THE ONLINE CATALOGUE AND THE USER

LE CATALOGUE ORDINOLINGUE ET L'USAGER

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ABSTRACT

The next stage in the evolution of the library cataloque will be the development of online public access data bases providing increased data retrieval capabilities. Cataloques of this nature will be complex information systems whose considerable potential will be thwarted if the various means of user/system interface are designed without consideration and application of the end user's requirements.

RESUME

La prochaine étape dans l'évolution du catalogue des bibliothèques sera le développement de banques de données ordinolingues accessibles à tous et offrant des possibilités et des facilités de repérage accrues. De tels catalogues seront des systèmes d'information complexes dont le potentiel considérable pourra cependant être paralysé si l'interface système-usager est conçu sans tenir compte des besoins et des considérations de l'usager.

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The next stage in the evolution of the library catalogue will be the development of online public access data bases providing increased data retrieval capabilities. Catalogues of this nature will be complex information retrieval systems whose considerable potential will be thwarted if they are designed and implemented without consideration and application of the end user's needs and requirements. The data processing industry is keenly aware of the need to create systems which are "user friendly" and which improve the critical user/system interface. Although the library and information science community has always seen itself as responding to the requisites of the user, it has often created systems and procedures which substitute professional expediency and managerial ease for user desires and client needs. The service orientation, which is the philosophical backbone of the profession, must reassert itself and ensure the effective interaction between the client and the online catalogue. This interaction will be the critical factor in the success of the tool and will determine, to a considerable extent, the position of the library in the new information age. The introduction of the online catalogue will have far reaching implications for libraries. It is for this reason that the needs of the user must receive substantial attention if the online catalogue is to be spared the fate of the cumbersome, underutilized card and COM catalogues.

The revolution caused by the introduction of online bibliographic databases and their retrieval capabilities will be viewed as small indeed when compared to the potential of the online catalogue and its ability to act as a user friendly node linking its user to an expansive and valuable information network. The severe limitations imposed on the card and COM catalogues can be completely avoided with the new system. The number and diversity of access points can be expanded and, in the case of subject retrieval, the quality of that access can be vastly improved. Instead of being a static, unresponding tool, limited in its capabilities and constricted by its form, the online catalogue has considerably wider boundaries and a dynamism which can adjust and adapt to the changing information retrieval environment. With adequate feedback loops, the system could assess catalogue use and modify or be modified to suit current use models (Brenner, 1980). Such a situation is a classic tenet of system design and one which holds great benefits for both libraries and users. The distance between the card catalogue and the online libraries and users. The distance between the card catalogue and the online catalogue is so great that very little is likely to carry over form one to the other. In fact, we are dealing with a new means of thinking about information as well as a new means of delivering that information.

The most formidable opponent to the dynamic and fully developed online catalogue is the inherent conservatism of the profession. Tradition and past practice have an iron grip on the library catalogue. The second edition of the Anglo-American Cataloguing Rules (AACR 2), the structuring device of the traditional catalogue, is essentially responding to the needs of a library and information environment which existed 25, 50 or even 100 years ago, but does not exist today. AACR 2, like AACR 1 and the ALA rules before it, defines the parameters of the catalogue, establishes limitations, and generally forces the user to adopt conventions, terminology, information seeking patterns, and even results which are not suitable for his/her situation. The concern over AACR 2 which has run rampant in the profession for the past few years has been directed towards the wrong problem. The problem is not whether maps should enter under title or corporate main entry, the problem is not whether microforms should be catalogued as microforms of the material they copy, the problem is that once again the profession has severely restricted itself in terms of the rules of information description and retrieval. Worse than the embarrassing anachronism which it is, the new code is a considerable barrier and deterent to the expansion of library services. Even the MARC (Machine Readable Cataloguing) format perpetuates the concept of the main entry. The online catalogue can and should operate on structural rules and procedures completely outside th boundaries of the traditional catalogue rules and practices. The striving for national and international consistency and standardization can only serve to limit the usefulness of the online catalouge, and again alienate and frustrate the end user, the information seeking client. The catalogue has stood as a monument to user confusion for far too long. Freed of archaic conventions and codes, the online catalogue could present information is displays comfortable for tyhe user and in a manner which would be most useful.

The library and information science community must again stand back and reassess its role and activities in the area of catalogues and access to materials and re-evaluate and redesign its systems in response to the clientele. In this regard, catalogue use studies are valuless and library use studies are very limited. Even the current user studies being conducted on the few online catalogue which do exist are of questionable value since they are systems which generally offer the same procedures and capabilities of the card catalogue, albeit through a computer terminal (ARL Newsletter, 1981). The type of research which is most valuable is the analysis of information seeking behavior in different typesof clientele. Such work has occurred, but it has largely been ignored in the profession because the findings of those studies could not be incorporated into the predominate structure of the traditional library. With the online catalogue and its extensions, the rules of the game have significantly

changed and that research is highly applicable. Additional work in this area would be useful, but until then the data we have should be utilized in the formulation of the new sysem.

It follows from the foregoing discussion that the fundamental question for any library intending to implement an online catalogue is whether they propose to automate the card catalogue or develop aninformation retrieval system. This is not merely a terminological point, but a critical distinction concerning the philosophy and operaitonal capabilities of the system. To simply computerize the traditional catalogue, retaining its particular procedures, would be an approach typical of innovation in libraries, but it would dramatically reject the power of the online catalogue.

Access to a bibliogrpahic, monographic data base is not enough. It has never satisfied the clientele and it is less likely to do so in the future. What is needed is an integrated system incorporating not only references to all forms and types of materials, but also a system which permits the user direct access to remote data bases and other non-bibliographic files. Hence the emphasis must change to an information retrieval system in which the terminal mediates between the users and the wide variety of sources which are able to satisfy their particular information needs. Citation retrieval will still be a large feature of the catalogue, but document retrieval and question/answer subsystems should also be developed to respond to the fact seeking needs of the clientele.

The fragmentation of information access tools, which is typical of nearly all library situations, is not beneficial to the user. Information seeking behavior should not be regulated by whether the client's required information is located in a book, journal, map or whethe rits principle concern is social science, pure science or bibliography. Information is not bound by form and as a direct result libraries should not categorize and divide materials and access to those materials by form.

The tendency to perpetuate the card catalogue in the automated environment is stronger that one might think. An experimental system at the National Library of Medicine exactly reproduces a 3" x 5" catalogue card format on a terminal screen! The only thing missing is the hole on the bottom! At Northwestern University all the public access terminals are located together in the basement with the old card catalogue instead of being distributed throughout the library for the convenience of the user. In fact, most of the online public access systems I have encountered display the bibliogrpahic data in International Standard Book Description (ISBD) format. This is a format which I suspect even many in this room are largely unfamiliar with and certainly a format virtually unknown to the

general user. When a display format with descriptive tags would be far more valuable and comprehendable, the perpetuation of ISBD illustrates the mental barrier the card catalogue holds around the profession and hwich we must earnestly seek to overcome. Referring to the system I have proposed as an online catalogue is probably detrimental to its purpose since it equates the system with the traditional catalogue. It would be more useful to refer to it as a library information system thereby not restricting the scope or potential of the tool.

This change in the orientation of the library catalogue probably signals its reduction as a tool of pure bibliographic description. Already a visible trend, this shift has disturbed the traditional library community and will probably receive opposition frcm certain academic circles. In an age of information overload, however, the role of the catalogue should be less focused on physical descriptions of the materials. The expansion of access points and the ability to sift and manipulate data will be the key facets of the catalogue and the primary requirements of the users.

In an article describing ELMS (Experimental Library Management System), the prototype of DOBIS, McAllister and Bellprovided an important insight into the design of the user/system interaction:

> In effect, the displays and procedures are a limited language through which a user may communicate with the system. If command and display formats are consistent, then the syntax of the communication language has no exceptions and is easy to learn. As they become less consistent, the user must learn and remember more exceptions; the grammar of the communication language becomes highly irregular and difficult to learn (McAllister, 1971).

One could say that the failure of the card catalogue is due, in part, to the breakdown of its rules and procedures resulting in a system and a communication language which are not apparent and predictable to the user. While it is important that the online catalogue be created with structures and procedures sophisticated enough to permit utilization of the full capabilities, the online catalogue must retain a consistency and homogeneity of display and presentation which will provide the user with a familiar and easy to use tool. If, as has been the fate of the card catalogue, the online version is referred to as a "librarian's tool" then the design would have failed. Such a failure would be directly attributable to a lack of consideration for the needs of the end user.

This insistence on consistency should not be interpreted as a call for national or international standardization of displays and procedures. The Research Libraries Group has made recent moves towards this direction (Research Libraries Group, Inc., 1980). This is a premature step which is potentially detrimental to the full exploration of the system features. Terminological differences aside, libraries must be able to respond to the particular requirements of their local users. This mandate must shape the local online catalogue and not the irrepressable desire in librarianship to regulate and standardize all aspects of the profession.

Philosophies of interface methodology group around two particular techniques: menu driven and command driven modules. In a system which will be utilized by a wide ranging clientele with various levels of sophistication, the menu procedure would seem to be the ost advantageous. It guides the user very deliberately from operation to operation presenting possible options and requiring limited responses. Such a dialogue is undoubtedly the easiest to use and the fastest to learn. A well designed version can be virtually self-instructional.

The menu driven techniques, for all their advantages, are not always the most desirable. Academic and special libraries will not want to sacrifice the power of the system by strapping it to a bulky, slow and relatively unspecific operational method. The alternative is to place control in the hands of the user and allow access to a command language which will perform specific tasks in response to specific commands. Powerful command languages, while releasing the capabilities of the system, also require user education at a level and to an extent which may be impractical for a large clientele. A professional intermediary familiar with the language and available to interpret the user's needs is only a partial solution, and one hwich perpetuates the undesirable division of the users and the means to satisfy their information needs. The online catalogue must reduce barriers and not introduce new ones.

Obviously the most acceptable solution is to permit access by a variety of levels of sophistication. This would allow the user to approach the catalogue at a level which is most suitable and comfortable, and yet it would not penalize those who require a more complex system response. Menus and command driven techniques could easily be supported and operate in complete harmony.

The user/system communication langugae and method, while an important aspect of the critical interface, is only one of many considerations. The selection of an appropriate terminal is also a cruucial decision. An imposing and complex CRT and keyboard places an immediate barrier between the system and user,

and yet such complexity may be necessary to fully exploit the catalogue. Certainly the touch sensitive screens currently available reduce at least in part that barrier, but they also preclude any substantive interface between the user and the data base. Even with a generation supposedly at ease with computers et al., libraries have encountered alienation caused by the mere presence of a terminal or by facets of its operation (Herndon, 1979).

To speak of the user/system interface is really to speak of the environment in which that dialogue occurs. In order to ensure the success of the process, all components in that environment must contribute to the effective utilization of the system. As such McAllister and Bell's comments should be extended to cover a much larger area of consideration than merely communication language. The whole context of information seeking in libraries is open for reassessment and adjustment.

Library orientation and instruction, whether it be a formal program or a one-to-one situation, occupies a prominent position in most library operations. The recent proliferation of publications in this area testifies to the importance of instruction, but it also points towards a growing awareness of the failure of past performance. Educating the library user allows him/her to become independent inthe library environment permitting easier and quicker access to the materials and relieving staff of largely repetative and unnecessary instruction. The capability of the online system to incorporate some form of computer-assisted-instruction (CAI) or online tutorial help is a major feature of the system. A CAI module linked to the online catalogue could easily serve as a guide to the users, regardles sof their level of system use, providing step by step instruction and interpretation. Much research has been accomplished in this area in the educational field. It would not require extensive adaptation to install such a system or component in the library environment. As remote terminal access to the library data base becomes more and more common, and users are therefore physically separated fromthe staff who could aid them, the need for a self-teaching and instructional package becomes increasingly apparent.

This raises a key problem relating to design and hardware considerations. It is obvious from a hardware perspective that a greater amount of processing power will be given over to communication between the user and the system. The striving for machine efficiency, speed and low cost has often sacrificed the implementation of useful but processor demanding interface modules or teaching packages. No longer can these subsystems be seen as secondary or peripheral or in any way less important than the routines which actually manipulate and retrieve the data. As hardware speeds increase adn storage costs decline, libraries

hsould be aware of the ability of the system to devote more and more of its resources to the problem of the user/system interfce.

Theu sefulness of CAI modules have been proven inthe field. Their application to certain types of problems and situations is unquestioned. Given the generally dismal use of the card and COM catalogues by library users largely because of their inability to understand the nature and operation of the catalogue, it is important that the new catalogue incorporate techniques which will guide users and answer, immediately, questions they might have. The whole area of artificial intelligence is raised as a possible application to the information retrieval process. Again, the key point remains, we must adapt to the users. As past experience has shown, they do not adapt well to us.

The dilemma put simply is, at the same time we make the online catalogue a more complex and sophisticated information retrieval tool we must also make the searching and usingprocedures more simple to operate and easier to understand. To fail in the first area would be to seriously underutilize the technology, but to fail in the second area would significantly impede the user. One of the central misconceptions has been that as information resources expand,t he access to that information must necessarily become increasinglymore difficult. THis condition is only apparent in the information environment because, to a certain extent, the profession has often rejected simplicity for a level of complexity which is intended to reflect a largely unearned sense of professionalism, knowledge and power.

In conclusion I am reminded of a paper delivered to this association just two years ago by R. Bregzis and G.Wright. The presentation, entitled "What Happened to the Technological Innovation in Libraries?" (Bregzis, 1979), stressed the need for the library community to fully exploit the potential of the new technology available to them. If nothing else I would only add that the online catalogue is a marvelous means to implement tremendous and beneficial innovations, if, and only if, it is done so in consort with the end user.

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