept it busy in the heyday of the mainframe. Each PC user is now basically his own software manager, as it is now easier to buy a ready-made program and alter it, rather than program it from scratch. The computer center now collects software, or at least information about available programs, helps with their installation if the client can’t install it alone, often serves as a buffer between the software vendor and the end user (enabling educational or academic discounts due to volume purchases, or campus-wide site licenses). Rather than an active programming role, their function in now more of a role of instruction and hardware matters. The words "campus" and "wide area networks" have now taken on new meanings as students and staff contact computers via modems all over the world. We have reached the day when the student can login to his lecture, download it, e-mail back his homework, all without ever setting a foot in the university.

**The library v/s the computer center**

The relationship between the library and the central computer center includes aspects of industrial sociology and psychology, the educational aspects of libraries and retraining of librarians, the "guilding" of computer persons, and their use of professional jargon, decentralization of computing power, the funding and implementation of technological changes, and, last but not least, the (often mistaken) image of the conservatism of librarians.

As the need for a physical presence in the library in order to search the catalog, reserve material, search on-site or world-wide databases lessens, so does the need for a centralized computer center. While the student usually still has to reach the library physically in order to receive the book he ordered, inversely so does the need to physically reach the computer center dissipate. Only a false prophet would predict how much longer the need to physically reach these two institutions will continue. Tons of paper have been used to write about the "paperless" society showing that it is not the
lack of technology, but rather sociological, economical and human habits which limit leaps into the future. The book and journal still being the basic library unit for the foreseeable future, it is this factor which will limit radical changes in the ways that libraries serve their public. Computer centers however are in a different position, as they are a relatively new institution in the university setting and, being based entirely on technology, can be reached remotely. Objectively, due to the huge cost of mainframes, and the necessary programmers and technicians to run them, central computer centers could not overnight switch to the newer, dispersed computing power spread all over the campus, and beyond. No longer can any one programmer help with the running of a program, as, due to the lowering in costs, many different versions of the same type of program (word processors, spread sheets etc.) are now in use. As both of these bodies vie to broaden their bases of a public to serve, a clash between the two is inevitable. Needless to say, a broad-based clientele means more funding, more and better equipment and more staffing positions. As the traditional roles they served in the past become obsolete, they will be looking for new tasks, or challenges, to justify their existence in the future. The library is doing today what it did in the past, and will do in the foreseeable future - that is, providing information. The fact that the outer form of the information has changed, from parchment to paper to an electronic media, does not change the information it contains. The computer center however is not providing the same service it did in the past - computer resources and programming. Due to technological advancements, the client now provides these services for himself. Aside from the physical aspect of connecting lines, networks and servers, and supplying "heavy duty" computing power for scientific departments, the role left to the computer center is one of instruction: thereby leading to a clash with the library’s instruction. It is clear to most that the library isn’t interested in teaching the use of "Word", "Paint Brush", "Excel" and other popular programs but the use of the Internet spans both the library and the computer center.

In the personal opinion of the author, libraries made a mistake by over-reacting to the introduction of CD-ROMs. If libraries had refused the stand-alone attitude of the database vendors, much time, money and
effort could have been saved in trying to network together all the separate stand-alone systems. In the future, the falling costs of disks will enable libraries to take a step back in technology and, via a magnetic tape medium, pour the information onto disks and enable everyone who uses their catalog to search the various databases.

Schiller (1994) says it all in the title of her article: "Internet training and support - Academic libraries and computer centers: who's doing what?". Aside from training how to use the material, who is going to open a web site, make home pages, upload files, etc. etc. etc. Although they often do it, no one should expect librarians to string up wires to connect a network, so why should the computer center expect to provide training in searching for information. Did the computer center train students how to use the OPAC or Dewey, LC or UDC? Is this just a left over vestige from the programming aspect of past computer center days, or a "political" seeking of additional territory?

It is doubtful whether professionals in any other field are as multi-faceted and as unappreciated as today’s academic librarians. To paraphrase Churchill: Never was so much owed (in the academic community) to so few (librarians).

References

1. Library Technology Reports, 30, (2-3) 1994. March/April. The two issues are devoted to an extended report on integrated library systems.


4. For a fictionalized view of libraries in the past, see ECO, Umberto, The Name of the Rose.

5. O, Amanda S. and Lainer, Yu-Huei and Chen, Ching-Chih, Two months to a
