

NOTIS

NOTISes

Number 4

June 1, 1985

LATEST ENTRY CATALOGING AS AN OPTION IN AN ONLINE CATALOG: AN EXPERIMENT USING NOTIS AT NORTHWESTERN UNIVERSITY LIBRARY

Northwestern University Library has decided to start using Latest Entry Cataloging as an option for cataloging selected serials whose titles have changed. For these serial title changes we no longer create a new record for each new title, as is required under the rules of Successive Entry Cataloging. Instead, we incorporate the new title in the present record and provide access to the former title as an added entry.

The reasons for this decision are many and practical. In NOTIS, our automated system, having all of a serial run in one record makes it faster and simpler for the user to locate the volume for which she/he is searching and determine its circulation status. In the same way, it benefits many service departments by making their work easier and less time consuming. Latest Entry Cataloging also takes less time to perform, requires less training, is therefore less expensive, and frees serials cataloging staff to give attention to other tasks.

For Northwestern University Library this method of cataloging serials also helps to keep bindery costs down because the call number is retained and issues can be bound together. Latest Entry records take less storage space in the computer and less system time to use. Moreover, these records are suitable for network inclusion since they are coded as Latest Entry.

For the experiment, title changes are reviewed regarding their suitability for this method of cataloging. Some of the criteria examined include numbering systems, number of titles changes, and length of record. The experiment began in March and will continue through July at which time we hope to adopt Latest Entry Cataloging as a permanent option.

We believe both automation and the design of the MARC format make Latest Entry Cataloging a viable and cost effective option for Northwestern University Library.

CONVERSATIONAL MODE CICS

(The following is a Northwestern University Library Information Systems Development paper dated April 20, 1985. It addresses basic questions of NOTIS design.)

Since the first installation of NOTIS outside of Northwestern University (at the University of Florida) we have been hearing the question "Why isn't NOTIS pseudo-conversational?" This is not a simple question to answer, since an explanation involves not only the meaning of "pseudo-conversational" but an understanding of the inner workings of CICS. Like most matters of this kind, there is no black or white. Although IBM's party line is that everything (almost) should be pseudo-conversational, it should be remembered that their main business is still that of selling hardware. An intelligent choice involves the consideration of a number of factors about the function which is being performed and how it will be performed.

What does pseudo-conversational mean?

Most tasks which are performed by an interactive system such as NOTIS require several actions on the part of the terminal operator in order to complete a logical unit of work. For example the creation of a bibliographic record requires a request from the operator, the entering of data on one or more screens, a review of the data by the operator, and finally an indication by the operator that the process is complete and the record may be stored.

In a conversational system, a task is created by CICS at the beginning of this process, and remains in existence until the end. A pseudo-conversational approach, on the other hand, terminates the task each time a display is sent to the terminal operator, and creates a new task when a response is received. However, by somehow preserving essential information about the first task when it terminates, and recovering that information at the start of the second task, the process can be made invisible to the operator -- it appears to be conversational.

One major problem is preserving the status of a record being created or updated during the operator interaction. Although some simpler transaction processing systems may store the record after each intermediate step in this operation, the extensive validation required for bibliographic data, involving fields from different parts of the record, preclude this approach. Thus the incomplete record must be kept somewhere else until its processing is complete.

In a conversational system this record is simply left in the main storage work area in which it is being processed (but not in the input/output area which was used to read it from the database, since that would tie up extremely valuable resources). In a

pseudo-conversational system, the record either is placed in CICS temporary storage (which also may be part of the computer's main storage or may be auxiliary (DASD) storage), or it may be written to a work file defined by the application.

In either case it appears that the choice is between reserving 500-2000 bytes of main storage, or incurring the cost of I/O operations to DASD to write and later read back the data. In a virtual storage system, however, even data left in main storage may find its way to DASD by way of the operating system's paging mechanism, and it should be noted that this type of I/O is probably the most efficient in the whole computer system.

The CICS task also needs a relatively small amount of additional storage to preserve information about its current status. In a conversation mode, this is usually a part of the CICS Task Control Area (TCA) and Transaction Work Area (TWA). A pseudo-conversation task must save the same information using the CICS temporary storage facility or some equivalent.

In general the storage used by programs themselves does not enter into the choice, since they are in use by multiple tasks, and may very likely be defined as resident in main storage. However, because of the increased complexity of pseudo-conversational programming, such programs will generally be larger than conversational programs.

The situation is somewhat different with tasks which do not allow update of records, such as LUIS. In this case it is only necessary to preserve status information; the database information can be reread whenever it is needed. This type of processing is quite well suited to the pseudo-conversational approach, which is in fact used by LUIS.

Circulation charge/discharge functions represent a situation between the previous two examples. In most cases a charge or discharge can be completed in a single exchange with the terminal. The exceptions are cases in which the operator must override some block condition, but in these cases there has not been any update of the data base, so the records involved can be reread. Therefore the circulation charge/discharge functions in NOTIS also have been made pseudo-conversational.

Other considerations

When a record is under update from a terminal, some means must be used to prevent simultaneous update from another terminal. The most straightforward way to do this is to use the CICS enqueue/dequeue facilities, but an enqueue established for this purpose is not preserved by CICS when a task is pseudo-conversational. A pseudo-conversational system must find another way to accomplish the same function, while ensuring that a reservation on a records is not preserved indefinitely if the

operator decides not to finish the update or if the system crashes during the process.

Another consideration is that main storage might be held for a long period if an operator leaves the terminal while an update is in process. CICS provides a way to avoid this; in the Program Control Table a timeout interval can be specified, after which the task will be terminated by CICS if there is no activity. We have found that a 15 minute interval provides more than adequate "think" time, while still not blocking the use of system resources unnecessarily.

Another consideration in evaluating the use of system resources is the additional CICS overhead which results from creating and ending a task for each operator interaction during a pseudo-conversational mode of operation.

Perhaps the only real justification for forcing a complex database update task into a pseudo-conversational mode is if the available main storage is limited by the System/370 architecture. The maximum address space on a non-XA system is limited to 16 megabytes. On the system here at Northwestern, we have a machine defined with 8 megabytes of main storage, with about 3 megabytes allocated to the CICS partition. This serves approximately 150 terminals, with 30 or more tasks active at any one instant.

Since each active task performing a bibliographic update requires about 10K of storage (fewer than 1% require more than this), by going to the full 16 megabyte capability we could provide enough additional storage for another 800 simultaneous tasks, a 25-fold increase! (Of course a significant amount of storage would be required in the Terminal Control Table to define all of the necessary additional terminals.) It is hard to see how the storage requirements imposed by a conversational task such as this represent a serious limitation to many installations.

Finally, it must be emphasized that NOTIS programs are carefully designed to minimize the resources held during terminal interactions, both conversational and pseudo-conversational. No VSAM strings are ever held during these periods, and enqueues are used only when they are needed to preserve the integrity of the database. Our development organization understands how to use CICS effectively -- we cannot justify designing functions in ways which are not appropriate simply because other programming organizations find it difficult to enforce good practices in their operations.

BATCH PROCESSING OF OVERDUES

There is one batch program for circulation that needs to be run before active circulation begins for the day. This program processes overdues.

Dr. Aagaard recently made some changes to the program to (1) reduce greatly the time required, and (2) "close the loop" to assure patron delinquency based on too many overdues or unreturned recalls.

At Northwestern University Library the program is now averaging six minutes daily. On Mondays, when it does the work for the previous weekend, it takes fifteen minutes to process 300+ overdues.

We are very pleased with the performance.

CORRECTION: DISPLAYING HOLDINGS OF UNCATALOGED TITLES IN LUIS

Contrary to the report in NOTISEs (Number 3, page 2), the use of the "artificial p" was never implemented by the Serials Department at Northwestern. Instead, ISDO wrote a program which allows the display in LUIS of receipt statements from active order records for in-process multi-volume works where the copy status is either 2 or 3 and the class code is I. This program applies to both monographic and serial records.

Now LUIS users can see current receipts for in-process multi-volume works (monographic or serial) as well as current issues for periodicals.

NOTIS FILE SIZES

The NOTIS Office recently clarified the question of the maximum size of a bibliographic file. The Office learned from IBM that the maximum size of a VSAM file is 2 to the 32nd power. This means that NOTIS has the capacity for a bibliographic file of five million records, assuming an average of 800 characters of data. (Since indexes are separate files, they don't count for this calculation.)

TWO ENHANCEMENTS TO THE CIRCULATION SEARCH LIST

Effective at Northwestern on June 3, the following two enhancements were made to the circulation search list.

If an item charged to missing has a recall on it, this information will be printed. (A circulation department may wish to notify a patron that the item will not be available.)

If an item was charged to a patron at the time it was charged to missing, this "tracking information" will also appear on the search list.

NEWS FROM SUPPORT SERVICES

Roberta Kirby traveled to Vanderbilt University on May 8 for followup acquisitions and serials training. She was at Indiana State University from May 15 to May 17, training circulation staff. From May 22 to May 24 the DeKalb Library System worked on technical services training with Roberta.

Ben Burrows traveled to the State Library of Pennsylvania (May 6-9) and to the University of Evansville (May 15-17) for basic introductory training.

Peggy Steele asks that all of you who call the NOTIS Office please be patient when we ask you to repeat what you've said or to speak up. Not only is the Office in the process of moving to new quarters, but also the new telephone system at Northwestern continues to offer less than satisfactory long distance phone connections.

NEWS FROM SYSTEMS ENGINEERING

Jerry Specht and Randy Menakes installed NOTIS 4.0 at Vanderbilt from May 15 to May 17.

NEWS FROM MARKETING

Jane Burke demonstrated NOTIS at the University of Louisville on May 20 and May 21.

Jim Meyer demonstrated the system at Southeast Missouri State University on May 9, at Southeastern Louisiana University on May 16, and at Dutchess Community College in Poughkeepsie, New York, on May 24.

A number of libraries made site visits to Northwestern University Library during May.

The Library of Michigan was here on the 10th. Southeast Missouri visited May 14. McGill University was in Evanston May 15, and the University of Delaware was here May 21. Jim Corey from the University of Florida system visited Northwestern University Library on May 23 and May 24.

A NOTIS ANECDOTE

Bill Jones said he and Beverly Lynch and other library staff at the University of Illinois at Chicago met with about thirty chairs in humanities and social sciences to discuss NOTIS. The library staff mentioned the University's new online catalog, LUIS. The head of the French Department said he hoped it was as good as Northwestern University Library's online public catalog.

New electronic catalog system makes librarian's mouth water

Orrin Dow sat in front of the computer screen, salivating.

It was just before lunch and Orrin, the director of the White Plains Public Library, was thinking about food. He was also testing out the library's new electronic catalog. So he typed in the word, "cookery" on the screen.

Up came a list of 198 sub-headings under cookery. Orrin's eyes stopped at No. 30, "Louisiana."

"How about a nice shrimp gumbo?" said Orrin's salivary glands. He punched "30." Up came a list of five books on Creole cooking. Of these he selected No. 3. On the screen came the name of a book on the library shelves, "French Recipes, Past and Present."

Orrin didn't mention what he actually had for lunch, but he was full of news about the new system, which will replace the huge old card catalog at the library. It will list everything in the library, by title, author and subject.

"With the card catalog, seven or eight cards had to be prepared for every book," Orrin recalled. "Now, once an item is keyboarded everything is available."

Keyboarding the whole collection has taken four or five years. The entries were sent electronically to Dublin, Ohio, where a nationwide clearinghouse lists as many as 15 million titles in libraries across the country. It puts the White Plains entries into a standard bibliographic form and beams them back up here.

WILLIAM I. BOOKMAN

The new catalog will be reasonably user-friendly, although typing skills will be helpful. The first stage will be in operation by June 1, and will be kept current day by day. If books are lost or removed from circulation, it will take about 36 hours instead of months to remove all cards from the catalog.

By December the system will also be able to tell the library patron whether the book is actually on the shelf or in circulation. For the library staff it will also tell how many times the book has been renewed by its present borrower.

"We'll have a cut-off after a certain number of renewals," said Orrin. "There's one person in White Plains who's had a book out for three years and hasn't paid a single overdue fine — just keeps renewing it."

The whole local computer operation will be centered in the city's mainframe computer in City Hall, which seems to have almost infinite capacity.

We crossed the library on the futuristic walkways that bridge the library's reading rooms. In addition to the usual browsers and note-takers below, we saw a knot of people around the "Express" display.

"Those are the most popular current books," Orrin explained. "The idea actually began when I first came here in 1976. The library

had a very fine reference and research section, but I was constantly told by the community and the staff about complaints from general readers, particularly people who just wanted a book over the weekend. Some of them said they had to go to book stores for the purpose."

About two years ago, a speaker from New Jersey told about a rental unit in his library for readers who wanted the most popular books.

The library bought extra copies of best-sellers and those being featured on talk shows. All are circulated on a first-come-first-served basis for three days. Overdue fines are 25 cents a day, but readers can bring the book back after three days, and usually find another copy on the Express stand. Scarsdale and Yonkers are starting the service, Orrin said.

Last month the 460 books on the Express display were circulated a total of 1,066 times.

"Last month," Orrin said, "our total circulation of everything in the library was 51,633. That's 4,000 higher than any month in our history."

Why? The Express books, the videocassettes, and everyone was probably tired of winter. "It happens every March," said Orrin.

William I. Bookman is an editorial writer for Gannett Westchester Newspapers.

TWO FREE CIRCUS TICKETS!

