

**Systems Implementation at
Fondren Library**

A Five Year Plan

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Much of the information in this report
is out of date.

Summary

(All prices shown are approximate)

Year 1 (89/90):

- * Purchase additional disk drive (pending price reduction)
 - \$9,500

- * Place additional terminals in stacks
 - cabling to all floors (workorder for estimate out)
 - purchase six additional terminals
 - 2 4th floor
 - 1 3rd floor (south)
 - 2 2nd floor
 - 1 basement (east)
 - total cost \$6,000

- * Install additional microcomputers for access to e-mail, productivity tools
 - 2 Processing Services
 - 1 Database Management
 - 1 Cataloging
 - 1 Government Publications
 - 2 Reader Services
 - \$8,000

- * Replace M105 terminals on OCLC with microcomputers
 - 4 Compuadd 286/12
 - \$6,300

- * Software for above
 - OCLC terminal emulation software
 - Wordperfect 5.0
 - \$2000

- * Additional CD-ROM drives
(for additional products, including govt. information)

- * Additional 3.5" disk drives for CD ROM workstations
(to encourage users to download instead of print)

- * Desktop Publishing Workstation for library publications

(user guides, instruction, bibliographies, etc)
(see attached equipment list)
-- \$12,000 (for "best" solution)

- * Laser Printer for Librarian's Office
(for potential networking next year)
-- \$2000
- * Tape Cleaning equipment
-- \$6,000
- * PS/2 Model 30 for Generic Transfer and Overlay (GTO)
from NOTIS
(GTO REQUIRES the old bus structure)
-- \$2,500
- * Authority control from BNA and LC
Involves purchase of LC Subject Authority Tapes
and name authority record extraction by
Blackwell, N. A.
-- \$23,000
- * Tape backup system for microcomputer hard disks
-- \$2,000 (with tapes)
- * Implement VTAM connection with network
- * CD-ROM networking evaluation and proposal

Year 2 (90/91) :

- * Local Area Network for library building
 - Spine for building
 - cabling for Librarian's Office
 - file server
 - software:
 - Novell
 - Wordperfect (network license)
 - dBase
- * CD-ROM Local Area Network
 - CD-ROM server
 - cabling (to CD-ROM room, CSI, Govt. Docs)
 - Software
 - Licenses for data
- * CD-ROM workstations
(may be necessary outside network for

government information)

- * Quiet printers for LIBRIS Room (4)
- * Additional disk drive
(depends on records added)
- * OCLC CAT-CD 450 Product
(allow cataloging without telecommunications costs)
- * Using mailboxes for library communication
 - circulation (renewals, questions)
 - comments
 - reference questions (depending on staff)
- * Software for mounting databases
(in test)

Year 3 (91/92) :

- * Additional machine power
Depends on decisions made in administrative computing.

If a 3090 is purchased and the NOTIS System moves:

- MVS NOTIS license
- cabling for coaxial terminal connections
- modems for 476 connections
- arrangements for backup to catalog
(either CD or COM easiest)

If a smaller machine is purchased for administrative computing

- Assume: NOTIS does not move:
- purchase IBM 4381 (used)
- set up backup system with IS (Information Systems)

- * Additional Disk Drives
 - depends on mounting databases, amount to be stored
 - also replace 3370s (low density) with 3380s

- * Purchase database products for mounting:
 - INSPEC?
 - Current Contents?

- * Specifications for an interlibrary loan function (if NOTIS has not already done so)
 - to work with multi-database for document delivery

- * Specifications complete for back-up circulation (if NOTIS has not already done so)
 - to operate if system down
 - more necessary if system out of building
 - microcomputers for operating (minimum 2)

Year 4 (92/93) :

- * Continue implementation of multi-database product

- * Coding/ testing of interlibrary loan function

- * Implementation of New Serials module (if available)
 - Purchase of required workstations

Year 5 (93/94) :

- * Evaluate impact of multi-database product
 - Positive:
 - Purchase additional databases?
 - Purchase additional disk drives
 - evaluate impact on machine
 - Negative:
 - Discontinue databases in production
 - Revise document delivery plan

- * Replacement of terminals as needed
 - original terminals will be 10 years old

A Systems Implementation Plan for Fondren Library

The continuing implementation of computing in Fondren Library serves three purposes:

1. to assist the library in meeting its mission of making information available to the university research community in a timely manner and useful format;
2. to assist library staff in performing their tasks in an efficient and expeditious manner;
3. to complement university systems offering the latest in information delivery.

There are three parts to this plan: the central computing facility, supporting NOTIS and electronic mail; networking, connecting the library to the rest of the university community; and microcomputing, supporting wordprocessing and other productivity tools.

Mainframe System Plan

The current system is meeting our basic needs for remote access to the bibliographic file of material held in Fondren Library. There are several research developments and trends which will require **additional** hardware and software if we are to continue offering our researchers current information and practice.

1. the library will continue to add titles at a rate of 24,000 per year, and volumes at a rate of 30,000 to 40,000 per year (**assumption:** the library budget for materials will increase at the rate of inflation only. **This estimate does not include any allowance for enhancement funds**);
2. additional sets of records on tape for our microform holdings will be purchased as available. At present, we plan on adding around 125,000 such records this year;
3. two additional indexing methods are being implemented: keyword indexing, with boolean search strategies, and merged heading searching, which will make cross references available;

4. records remaining to be converted to machine readable form will be converted as personnel are available

5. there is a movement in other institutions to provide researchers with access to files of article level records (at this point in time, citations only), and these files are being loaded locally on mainframes for general access or offered on CD-ROM for more limited access.

The addition of records to the system affects the online storage required since the record itself, plus indexes to it, must be stored. NOTIS is now suggesting a figure of 3.5K per record (including indexes). Therefore, each of the next two years includes the addition of a 3380 disk drive. The drive for the first year (this year) will allow us to increase our sort space, provide space for the keyword indexes, and give David Boyes additional space for VM. The drive next year will absorb merged heading indexes and additional records.

Keyword searching which will become available this fall on selected terminals requires additional processing power and memory. We hope to tune the system this year to get the best use out of the speed and memory we have. As possible, additional terminals will be authorized for keyword processing. However, the current system would not be able to support the multi-database product which depends on keyword searching as its primary access tool.

Electronic mail is currently used at the library to increase productivity by enhancing communication. Though several of us correspond with others outside the building, the most extensive use is interdepartmental within the library. We have hopes of extending e-mail to all professional librarians to enhance communication with faculty and departments. We are presently considering several e-mail services which have been successful at other libraries including reference question mail boxes, circulation renewal by e-mail, and an online suggestion box. Other services could include interlibrary loan or document delivery by e-mail as well as purchasing suggestions to the collection development librarians.

Access to multiple databases from the NOTIS system should be considered in the next two years, and the decision made will affect the machine capacity needed for the system. As stated previously, the current machine will handle our current needs plus additional records in the library management system. However, the addition of other databases,

with a concomitant reliance on the keyword/boolean search engine for access, will push the present machine past its capacities. Therefore, if we choose to mount additional databases at Rice, whether with the help of a grant or not, we will need to examine processor power for best response time. HARLiC is currently exploring acquisitions of databases as a consortium and will be seeking grants to assist in mounting these. They will also be seeking a site, and the Rice NOTIS system is one possibility.

At this point, the plans of the library are tied to the decisions made by the Administrative Computing area. If, in purchasing the new software for administrative computing services, the university chooses to mount this software on a 3090, then moving the library system to the same machine is feasible. The 3090 platform is supporting NOTIS in other installations offering keyword access to all users, and not showing a degradation in response time. Therefore, year three of this plan will be spent in re-installing the NOTIS system on the 3090.

However, if the administrative computing software is installed on the present AS/9000 or on a stand-alone machine such as a 4381 or a 3081/84, the library software would be an added load which such a system would have difficulty handling. In such a case, the library system would NOT move to a new system, and the machine in the library would need to be upgraded if we wish to offer these additional databases and services. Such an upgrade could be from the used market; specifically a 4381 could handle the library needs for offering multiple databases with keyword access through the network. This upgrade would also be in year 3 since it would have to occur before the multi-database product is put into production.

Networking

At the time the NOTIS computer was installed, Farrell Gerbode and Paul Milazzo put the first fiber optic cable in the library steam tunnels. We assumed from the first that the library would be on the Rice Internet, but the timing did not come together until this year. Now, with two-way network access in place, we are ready to look at some additions and refinements.

First, we will reexamine the connection between VM and VSE for more security possibilities. The most

straightforward way to accomplish this is running VTAM under VM and linking to specific, secure ports, in VSE. David Boyes has installed the software for this, and we are planning to test it this fall. Though VTAM will require resources under VM, it will free some VSE resources since all terminals coming in to VSE will appear as SNA. Having only SNA connections will allow us to reduce our VTAM partition and shift memory to CICS for keyword.

Second, we want to move ahead with CD-ROM networking. After performing a careful review of the hardware and software available, as well as those databases which are available on a network basis, we will make a proposal next spring for a CD-ROM network to offer access to CD-ROM products housed in the computer room. The first areas to be networked will be the CD-ROM room and CSI. If our proposal is accepted, installation will be done next summer.

Third, we want to explore a building-wide LAN to be attached to the backbone. This LAN would allow us to share files and printers more easily and provide a more efficient environment for administration. We are waiting to hear what the OCIS selects/recommends as LANs which it will help support. We expect to conform to campus standards as much as possible. This LAN could include Library offices only, or it could offer service to History, Journal of Southern History, etc. In 1990/91 we would like to install a spine for the building, as well as the first network in the library administrative offices.

Fourth, after we have successfully tested the administrative network, we would like to begin networking divisions and departments as warranted. This would begin in 1991 and continue as needed. One such network would be Processing Services where certain cataloging tools, such as the full LC MARC Name Authority File, could be available on CD-ROM, as well as other sources of MARC records.

Microcomputing

Microcomputers have been installed in the library gradually over the last four years. In selecting machines and the departments to receive them, we have kept the following factors in mind:

1. many staff require wordprocessing or spreadsheets to do their jobs efficiently;

2. many staff require intermittent access to NOTIS as well as wordprocessing, so we combined both functions at one workstation;
3. most library software runs on IBM products only;
4. almost all CD-ROM applications run on IBM clones (there are now a few for the Macintosh);
5. the CD-ROM interface card uses the old bus system, not the microchannel architecture;
6. all OCLC development is on IBM clones at this time, with the old bus structure required for their specialized card;
7. all NOTIS development is, at this time, on the PS/2 Model 30 (old bus architecture);
8. we need to save money (until the most recent educational price announcements by IBM, they were out of our price range);
9. we hope to network some day so that we can take advantage of shared files and peripherals;
10. ease of maintenance and management requires that we have as few brands as possible.

In evaluating several brands of PCs and PC clones, we have selected excellent machines while maintaining compatibility. All our machines have cost under \$2000. The most recent purchases were "kits" offered by Compuadd which included a 286/12 PC with 512K of memory, a 40 MB hard disk, monitor, printer, and software for \$1395. We also bought some memory upgrades and serial cards, but the cost per unit was still under \$1700. Compuadd has emerged as a strong "clone" producer, being well ranked in the PC magazines as well as represented on the Texas State Purchase list. Before buying these machines, we checked with the University of Houston which has 25 machines, several running CD-ROM products, and has had no complaints.

In 1989/90, we would like to extend microcomputing to two departments which do not presently have microcomputer access: cataloging and database management. An additional microcomputer for government publications would serve part time as a NOTIS terminal after the document records have been

loaded. Finally, the coordinators of Reference and Collection Development in the division of Reader Services need microcomputers for productivity.

In 1990/91, we would like to continue a program of providing all professional librarians in Reference/Collection Development with microcomputers. This goal would require an additional five machines. At this point, we would be ready to network all professional librarians. Part of the need for microcomputers arises from the desire to extend access to the VM based e-mail system. The micros would act as wordprocessors, but would also offer terminal emulation for use of the system.

Developments at NOTIS indicate a shift in the serials module to a workstation environment requiring personal computers as checkin stations. We have not heard, yet, what platform they are considering, but the IBM environment of NOTIS suggests the PS/2. Therefore, in 1991/92, we may be looking at the purchase of additional microcomputers for Processing Services functions.

Information Products: OCLC and other Sources

The Fondren Library will continue to use shared cataloging as a means of saving money and speeding up processing. However, our primary source of records, OCLC, will be changing over the next several years. They are currently in the process of changing their telecommunication system from a proprietary communication scheme using leased lines to an X.25 based network. It is not completely clear exactly how libraries will be affected by these changes. Another factor in the works is the New Online System, a re-design of the OCLC interface, and the addition of subject searching. Together, these changes have driven the need to replace the M105 terminals with M310s (Wyse 286 microcomputers with 1 MB memory). We still need to replace four M105 terminals by the end of this year. Though OCLC has specified the M310 terminal/workstation, they have also stated that other machines will work with the network, so we should not be bound by OCLC prices or products in the future. Also, we have heard that OCLC is now not sure the 286 platform will be enough to support the new interface. Therefore, we suggest that we purchase 4 Compuadd 286 machines with the same configuration as the M310, and save our money until OCLC has determined the base machine necessary for their new system.

In addition to OCLC, there are now other sources of cataloging records. We plan to evaluate and select a CD based subset of the MARC record database. At this time, the OCLC product, CAT CD450 appears to be the best product available since it includes recent member copy as well as LC MARC records. It also comes with Authority Files which will lessen our reliance on OCLC online authority files. A CD product could also be provided on a Processing Services network so that all terminals would have access to it.

Cataloging records are not the only products which are available in the CD format. The library has purchased several CD databases, and more will be made available in the next few years. The CD network mentioned under "networking" will allow us to make more such databases available at a lower equipment cost per workstation, but we will need to work with vendors on the license fees for such products when networked. Several desirable products have no such licensing arrangements at this time.

Finally, if we consider the multi-database product from NOTIS, we will be considering what data would be appropriate to mount in this fashion (instead of on the more restrictive CD ROM). Several databases are available which would contribute to the research community at Rice, namely INSPEC, COMPENDEX, and Current Contents (from ISI). However, the costs associated with these databases may be restrictive. A full evaluation will be done in association with the grant process and HARLiC as mentioned earlier.

Current Equipment

NOTIS Specific Equipment

Central Site (on IBM Maintenance):

IBM 4361 ML5: 12 MB memory
 6 GB DASD storage
 5 3370
 1 3380
2 3430 Tape Drives
1 3262 Model 5 Printer
1 7171 ASCII Device Attachment Controller
2 Telex 909 (on Telex maintenance)

Terminals:

Telex 179 20 (on maintenance)
 17 Public use
 3 Library use only

Telex 476L 13 (on maintenance)
 13 Library use only
Telex 479L 1 (on maintenance)
 1 Public use

C.Itoh 50+ 8
 6 Library use
 2 Public use

IBM 3162 3
 3 Public/Library use (reference, documents)

Esprit 1
 1 Public use

ADM-3A 5
 2 Public use
 1 Library use
 2 Repair/Storage

Printers:

Telex 281B 14 (on maintenance)
 4 Public use
 9 Library staff use
 1 Currently unassigned

IBM Quietwriter III 1
 Library use (spine label printer)

Microcomputer Applications

Microcomputers Installed:

(* indicates microcomputers with access to NOTIS system)

1 Compuadd 386/25*
Automated Services

1 Zenith 286/12 Laptop
Government Publications

19 Compuadd 286/10 and 12
2 Automated Services* 4
Administration (2*)
3 Processing Services* 4
Reader Services (2*)
2 RiCE 2 Access Services (1*)
1 Government Publications 1
Collection Management

9 Dell (PCs Limited) Turbo PC (8088)
2 Reference Desk (searching) 1 Binding*
3 CD-ROM Room 1 Woodson Research Center *
2 RiCE (searching)

2 IBM PC (8088)
Interlibrary Loan
Business Information Center

1 AT&T PC
NASA Archives

1 Standard PC
Government Publications (running MARCIVE; formerly Bibliofile)

1 American PC
RiCE Receptionist/Data Entry

3 Unknown
Friends of Fondren (8088)
Infotrac (8088)
Business Information Center (286)

Software Standards:

Wordperfect
Lotus 1-2-3
dBase III+
YTERM, ProComm, PC-Talk

Desktop Publishing System

Proposal: Macintosh

Hardware:

CPU	Apple Macintosh IIcx/80MB/4 MB	4,196.00	
KEYBOARD	Apple extended keyboard		145.00
VIDEO	Apple two-page monochrome monitor	1,366.00	
	Macintosh II two-page monochrome video card		380.00
PRINTER	LaserWriter IINTX	4,302.00	

Software:

DTP	Pagemaker	380.00	
TEXT	Microsoft Word	227.00	
GRAPHICS	Adobe Illustrator		261.00

Total 11,257.00

These prices are taken from Rice Campus Store published price lists from
8/1/89, 8/15/89, and 9/19/89