Users and librarians:
two communities dissociated by practice but bound by common interests: the experience with *Visual… Catalog*

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Abstract

The survey started by our multidisciplinary research team in 2003 in the Bibliothèque de l'Université Paris 8 addressed the integration of information and communication technologies (ICT) in social settings from a different perspective, beyond approaches focused on technophily or technophobia. Focusing on the Web interface of the library's OPAC, it seems that if people use ICT properly, with regard to social positions, then this technology can contribute to increasing a constructive synergy between librarians and users. In this context, and with the pretext of a technological solution, the experience with *Visual… Catalog* raises questions as to allocation and transmission of knowledge in a global and almost philosophical framework of acquisition, processing and accessibility of knowledge in the Information Society.

Keywords

Visual… Catalog, online catalogues, information use, information literacy, hypertext, information society, Université Paris 8

1 Hypertext, ICT and academic Library: about accessibility

The research work underlying this paper converges in three domains: Hypertext (concept, systems and user interaction) (Acm 1988; Clément 1995; Giffard 1997; Piotrowsky 2004), Information and Communication Technologies (ICT), and university libraries. These domains differ in many ways but overlap today in the paradigm of Information and Knowledge Society.

The *Visual… Catalog* system refers to a research work[1] – in progress and ongoing since December 2003 – led by a multidisciplinary scientific group (Information Science, Psychology-Ergonomics, Didactic of Math-

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1. <http://visualcatalog.univ-paris8.fr/>

ematics, Geography-Cartography) collaborating closely with the University Paris 8 library's staff.[2]

The central aim of this research relates to a proposal of technological remediation for bibliographical database consultation (OPAC) based on information accessibility and the skills and expertise of the librarians.

1.1 Previous work

This current work depends on the scientific results of past works undertaken over a period of ten years – promoting an Information Sciences approach – on Hypertext concepts, hypertextualisation process, information seeking, web browsing and finally the adaptability of aggregative digital contents intended for information intelligence and E-learning (PAPY, 1991, 1993, 2004; BALPE 1996).

These previous works fall within the general scope of Hypertext as considered by V. Bush (*Memex*), T. Nelson (*Xanadu*) and D. Engelbart (NLS/*Augment*). Our preliminary research stressed the spectacular character of Hypertext that, in socio-professional and characteristic cognitive contexts where users are familiar with the information environment, offers a considerable alternative to the restricting mechanisms of computerized data processing (PAPY 1995; LE QUELLEC 1998).

Hypertext proposes another relationship to information and the World Wide Web is its most direct heir: reducing technical expression to invisible mechanisms and assisting associations. Our work is followed by some empirical results on the drawbacks of hypertext browsing that users unfamiliar with hypertext networks encounter (particularly disorientation and cognitive overload) (BROWN 1989; CASTELLI 1996; DINET 2001).

Of course, there is no question of refuting the inherent advantages in hypertext browsing which offers a major reconfiguration of the access modes of little structured electronic information. Nevertheless, there is no question of covering the gap that separates the production, organization and appropriation of knowledge world from the one that relates to their accessibility. The new form of techno-scientific magic (search engines, directories, automatic categorizers, cartographic systems, adaptive agents…), carried by the spectacular inferential processes of ICT tend to deceive us, whereby the overall meaning of this endemic and unorganised production of documents has to be questioned. So, data processing technologies, hereafter, are the unavoidable and powerful tools for restoring order in the billion documents of the World Wide Web (FLICHY 2000; FOENIX-RIOU 2000).

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2. Université Paris 8 issues 150 national grades. Our university, specialized in Arts, Law, Social and Human Sciences, has 27,000 students and 850 teachers (the library: 90 librarians, 320,000 documents, surface area 15,000 m2)

2 THE UNIVERSITY LIBRARY: A COMPLEX MULTIDIMENSIONAL PLACE

The mission of university libraries is to make their resources available and useful for higher education teachers and students (JOLLY 2001; CHARTE 1991).

These physical, digitalized, digital and institutional information spaces, rebuilt by technological mediation and conceived to promote accessibility (AROT 2002; JOLLY 2001), offer generic models of knowledge organization, which the classifications materialize (Dewey, UDC, Bliss, LCC, etc.). Even if they may be regarded as adequate, complex, practical, evolutionary, questionable, unsuited, etc., none of these classifications can claim to have achieved unanimity. Nevertheless, in spite of their imperfections, libraries cannot exist without some type of classification (JACOB 2001; HUNTER 2000).

The structured and rational organization underpinned by classifications aim to universalise knowledge. The classifications eventually produce a decontextualised approach to knowledge. Moreover, this classification, while it does not polarise librarians' activity (user training and services), represents an important part of library activities, and materializes the appropriateness of the library with the students' courses and the researchers' scientific activities.

Through common Web interfaces (in particular Web OPAC), it is nothing else than the UNIMARC data structures, classifications (LCC, Dewey, UDC,…), *Rameau*,[3] which can suddenly be appreciated by completely incompetent users. In fact, the so-called accessibility promised by ICT highlights the existence of two juxtaposed communities: on the one hand, users who seek information but are not concerned by the requirements and problems of libraries, and on the other, librarians involved in professional requirements (acquisition, cataloguing, borrowing, etc.). The promise of gap filling conveyed by ICT is not obvious in the way that the computerization of university libraries is done today.

On the contrary, ICT destined for users reveals both the differences and specificities in these two communities: one comprised of clearly defined professional missions; on the other of users, less defined and which gathers together educators, researchers, students, postgraduates with various profiles, multiple expectations and different intellectual affiliations (COULON 1997; LE COADIC 2001). Very rapidly, users are faced with their misunderstanding of the complex organization of library and conversely, while librarian participate in organizations traditionally intended for ideal users (LE MAREC 2003). The assessment of effectiveness shows that a subtle mixture may improve quality: a better understanding of library mechanisms by users and greater accessibility to the expertise of its professionals.

Regardless of the research tasks pertaining to the virtual communities appearing within the framework of telework, of mobile work or e learning, using the word *community* seemed to be more appropriate for the re-

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3. Répertoire d'Autorité-Matière Encyclopédique Alphabétique Unifié.

ality described here. We preferred this term to the word *group*, which seemed too limiting and too far removed from the idea of social cohesion. In a same way, the word «collective» did not seem appropriate, because it relates to a very specific engagement of the user. We wish to keep the structural feature of the word *community*, which suggests strong social concepts (HARVEY 1995, 2001; DUBEY 2001; CASTELLS 1998; CABIN 1993).

2.1 The library: a knowledge place, a librarians' space

Nevertheless, libraries, in spite of the technical accessibility introduced by ICT, remain extremely specialized places where librarian activities translate and reflect organization and communication methods, contexts, physical objects, mental representations, procedures, and systems of values (POLITY 2001). The library seems much more a place of contradiction where the organization in place strives to develop, to preserve, a rational knowledge organization which is almost an ideal knowledge for a public that is (frequently) unaware of its requirements and subtleties.

Thus, the university library appears to be a neat space cyclically altered by the very people who make use of it. An ideal user who knows the place, and whose expertise enables him to make good use of the library's fastidious organization, without affecting its order or the way it operates, is highly improbable. This ideal model of the expert user remains highly anecdotic and yields to the more common model of the neophyte user with basic needs such as locating a document and its availability. This gap, which separates the effective user's abilities and his assumed skills, is confirmed by some studies (LE MAREC 2003; COULON 1997).

2.2 Library, computerization and ICT

The computerization of libraries initiated by computerized catalogues thirty years ago (LUPOVICI 2001) follows through with ICT largely Web- and Hypertext-inspired integration. These digital technologies influence pre-access to the physical and electronic resources that comprise the hybrid collections of today's libraries. This instrumentalised and digital penetration in the world of libraries was implemented without any determining study effectively showing that ICT improve subjects' cognitive activity. On the contrary, it must be noted that confusion and cognitive overload inevitably occur in even the most experienced users (GASTÉ 2001; TRICOT 1998). In this regard, one can only regret, in France, the lack of assessment methods of user paradigm related to the Retrieval Information System (RIS) (CHAUDIRON 2002; IHADJADENE 2001).

This immediate proposal of ICT in the organized universe of libraries may appear to fit into a planned computerization approach. However, the ICT proposal considerably modifies the parameters of the initial computerization program: from a logic of modernization of professional activities, it is the «automation» of user information retrieval practice that is initiated.

Public Online Access Catalog (OPAC) and their Web variants illustrate precisely this technological shift from the professional towards the user.

The online catalogue is simply a recombination of the professional data arising from these software packages, for which the only authorized adaptation consists of making certain information invisible to users. The data relating to acquisition or cataloguing reflect a great deal of information produced by librarians for librarians, organized in data structures worked out by librarians.

The online catalogue accessible inside AND outside the library constitutes a focal point and the library «synecdoche». While querying, the online catalogue focuses on users' information needs. While waiting for the system to answer the query, the user tries to reconcile his research targets, the technical mediation imposed by the interface and the modes of knowledge organization in the library (often imagined, frequently misunderstood).

In fact, this catalogue represents a no man's land, an area of contact between two communities controlled by quite distinct objectives, and social, cultural and cognitive rules. Developed by companies, these systems are above all computerized projects providing access to the resources proposed by the library, removed from any socio-informational context (CHAUVIN 2004; ROY 2003).

Querying the interface of the Web OPAC with an author's name («Pierre Lévy») illustrates the shift effects of professional knowledge that technological artifactualisation brings vis-à-vis users. However, this professional knowledge really takes place in an environment, contexts, implications, training, individual, collective and institutional choices which only preserve their meanings within a specific framework, mainly in their professional dimension.

3 THE GENESIS OF THE *VISUAL… CATALOG* RESEARCH PROJECT AND HYPOTHESIS

The assumption we formulated at the beginning of this research project draws, on the one hand, from our former work on hypertext and, on the other, from teaching information retrieval methodology under the angle of the students' intellectual affiliation (COULON 1997, 1999).

3.1 Success and student intellectual affiliation

On this second point, it appears that student success certainly lies in their intellectual investment, but also in the implicit appropriation that goes with each course. Bibliographical work, and more generally information retrieval – which replace the university library as a determining device in this process of intellectual affiliation, becomes a major activity in the university and intellectual success of the student.

Among the lines of this relationship to the intellectual affiliation and the learning of the student, the intrinsic activity of information retrieval demands specific requirements:

— critical analysis of information (especially since the Web offers the best and the worst!)
— student cognitive positioning (are they able to adapt knowledge by themselves?).

3.2 The University Library: a determining place for intellectual affiliation

The library, considered this time from the perspective of the librarian's developed skills and expertises —frequently ignored by users— implies a voluntary approach of coherence and global meaning, according to complex relationships of logical presupposition, genealogy, complementariness and mutual clarification bring in another dimension beyond the mere accumulation of resources (JACOB 2001).

Following the Web example, the library is not only an ensemble of different files prone to evanescence, it represents, beyond its missions of preservation, storage and processing, a privileged place for the conduct of intellectual work. It is the place where builds and progresses the thought of the individual who managed to adapt this place of rules and organization intended for his use.

These considerations entail a use of ICT in the sense that they can only be the consequence of observations and analysis of information requirements in circumstances where the intellectual and organisational environments as well as the objectives of users are known. It is not a question of developing self-proclaimed technical logics based on user models (the user paradigm) in a rupture from the reality of information practices (novice, expert users) but rather of proposing technical improvements, without forgetting that «le système de pertinence d'un individu est un état psychologique de prédisposition mettant en cause le cognitif, l'affectif, le perceptif et le comportemental. Il est en fonction de l'ensemble des problèmes spécifiques qui préoccupent l'individu, des projets qu'il a, qui forment son orientation de vie au moment où on le considère».[4]

From use to the appropriation of artefacts, the individual's activity is a development where dimensions of reaching goals and the realization of productive activity tasks are articulated with dimensions of development of external and internal resources of the constructive activity. Productive and constructive activity are the two faces of human activity which become enriched and change reciprocally: a difficulty encountered in the productive level will be able to give rise to resource development in the constructive plan, which in return will modify the forms and conditions of productive activities.

It is a crossroads where we formulated the hypothesis of the development of a real technological mediator, a transit area among the community of librarians and that of the users, conducive to intellectual meetings which promote a constructive synergy for the different actors.

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4. MUCCHIELLI, A. *Les Sciences de l'Information et de la Communication*. 3e éd. Paris: Hachette, 2001.

The observation of users' and library staff's behaviour by our ergonomists colleagues, our teaching on information retrieval methodology and the installation of interactive kiosks dedicated to the use of the *Visual… Catalog* within the library centre are the strong points of this research task.

4 THE *VISUAL… CATALOG*: INTERFACE FOR «READING», INTERFACE FOR «LOOKING»

With the *Visual… Catalog*, even beyond the device's technical expression, we tried to make explicit and concurrent these various facets which take part on research and resource processing within the library. Rather than provide a truncated vision of the methodological needs inherent in any search for information, even with the risk of «cognitively saturating» the user, we resolutely maintained the expression of these different points at immediate disposal of readability / visibility of the user (cf. fig. 1).
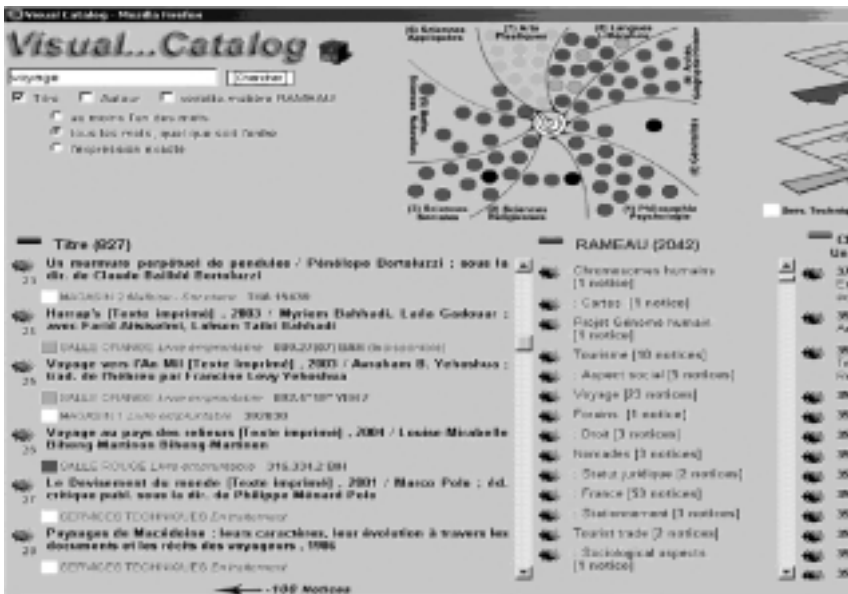

FIGURE 1. The Interface of the *Visual… Catalog*: accessible from an Internet browser

Thus, at the end of a query that the user sends to one or the other of the three fields: title, author or *Rameau* authority headings, he obtains five groups of interdependent information: two dynamic charts and three textual lists:

— a list of the work titles answering the request (cf. fig. 2);
— a cumulative *Rameau* list (extraction of the notes associated with each catalogue entry) (cf. fig. 3);

— a list of classifications (UDC) concerned with the request (extracted from the classification mark) (cf. fig. 4);
— a synoptic chart of the position of the documents in the library, (cf. fig. 5);
— a metaphorical graphic synthesis illustrating the disciplinary areas concerned with the results of research and the degree of specialization (cf. fig. 5).

The 3 textual lists (*Title*, *Rameau* and UDC) are interdependent and connected *one to two*: for example, an element selection of the *Title* list dynamically regenerates *Rameau* and UDC lists (cf. fig. 6). The hypertext is introduced here, the user will be able to obtain, for each work, each *Rameau* authority heading or each UDC class, a kind of dynamic and selective «*focus in context*», making it possible to associate, on the one hand, and for each title, a list of terms (*Rameau* authority headings) that is more explicit than the title alone, and, on the other hand, the intellectual area (UDC subdivision) in which the title was allocated by the librarian. Knowledge of *Rameau* authority heading will make it possible to locate the document in a family of works described with «controlled» terms within an UDC class. Selection of a title, *Rameau* term or an UDC class only makes visible corresponding elements in the two other lists.

FIGURA 2. The *Title* list. This result is obtained after the word «propagande» was keyed into the *Rameau* input field. The icon, out of the title, makes it possible to highlight the corresponding *Rameau* and UCD. Work title, reading-room, classification mark and availability of each copy are proposed immediately to the user
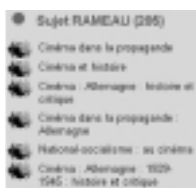

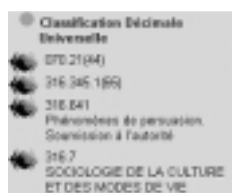**FIGURE 3.** The *Rameau* authority headings list obtained from the *Title* list

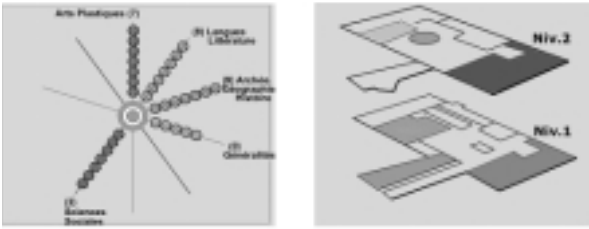**FIGURE 4.** The UDC list is obtained from the *Title* list

FIGURE 5. The image on the left represents the synthesis of generic disciplinary divisions (UDC) concerned by the query. The cartographic representation gives the reading-rooms where the documents are physically located

FIGURE 6. Synoptic of the interdependences among the three lists. This figure illustrates the principle of dependence «one to two»: *Rameau* → (*Title*, UDC), *Title* → (*Rameau*, UDC) and finally UDC → (*Rameau*, *Title*)

6 CONCLUSION

The generalization of Digital Library services, which invariably come from online catalogues that grow every day (SUDOC[5] proposes more than 5 million references, BNF[6] more than 7 million), provides increasingly more widespread access to forms of knowledge organization that is truly complex compared to the immensity of the task. This systematic software automation of information systems induced by ICT from the Web is presented as «self-explanatory», while technical handling depends on the underlying intellectual skills. It should not be forgotten that these information systems are ultimately the ingredients of a long and demanding process of transformation, comprehension and self-knowledge of individuals; of his fellows, and of systems – whatever they may be – in which they evolve by choice or constraint. With this intention, and besides any technological consideration, the individual's capacity to perceive and ideally appropriate this information, is far from being acquired. It rests on skills, strategies, know-how which every person must adapt and draw in the course of social, cultural and cognitive experiences, that he is bound to live.

5. Système Universitaire de DOCumentation.
6. Bibliothèque Nationale de France.

The digital capitalization of these invaluable experiments by means of automatic systems is likely to quickly become inaccessible for the majority if the instrumental dimension of these systems continues to be regarded as the only factor of promotion.

Indeed, human knowledge preserved through logics dedicated to automation and procedurality, structured by technological requirements, will quickly prove to be unusable for those who are least familiar with artifactual logic.

Such challenges impose that ways of balance are open or preserved so that the social mediation related to the information situations, often absent because of improbable representations, might not be subject to the crushing technical mediation.

In this sense, the *Visual… Catalog*, is not only a new release of an information processing system specialized in bibliographic data, it fits truly into a process of instrumentalised social mediation. Indeed, supporting the communication between the two aforementioned communities constitutes the real challenge, on the one hand, of the appropriation of places and their operating requirements by the user, and on the other hand, a real realisation of the user needs by instrumentalised library professionals. In collaboration with the university Paris 8 library, and inspired by the work of Alain Coulon work relating to intellectual affiliation and the appropriation of intellectual skills, we developed a «linking device» which we think will support communication between the two communities. The experiment will enable us to validate not only the formulated assumption, but also confirm the need for a social extension to the technical device that we worked out. If the results are convincing, a reconfiguration of the data-processing proposals inspired primarily by a technological determinism will need to be to reconsidered and to reoriented towards an instrumentalised and socialized accessibility.

Acknowledgements

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