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Use of Electronic Information Services in the Library of King Abdulaziz University

by

Mohammed Ahmed Basager

A Master's Dissertation, submitted
in partial fulfilment of the
requirement for the award of the
Master of Science degree of the
Loughborough University of Technology

September 1993

Supervisor : Professor A.J. Meadows

Department of Information and

Library Studies

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DEDICATION

I dedicate this research to my father and my mother for their unlimited and continual moral support, to my wife and my son, Ahmed, for their sacrifices and patience throughout my study, and to my brothers and sisters for their encouragement.

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Finally, my thanks to the person who typed this dissertation, Mrs Helen Hockedy.

ABBREVIATION

Aramco	Arabian American Oil Company
BITNET	Because It Is Time Network
BL	British Library
BLDSC	British Library Document Supply Centre
CD-ROM	Compact Disk Read Only Memory
GCC	Gulf Cooperation Council
IPA	Institute of Public Administration
ISBN	International Standard Book Number
ISSN	International Standard Serial Number
JANET	The Joint Academic Network
KAAU	King Abdulaziz University
KACST	King Abdulaziz City for Science and Technology
KFUPM	King Fahad University for Petroleum and Minerals
KSU	King Saud University
LC	Library of Congress
LCSH	Library of Congress Subject Headings
LDCs	Less Developed Countries
NLM	National Library of Medicine
OPAC	Online Public Access Catalogue
R&D	Research and Development
UQU	University of Umm Al-Qura

ABSTRACT

The aim of this study was to investigate the satisfaction of academic staff users with the Online Public Access Catalogue (OPAC) and Compact Disk Read Only Memory (CD-ROM) services in the central library of King Abdulaziz University, Jeddah, S.A., to investigate the existing status of the card catalogue, to identify the problems and difficulties being faced by academic staff, and to suggest ways and means for developing electronic technology in the library.

The literature review survey on OPACs is presented as an overview using OPAC and what difficulties and problems occur when the system is used. Also, the survey represented OPAC user needs and the degree of satisfaction for users with OPAC.

The third chapter studies the electronic information services in Saudi Arabia and how these services have developed generally in Saudi Arabia and particularly in King Abdulaziz University Library. Also this chapter concentrates on the important relevant institutions and how the leaders are in this field.

From the results of the questionnaire survey it is seen that younger staff and more recent graduates used OPAC considerably more than older staff. Only

about one third of staff used CD-ROM and about half OPAC, and of the latter most also need the card catalogue.

An attempt has been made to identify the importance of electronic information at the King Abdulaziz University and the difficulties the library has faced in this field, and finally suggestions have been made for overcoming these difficulties.

CHAPTER 1

1.1 Introduction

Electronic information services have dramatically increased during the last two decades. The academic communities get benefits from that development. King Abdulaziz University (KAAU) library introduced these services to the university community in 1989. The services have not been evaluated before. This study will evaluate the electronic services of the main library of KAAU to identify the problems and difficulties which might discourage users from using these services.

1.2 Aims and Objectives

The purpose of this study is:

(1) to investigate the satisfaction of academic staff users with the information services of the central library of the King Abdulaziz University (KAAU);

(2) to investigate the users' satisfaction with the OPAC and CD-ROM services and to investigate the existing status of the card catalogue;

(3) to suggest ways and means for the development of the information services in the library.

1.3 Scope and Limitation

King Abdulaziz University Library system has a central library and ten faculty libraries. Among them the central library is responsible for providing materials and technical services to all of its branches. It maintains a union catalogue for all libraries. It provides online and CD-ROM services. The users of the central library are drawn from all faculties. Therefore, the scope of this study is limited to the central library only.

The present investigation was conducted within a very limited period of time. Therefore, it was not possible to concentrate both on academic staff and students. Thus, the emphasis of this study will be on the online and CD-ROM services which are provided to the faculty members only, especially to facilitate research in databases and also to encourage the academic staff to produce more research in their relevant fields.

1.4 Methodology

In order to collect the data both interviews and questionnaires were used. The interviews were conducted with library staff while the questionnaires were distributed to academic staff.

I selected the questionnaire approach because of the large number of academic staff from whom to obtain information. An interview is not suitable to

cover all of them due to lack of time, my lack of experience in interviewing and cost. Questionnaires give as much data as is needed.

The intention of the first part of the questionnaire was to get background information. The second part was to identify the experience with computers. The third part was to identify how the academic staff deal with OPAC, e.g. whether the material was read on screen. The fourth part embraces use of the CD-ROM and the quantity of information obtained from it (appendix 1).

A questionnaire was distributed among the academic staff of the university. The questionnaire attempted to focus on (1) the frequency of use of the library, (2) extent of use of the library tools in the form of the card catalogue, online and CD-ROM by academic staff, (3) users' attitudes (4) level of satisfaction, (5) users' needs.

The questionnaire to academic staff was made as concise as possible to avoid the frequent frustration which occurs when teachers read a long questionnaire. It was about three and a half pages long. A pilot study had been made to look for any problem in the questionnaire whether in the language or elsewhere. As a result of the pilot study, one question was unclear at first for a few teachers who did not understand the meaning of the abbreviation OPAC. I collected 127 questionnaires from academic staff out of a distribution of approximately 200 forms.

I first concentrated on teachers who used the central library, but I found that not all teachers used the central library. The reason for this is that all the branch libraries are already connected with the OPAC at the central library (except three - Marine Science, Meteorology and Earth Science). So I also distributed the questionnaires to teachers who used branch libraries.

The library staff were interviewed to find out the existing status of the information services, on-going and future plans for further development of such services and the attitude of the staff towards the development of information services in the library.

I interviewed the Vice Dean of the library who is responsible for the installation of the program and its development. Also heads of sections were interviewed by way of written questions to collect specific information which cannot be obtained by questionnaire and to identify the existing problems in the library and how they would suggest that the problems should be solved. I discussed every section with some experienced staff to make a comparison between their responses and those of the heads of sections to identify the differences of viewpoints between them.

The interviews concentrated on the problems which the library is facing and how to solve them, and in addition on knowing what is the future plan for CD-ROM (appendix 2).

The result of the interviews and questionnaires thus collected will be analyzed in Chapter 4.

1.5 Literature Review

The impact of library automation between the mid-1960's and the mid-1970's [1] was on faster processing, increased storage capability and decreasing hardware price. As Slack and Wood [2] have stated, "the first OPACs were introduced into academic libraries in about 1982. In 1988 50 percent of British University and Polytechnic libraries had operational OPACs; by June 1990 58 OPACs could be accessed on JANET (The Joint Academic Network)". Earlier online library systems in the late 1960's were based on a large third-generation computer shared between several users and located outside the user libraries in a centralized data processing facility. Second-generation systems were usually not capable of timesharing but processed one job before starting the next. In third-generation systems, although the computer still performed one task at a time, it could handle several jobs together and do tasks so quickly that it appeared to each user that the computer was working exclusively on their programs, files and commands [3].

Slack and Wood [4] mentioned in their article subject searching on OPAC, which they said is an important and, at the same time, very difficult area, especially when the users are searching for corporate names, conferences, titles, or a complex

subject. Researchers will be encouraged to use CD-ROMs because these contain more detailed information.

Ensor [5] in his survey on keyword searching in an OPAC found that, in November 1982, a survey by Joseph Matthews indicated that 45% of the searching on Mankato State University catalogue was keyword searching as compared to about 19% subject heading searching. In 1983, 80% of researchers at Bell Laboratories used keyword. In the University of Houston, University Park, Carolyn Frost found that 27.5% of the faculty used keyword searching. In the United Kingdom, 51% of users prefer keyword modes to browsing.

According to Slack's [6] paper there are problems in subject searching on an OPAC. These occur when the OPAC system requests the user to check the spelling, when a student chooses the appropriate option from the menu screen, and when a student retrieves the target records for searches using personal or corporate names as subject terms. Subject headings are quite difficult for students because they are not used to making requests in accordance with the nomenclature of subject headings, and also very few OPACs have online subject indices and no British OPAC has an online thesaurus. Narrowing the search and coping with search results which produce a large number of references are not sufficiently dealt with by the help system.

Peters [7] mentioned in his article that users do not fully employ the advanced features of the online catalogue. It seems that 97.2 percent usually make author, title or subject searches. Only 2.8 percent of the searchers used such features as series searching, boolean operation and call number browsing, and also most users

do not use transactions as a way to increase recall. There are some problems usually found in the use of OPAC in every library, such as spelling errors. Peters' data indicates that over 20 percent of all problems are caused by typographical errors and misspelling.

Some studies focus on the OPAC users' needs. Nobel and O'Connor [8] mention in their article the general acceptance of computer technology, as well as user attitudes towards OPACs. According to them, the reluctant OPAC user needs to be more properly understood. If OPAC success is to be continued, computer literacy needs to be closely examined. MITEV [9], in her article, concentrates on the principle underlying user interface design for OPACs. The article mentions the ease of using OPACs, whether in communication or in searching. "OPACs are to help a large range of non-professional users to express their information needs as freely as possible and to gain something from communicating with the catalogue, without having to learn any complex interface/search mechanics".

An article by Shives and Olszak [10] embraces what our screen should look like to be effective. They discussed the physical screen and general principles, menus, commands, enquiry screens, and messages and, finally, organisational considerations. This article is important for librarians and users to be aware of some of the most basic principles involved in achieving effective screen design.

Scharf and Ward [11] mentioned in their article that the University of Central Florida (UCF) had two programs. LUIS was for the library catalogue, while CLSI

was for the library's circulation system. LUIS was found satisfactory or very satisfactory by 79 percent, while 52 percent felt the same way about CLSI. More significant was the difference in dissatisfaction. LUIS was unsatisfactory or very unsatisfactory for 12 percent, while 30 percent felt dissatisfaction with CLSI. Level of satisfaction here must refer to the ease of learning and ease of use. They go on to state that the new LUIS system is easier to learn, easier to use and more satisfactory than the old CLSI system.

No significant literature on the information services in various university libraries of Saudi Arabia in general and King Abdulaziz University in particular has been published. Automated library services in Saudi Arabia are not a new concept, however. The concept originated among the Saudi Arabian University authorities as early as the 1970's [12]. But it took over a decade to translate the idea into practice. King Fahad University for Petroleum and Minerals (KFUPM) was the earliest to enter into the field of automation in 1981. It was followed by King Saud University (KSU). King Abdulaziz University started its automation project in 1987. Since then automated online acquisition, catalogue, serial control and circulation have passed through various phases to come into operation in the central library.

Saudi Libraries are dependent to a considerable extent on Arabic materials for their information services. This issue was discussed for the first time by Mohammad Aman 1984 [13]. However, his paper shed light only on technical problems in the "use of Arabic in computerized information interchange".

Since KFUPM was the earliest in Saudi Arabia to introduce library automation in Saudi Arabia, quite a number of articles on the introduction of DOBIS/LIBIS have been published by the member of the staff of this library. Among them Khurshid [14] in his article on OPAC discussed KFUPM's cataloguing online and the systems capability for handling Arabic Cataloguing data. It also described the extent of bibliographic information it provide to open users.

Deemer [15], of the same library (KFUPM), described public access searching of the KFUPM automated catalogue. The paper also includes user reaction to card catalogues and online catalogues. According to him, OPAC use was extremely low. Deemer mentioned that "In its basic design DOBIS is extremely well protected against accidental damage to the database, whether through user error or equipment malfunction".

King Abdulaziz University started automating its library activities in 1987. Therefore, the organizers of the projects had to submit detailed reports about the phase-by-phase development. These reports were meant for submission to the Universities, but a limited number of copies were also made available for use in the libraries in Saudi Arabia. Six such reports covering the years between 1988 and 1992 have been published. These reports also recount the history and background of the library, its systems and services. They discuss phase-by-phase implementation of the automation, purchasing and installation of the DOBIS/LIBIS system. They also enumerate various problems the library faced in implementation of the programme

and their solution. But none of them has as yet dealt specifically with the users and their reaction [16].

The only research on the information services of the KAAU Library done so far was by Abdur Rashid Abdulaziz Hafiz [17]. His study concerned undergraduate users of the library. Both interview and questionnaire methods were used in his study. He took a sample of 543 students from the faculties of Arts, Economics, Meteorology, Science, Earth science, marine Science and Engineering. In his survey he found that only 31 of the total student population used the OPAC. Hafiz's study was conducted in 1990. At that time, only about 5% of the total collection of the library was computerized. Therefore, it was quite natural that students would prefer to use the card catalogue more than the OPAC. Moreover, this research did not include academic staff.

One of the earliest descriptions of the installation and use of the OPAC at the King Abdulaziz University Library is that by Saad Saeed Al-Ghamdi [18]. It is however a descriptive account rather than a scientific survey. It is not based on any survey of OPAC use by either students or by the faculty. It is an administrative account of how the OPAC was set up and what difficulties were faced. The problems, from the librarian's point of view are enumerated and solutions thereof discussed.

The Central Library of the King Abdulaziz University also provides online search services for its academic staff. This service is available through King

Abdulaziz City for Science and Technology, Riyadh. The KACST serves as the Centre through which database searching of United States hosts is available. A paper published by Ahmad Ali Tamraz [19] discusses various services that are provided by the KACST.

The KAAU Central Library also make use of the services of Gulfnet which allows users to 'exchange information between themselves". In addition to information services, Gulfnet also provides electronic mail services in the region. Ibrahim Abdullah and Taisir Jawaberah [20] have prepared a pamphlet to describe systems and services on Gulfnet. It is a "how-to-do" booklet, not a study or survey.

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CHAPTER 2

2.1 Background on the library at KAAU

King Abdulaziz University, which came into being in 1967 [1] is one of the premier institutions of higher education and research in the Kingdom of Saudi Arabia. It occupies a place of pride among the seven universities of the Kingdom, having the second highest number of student enrolments and offering Ph.D. programmes in the greatest number of disciplines, i.e. nine [2].

The Central Library of the University along with different faculty libraries started functioning in 1967 on the recommendation of the Advisory Committee of the University [3]. At present there are eleven libraries under the administrative and organizational umbrella of the Central Library. From the very outset, it was realized and recognized that the libraries should be developed as multi media resource centres of excellence. In consequence, the Deanship of Library Affairs was created in 1974 as a body responsible for the quantitative and qualitative growth of library services in the University.

The Deanship embarked on an ambitious programme of collection development which resulted in the multi media resources growing in geometric progression. From the original 29873 items, which formed the nucleus of the Central Library, the collection now stands at 618619 items [4]. This is in addition to an

appreciable amount of material acquired independently by the Faculty Libraries: 5028 journals were subscribed to at the peak in 1987.

Over the last few years however the volume of acquisition has slowed down and the number of journal subscriptions slashed. This slowing down is not only because of increasing cost and decreasing budget but also due to the steadying factors after the basic collection had been developed. From the very outset cooperation with libraries in the Kingdom and with libraries in the Gulf Cooperation Council Countries at large and automation of library services remained major concerns of the Deanship. The library regularly contributes to the Union List of Serials project of the King Abdulaziz City for Science and Technology, Riyadh. It is also linked online with KACST for access to the databases of the Gulf Countries Council (GCC) countries. Search requests for foreign databases are transmitted to KACST on-line and the KACST in return sends the results using the same medium of electronic mail.

2.2 Introduction of Automation at KAAU

In its aggressive attempt to improve library services and make retrieval of information easier and quicker, automation has always been a prime consideration of the King Abdulaziz University Library. As early as 1977, at the request of the Library, the Computer Centre of the University developed a programme for the control of journal holdings. Using this programme, the journal holdings of the Central as well as Faculty Libraries were computerized. The quest for a more comprehensive programme which could embrace all operations, or at least the

circulation, continued. Circulation got the topmost priority because the manual system in operation at the Library had become a headache because of its being extremely cumbersome and time consuming. The hunt for software packages available in the market continued through the years. Meanwhile in November 1980 a team of experts from the Boeing Computer Services was
invited by the University to study the problems and make recommendations. The team submitted its report but no action followed.

Serious attempts ensued when the Committee of Deans of Library Affairs met for the first time in Jeddah in 1983. The Committee in this meeting decided to request the erstwhile SANCST, now KACST, to study the various available systems including DOBIS/LIBIS which has already been selected by at least five libraries in the Kingdom - three universities and two special. In the KACST report, which was finalized towards the end of 1984, DOBIS/LIBIS received the best rating among the 11 systems surveyed and 8 compared in detail. In 1984 the Computer Centre of the University signed an agreement with IBM for automating university operations. The agreement included the DOBIS/LIBIS library system. Results did not materialize until 1988, when the University decided to fund the project from its research programme fund. The contract for purchasing the DOBIS/LIBIS system was signed with IBM on 17.4.1988 and the package was received on 1.7.1988 and loaded during the following summer vacation.

2.3 Why DOBIS/LIBIS?

DOBIS/LIBIS has made rapid progress from 40 installations in 1982 to 205 in 1992. It is said to be specially suited to the needs of the university libraries and, as such, the largest number of installations (89 or 43.4%) is for them. "One of the biggest strengths of DOBIS/LIBIS from the use at universities is surely its network compatibility and its ability to build a multi library operation" [5]. Universities are by nature multi layered and heavily structured institutions having many faculties as well as subject specialities and scientific areas. This networking capability of DOBIS/LIBIS, inter alia, has helped its selection in many university libraries including Oxford. Secondly, it is an integrated system that operates in real time. The software is open to system enhancement and the program fulfils the international specifications of MARC conformity. Furthermore, for us at the KAAU, its capability of being installed on the hardware already available, its multiple language capability, its cost, and the locally available vendor (IBM) support played a decisive role in its selection.

The picture of vendor support looks unclear at the moment, after the transfer of ownership of DOBIS/LIBIS from IBM to ELiAS. Additional attractions for the KAAU for this system included the fact that it had already been in use at three university libraries, two special libraries, the Arabian American Oil Company (Aramco) and the Institute of Public Administration (IPA). Moreover these institutions had already developed Arabic Versions of the programme which could be an immense time saver for us. Cooperative experience and resource sharing through

networking was also in mind when the authorities decided in favour of DOBIS/LIBIS. It is a user friendly system, using menu driven operations for ease of simplicity.

2.4 Acquisition

The acquisition module of DOBIS has yet to be switched on to the production mode. It is still in the development and training mode. The staff are being trained in its operation. Those staff members who have had some training are not satisfied with the acquisition module. Their complaints are that it cannot handle bulk purchases and that it has no provision whereby the entire history of a book order together with the full bibliographical details of the book can be had on a single screen. Information is scattered over a number of screens. The staff at the Technical Services of the King Abdulaziz University Library feel that it would be very helpful if a single screen could show items of information such as the date a book was ordered, the date it was received, the name of the jobber, the bibliographic details of the book, the faculty recommending the book, etc. They also contrast the lack of such provision in the acquisition module with the cataloguing module in which, by entering the letter 'L', one can look at the complete bibliographic details of a catalogued item.

2.5 Cataloguing

After an initial period of nearly nine months of customization and other preparations, like staff training, etc., the cataloguing module of the system went into production on the 28th March 1989. This was restricted to non-Arabic cataloguing only.

For the retrospective conversion of the card catalogue into a machine readable form it was decided that the Library of Congress MARC resource database should be acquired to make the process quick, easy and inexpensive. The purchase however was restricted to the records for English books only. The retrospective file covering the period from 1968-1987 contained 1,543,000 titles. The file for 1968 was also acquired. Regular subscription to the database started in 1989 and continued through 1991. It had to be cancelled in 1992 because of the shortage of funds.

At present our bibliographic records pool consists of 2.147 million records. We ran into a snag however before we could use this bibliographic records pool for RECON (the conversion of manual cataloguing records into the online database). The LC MARC records are provided in the US MARC international format. The DOBIS/LIBIS package does not include any program for the conversion of records from MARC to DMARC. The Emory University Library which had developed such a program made it available to us free of cost and, with the help of this, US MARC records were converted into DMARC and thus the pool was made usable. The

Library has recorded a hit rate of around 65% for books from 1968-1980 and around 80% for books from 1981 onwards.

In the non-Arabic database so far (till 6.1.1993) a total of 49557 documents consisting of 79576 copies have been entered. This includes RECON as well as current. The current materials includes original as well as copy cataloguing. The greatest problem in the editing of the entries and consequently database management is the inconsistency in the transferred data. The world renowned playwright George Bernard Shaw, for example, has been entered variously as SHAW, BERNARD, 1856-1950 (110 documents from 1886-1991) and SHAW, GEORGE BERNARD, 1856-1950 (4 documents from 1901 to 1991).

One of the problems surfaced when we decided to put a full stop at the end of each subject heading that we entered in the subject. This we thought would bring our own database in line with the LC MARC database in which subject headings are followed by a full stop almost invariably. This would save us a lot of editing time and cost. Later we discovered that this created a problem in filing when the said subject heading had any subheadings. The main subject heading (without the subheading) appeared at the end of the filing sequence after the same subject heading with subheadings, e.g.

Nuclear energy Bibliography.

Nuclear energy Economic aspects.

Nuclear energy Industrial applications.

Nuclear energy International cooperation.

Nuclear energy Law and legislation.

Nuclear energy Research Developing countries.

Nuclear energy Security measures.

Nuclear energy Sweden.

Nuclear energy Yearbooks.

Nuclear energy.

As a result of this a user searching the OPAC for documents on nuclear energy in general, but omitting to enter a full stop at the end of the search term, might give up the search at any stage before going to the end.

A number of solutions is before us and we have been deliberating on the issue for some time. A decision will soon follow.

Likewise the source of the subject headings in the LC MARC database is not constant and it is not expected to be, since it represents the cataloguing of not one library but a large group of heterogenous components. Even the LC itself draws headings also from the Annotated Card Program for juvenile titles. The most confusing area is medicine where headings from LCSH are used simultaneously with the subject headings from the National Library Medicine (NLM). Of course the pattern of headings from the two institutions is different, but there is a large number of headings which are common, e.g. BIOLOGY. What it means to us is that if the source for BIOLOGY in a document is NLM it will not merge with the BIOLOGY which has its source as LCSH. The file will appear like this:

BIOLOGY 25

BIOLOGY 5

This only goes to confuse the end-users. In consequence of this a considerable amount of staff time is spent on subject editing to ensure merger.

Another shortcoming of the program which bothered us a lot was its inability to take care of references - 'see' and 'see also' - adequately in the OPAC. It did not inform the users straight away that a reference existed. Instead, if the user was patient and persisted in choosing the item which showed only 0 documents, then only a cross at the bottom of the screen appeared. Even this in itself was not indicative enough. He would have to move forward to meet the reference itself. The picture is something like this:

Screen 1

1 _____

2 MAHFOUZ, NAGUIB 0

3 _____

4 _____

5 _____

Persist and enter 2

Screen 2 MAHFOUZ, NAGUIB 0

Enter number or code u truncated search

t new term e end v save

i new file

w show file xx-rafs

Persist still and enter x

Screen 3 MAHFOUZ, NAGUIB

1 Documents

Mahfuz, Najib, 1912- 3

This was a hopeless situation. We requested our System Analyst to do something about it and he has come up with a solution.

This is not all. We have a long list of problems with DOBIS, but fortunately we set up an On-line Cataloguing Policy Committee at the very beginning and this committee takes care of these problems in its meetings which are held every fortnight. The problems and recommended solutions are recorded for the cataloguing manual. Our greatest headache at the moment is how to create some sort of cross-reference from the non-Arabic database to the Arabic one and vice versa.

In the manual cataloguing of bilingual (the other language being Arabic) documents we used to file at least one added entry in the Arabic catalogue.

2.6 Arabization

Arabized cataloguing and OPAC modules were acquired from KFUPM. However the needs and requirements of KFUPM are different from that of KAAU. That University's Arabic collection can hardly be termed as sizeable. The KFUMP scarcely needs the support of indigenous materials for any active support of its instructional and research programmes. This necessitated changes and many enhancements were made to the programmes and maps. After long preparations and many obstacles the Arabic cataloguing system finally came into production in 1991. The teething period still continues. These developed serious errors in alphabetic filing. When this problem had been addressed the use of punctuation, e.g. a period before the subordinate department of a corporate entity or a colon before the subtitle (جامعة الملك عبدالعزيز. عمادة شؤون المكتبات) caused havoc with relevant files.

Likewise the use of the article ال has also become a headache. Sometimes we come across titles which begin with similar words only minus the article, e.g.

(1) ألامثال و حكم / تاليف الماوردى

(2) أمثال و حكم / تاليف عبدالله دياب

Now if the first title was already in the database and we try to enter the second title the system will simply retort:

Entry already exists.

In the printing of the computer generated cards as well there are problems which we are trying to sort out. The order is distorted, for example, of any non-Arabic element in the Arabic title if it spills over a line (the attached sheet). Similarly the name relator menu did not include مفسر, for example, which is very much needed for treatises on Hadith, Qur'an, etc. This we added to the list.

There are many other problems and many more crop up in the course of our day-to-day work.

2.7 Circulation

The circulation module of LIBIS was not considered practicable for immediate implementation. Therefore a local automated circulation system using PC was developed and introduced in May 1990. The program was developed by Dr. Ahmad Iskanderani using a well-known package called Dataflex. This independent program has yet to be integrated with the main DOBIS/LIBIS system.

2.8 OPAC

The non-Arabic OPAC was made available to users in 1990 with 8 terminals and 1 printer. The Arabic OPAC was operational from January 1991. A Department of Database Searching was created in the Deanship of library affairs.

OPAC search through the shelflist or the copy or document number does not lead to any definite information. Instead it gives back almost the same information you already know. Nor does it distinguish between
the copy and the document number for the purpose of the search. Similarly the system is extremely poor in statistical calculations, e.g. you can never know how many items the database has on social science.

2.9 Advantages and disadvantages of OPAC

The advantages of this entire automation project far outweigh any disadvantages or disturbances that it might cause. For example, in cataloguing, the OPAC opens up vast possibilities in the areas of search techniques. Boolean search, proximity search, combinations and permutations, limitations and restrictions, generation of bibliographies, etc. are all so important that any disadvantage can be easily ignored. Of course there may be system breakdown and power failures, but they are only occasional and momentary. The OPAC can be searched by any number of people simultaneously, while a particular part of the card catalogue can be searched by a single person at a time. Similarly in acquisitions and circulation it

makes the task easier and speedier. Accuracy and speed are the hallmark. Many points of dissatisfaction with the acquisition module have come to surface. They have already been discussed. Similarly the serials modules of DOBIS/LIBIS have proved to be too cumbersome for many libraries. The circulation module was found unsuitable for introduction in the King Abdulaziz University library and therefore a new system was developed by Dr Ahmed Iskanderani as we have already mentioned. So far as the general strengths and weaknesses of DOBIS/LIBIS are concerned they have been discussed in detail by Deemer [6]. One general complaint however seems to be its inability to take proper care of material in the Arabic language.

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CHAPTER 3

ELECTRONIC INFORMATION SERVICES IN SAUDI ARABIA

3.1 General Background

The information imbalance between the North and the South has not only created an artificial psychological barrier between the different segments of the world populations but has also led to a bitter sense of frustration, deprivation and exploitation in an overwhelming majority. It has been rightly argued that in this age of information society there are only two classes, viz. the information haves and the information have nots. It has been estimated that "about 120 LDCs, sharing two-thirds of the world's population, together produce substantially less than ten percent of the world's R&D output" [1]. Some estimates put this at even lower than six percent [2].

The lack of infrastructure - which is the result of a vicious circle of political, economic and social factors - is one of the greatest hurdles in the transfer of information technology such as the online database searching. Concurrent with the transfer the development of an indigenous information technology is an imperative. The informationally developed societies have hardly time for the problems of the developing countries. They have their own problems and they have their own race to win. "Less than half of one percent of Medline, for example, was devoted to the major tropical diseases that affect most of the

populations of the developing countries" [3]. The exchange of information even between one developing country and another usually takes place through the information systems of the developed countries. This is not only very expensive but also a slow and inappropriate process.

Fortunately for the Kingdom of Saudi Arabia the country has been information conscious from the very beginning of its development. It realized at a very early stage the importance of information in its national development. As a result concerted efforts were made at both public and private levels to develop an information infrastructure which would support and sustain economic and technological development. An excellent communication network was developed as a sine qua non for any informational take-off. Multimedia information resource centres were established and developed in earnest in the 1970's. From the 1970's, librarians and information scientists were sent for specialized education and training mainly to the UK and the USA.

From the 1980's, cooperation in the field of information among libraries of the Kingdom (e.g. in the shape of a Union Catalogue of Periodicals initiated by KACST, Riyadh to begin with) and with the Gulf Cooperation Council countries and with other countries of the Arab world at large, which later gave birth to the Gulfnet, became a key word in the information policy of the Kingdom of Saudi Arabia. A specialized institution to serve as a powerhouse of information was established in Riyadh at an enormous cost. The KACST works as a window to the information world outside the Kingdom by providing access to a large number of

online databases in the UK and the USA. It has been playing a central and pivotal role in the information development of the country.

3.2 King Abdulaziz University

At King Abdulaziz University specifically the importance of information services was recognized from the very beginning of the university's establishment. Even when there was no mechanized information search and retrieval system in place, and no online databases available for use, the Central Library had established a link with the BLDSC (British Library Document Supply Centre) for searching, reproduction and supply of its information requests. The users of the library had to fill in a prescribed BL form (Appendix 3) and indicate among other things the degree of urgency of their requirements. The requests were processed accordingly. In the case of immediately needed items, requests were conveyed telephonically or by telex. Facsimile transmission started a bit later.

The Central Library of the King Abdulaziz University has been participating in the Union Catalogue of Periodicals project which is destined to be available online throughout the Kingdom. Through this project, information requirements limited to the serials available in the libraries of the Kingdom are located and required services provided quickly and easily. In addition to these efforts, automation of library operations and services has always been a prime consideration of the King Abdulaziz University Central Library. This was,

however, not possible, for various reasons, until the end of 1988 when the DOBIS/LIBIS integrated library system was purchased from the IBM.

OPAC

The system was installed and the cataloguing module made operational from the 28th March 1989 [4].

The OPAC module was acquired from the King Fahad University of Petroleum and Minerals, Dhahran. Later on enhancements were made to the programs and maps [5]. No survey of its use has, however, ever been carried out before. One very elementary survey of undergraduate information-seeking behaviour in King Abdulaziz University included a sentence about the use of the OPAC. It indicated that only 31 students used the OPAC [6]. The findings of the survey are contestable since the writer's methodology is questionable.

The controlled subject vocabulary is at best archaic. It is a combination of two very dated lists which are hardly suitable for the second-generation OPACs. These lists are:

(1) الخازندار ، ابراهيم احمد . قائمة رؤوس الموضوعات العربيه. ط 3. الكويت : دار البحوث العلميه للنشروالتوزيع ، 1983. 578 ص.

(2) خليفه ، شعبان عبدالعزيز . قائمه رؤوس الموضوعات العربيه الكبرى. (ط1). الرياض : دار المريخ للنشر، 1985 . 2 مج . (1373 ص) .

If these thesauri do not contain the relevant terminology, headings from the LCSH are borrowed and translated into Arabic. There is however no definite policy, no authority file, no committee to oversee, nor any rules for coining of new subject headings. This is largely because of two factors, viz. the paucity of advanced scientific literature in Arabic and the lack of subject approach and consciousness among the library users.

Although much remains to be done and desired we might draw consolation from the fact that "even the best second-generation catalogues do little to help the user transform an information need to explicit expressions of the need acceptable by the system. Nor do these catalogues lead the user from 'found' information to related linked information that has not yet been discovered. It is unrealistic to expect our catalogue users to know in advance the structure and language of our library databases. It is equally unrealistic to expect online catalogue users to be proficient in the various search approaches and techniques before they engage an interactive system in the retrieval process" [7].

Online Database Searching

"Online searching has been in existence for approximately two decades and has established itself as the most direct means to access information. Databases from various information vendors are comprehensive and cumulative. Regular updates to maintain currency make online database searching valuable and indispensable... Libraries and information providers who offer online searching

can justify the expense of computer, telecommunication costs, and online charges because of the power and versatility they provide. Those people who use online services enjoy the convenience of quick access to information, the expertise of the librarian, hard copy, and time-saving benefits, so payment for such a service seems justified. Unquestionably online networks will continue in existence for reference work in any library" [8].

It was because of the importance that is attached to the online database searching in the information world today that the King Abdulaziz University Library started offering its users online database searching services from 1989 in two different ways. The library is linked directly to GULFNET and the users may search the database on the network through a terminal specifically reserved for this purpose in the Department of Database Searching. "GULFNET is a 'store and forward' network and it is not a distributed processing network; that is, users at one installation node, cannot execute programs, or store files on another node's computer. However, information can be exchanged between users at different nodes by messaging, and transferring, and receiving files. ... The main objective of GULFNET is to allow users at different nodes who share common backgrounds and interests, to exchange information between themselves" [9]. This network connects together several universities and research institutes located in the Arabian Gulf Countries by a high-speed leased line, a special sort of telephone connection.

GULFNET is also connected to BITNET. (This stands for'Because It Is Time NET work'.) BITNET too is a 'store and forward' network. The

connection is provided by the King Abdulaziz City for Science and Technology (for GULFNET) to the George Washington University (for BITNET) by using satellite line.

Alternatively, the users at the King Abdulaziz University library may send their database search requests to the King Abdulaziz City for Science and Technology through electronic mail and the KACST, having conducted the search in the relevant database, will send the results back in the same way. This means the library users can access, albeit indirectly, a large number of world databases. A list of databases that can thus be accessed is provided in Appendix 4. It will be seen that the number has increased from 22 to 33 in two years [10].

Although there is no likelihood of CD-ROMs replacing completely online database searching, for reasons we have mentioned above, the online process is prohibitively expensive for a large number of countries in the world. Among the developing nations only a very small number with rich oil resources - luckily Saudi Arabia is one of them - can offer online searching of remote databases. Most of the developing countries do not have the resources to develop the prerequisite infrastructure for any online searching. People live below the poverty line. Telecommunication links are almost non-existent. Many parts of these countries are still inaccessible by any means of transport except on foot or on donkey. Some of these countries are constantly embroiled in internecine feuds and wars. Most of them have corrupt and oppressive political systems which do not allow for any development. A handful of people have control over all the

resources. The rich get richer and the poor get poorer. Some of these countries devote from a half to the two thirds of their national budgets to the import of arms and weapons of destruction either to fight among themselves or to defend themselves against unseen enemies. The war industries of the industrialized nations are indebted to them for their prosperity and survival.

With this background no wonder online database searching seems a bitter joke. Minimal requirements are computer hardware and inexpensive telecommunication. Both these are rare commodities in a large number of countries. Metcalfe and Jones rightly observe "the proliferation of automated information systems, generated and controlled by industrialized countries, has led to a dichotomy in which developed countries use sophisticated electronic media for storage and dissemination of vast amounts of information, whilst developing, technologically-poor countries find the increasingly important commodity, information, more difficult to obtain due to a lack of funds and expertise" [11]. Besides these problems there is another dimension to the issue. While the developing countries pay heavily for the online database search they hardly get anything in return, in the sense that they are deprived of any controlling authority or proprietary right over the information for which they have paid. Secondly it increases their dependence and reduces their ability to develop indigenous systems.

CD-ROM technology may provide at least partially some solutions to these problems of the developing countries. Though it is still in its infancy it holds much promise and opportunity for reference and information services in the developing world. The response to CD-ROM based information services in libraries has been overwhelmingly enthusiastic. CD-ROM, which has often been heralded as the greatest invention after papyrus, has been steadily making inroads in the reference services of libraries ever since it was made available to the general library market in 1986. Librarians have been advised "how to stop worrying and embrace CD-ROM" [12]. Bristow summarizes his reaction to the introduction and use of this optical technology at Indiana University thus:

> "What is genuinely new for us is that we are able to offer the benefits of computer-assisted searching to very large numbers of students and faculty. This is something we have not been able to do in the past given the numbers of our users and the pricing structure of remote online services. Optical technology has provided us with an immediately available, satisfactory solution to a long identified problem" [13].

Now let us see how this technology may be a partial solution to the information problems of the developing countries. The most important thing is that it is not as expensive as online database searching. Some argue and try to prove that the initial start-up costs of CD-ROM may be even higher. That is, however, open to question. In the case of CD-ROM you do not need any sophisticated

telecommunication network. The recurring expenses are even less. It is in fact the cheapest information medium available if produced in reasonable qualities. "A single disc has a storage capacity of up to 600 megabytes, which rivals the storage capacity of a mainframe computer. It can store up to 15 billion bits of computer data, the equivalent of:

- o 800 eight-inch floppy disks.
- o 200 books, each containing 1000 pages.
- o 10 computer magnetic tapes.
- o 1,500 5.75 -inch floppy disks.
- o 275,000 pages of text" [14].

Paul Nicholls and Shaheen Majid [15] summarize the potentials for CD-ROM technology in the developing countries in the form of a table which we reproduce below:

- o Massive storage - one disc stores about 600 megabytes of data, the approximate equivalent of 1000 books or 1,500 floppy disks.
- o Economical - CD-ROM is the cheapest information medium available when produced in moderate quantities.
- o Durable - information is recorded physically and is resistant to damage from use, dampness, and insects (discs are currently expected to last at least 20 years).
- o On-site - the laserdisc is present at the workstation, not in a remote computing facility; thus, no telecommunications are required.
- o Unrestricted access - the database can be searched as often as necessary.

- Fixed costs - once the database is acquired, there are minimal ongoing costs, particularly unknown "pay as you go" charges and telecommunication tariffs.
- End-user oriented - most laserdisc database products feature user-friendly interfaces.
- Powerful search capabilities - laserdiscs allow the use of powerful search features such as Boolean searching, truncation, numeric ranging, multiple indexes, etc.
- Value-added information - laserdiscs offer greatly increased search capabilities; the number of access points may be increased by a factor of ten over those available in the printed counterpart.
- Training tool - since no clock is ticking, laserdiscs allow economical training of searchers; on-screen help is usually abundant, and tutorial programs are frequently supplied.
- Portability - the laserdisc is small and weighs only a few grams; it can be mailed first class anywhere in the world for a few dollars.
- Microcomputer-based - microcomputers are relatively inexpensive and also facilitates the use of communications software, downloading, further manipulation of data by word-processing or spreadsheet programs, and output of results in various forms.
- Multi-media - laserdiscs can store text, sound, images, motions, and combinations of these; they are capable of storing very extensive full-text databases economically.

The King Abdulaziz University Central Library realized the importance in information services of this powerful medium at the very outset. CD-ROM databases were acquired and made available for use by the academic community not long after its first introduction in the American market and long before even many American and European libraries had started using it. The library acquired MEDLINE on CD-ROM as early as 1991 at an initial subscription of US$2759. It has been in regular service since then and has helped the users retrieve bibliographic information along with abstracts. The users have to fill in a form before they make use of any online search service (Appendix 5). "The initial supply consisted of 19 disks (16 disks for Medline from 1966 to January 1991, 1 Medline Tutorial, 1 Database diskette and 1 set up diskette). In the initial delivery the 1984 disc was defective. It could not be accessed" [16]. The disc was later replaced by the Silver Platter Information Inc., with whom an agreement for the subscription was signed towards the end of 1990 through Faxon Europe. This database covers three indexing services, viz (1) Index Medicus (2) Index to dental literature and (3) International nursing index. The present subscription has come down to US$2475. Starting with Medline, the CD-ROM collection has increased to 15 databases as on 24 April 1993. For the first time, in the year 1413-1414H (corresponding to 1993-94) CD-ROM has been budgeted for and a sum of 560000 Saudi Riyals (£94595) has been allocated for the development of the CD-ROM Collection [17]. The databases that are currently available are as follows:

ABI/INFORM

Applied Science and Technology

Biological Abstracts

Books In Print Plus

CD-MARC Subject

Compendex Plus

Computer Library

Dissertation AB.

Econlit

Eric

Georef

Lisa

Public Affairs Information

World Weather Disc

Water Resources Abstract

3.3 King Abdulaziz City for Science and Technology

Fortunately Saudi economic and social infrastructural development increased rapidly at a time when information technology was likewise expanding. The story from MARC to CD-ROM is that of a phenomenal and spectacular progress of electronic information media within almost two decades. This coincidence of history saved the country many problems such as that of conversion of information resources from one medium to the newer one; from redoing the whole thing; from starting afresh, etc. As a result the Kingdom has been able to achieve a major edge over a large number of developing countries in respect of

planning and development of electronic information services. From the very outset the Kingdom's science and technology policies were based on the latest scientific and technological developments taking place anywhere in the world. As early as 1977 the Kingdom set up an organisation which was very quickly to become a catalyst for scientific and technological information in Saudi Arabia. This organisation was initially known as Saudi Arabia National Centre for Science and Technology (SANCST). It has now been renamed King Abdulaziz City for Science and Technology (KACST). This organisation more than any other in the country has provided a leading role in the development of information services in academic institutions and research centres throughout the country. In fact it has been like a pivot round which all information activities in the country revolve. KACST, which is responsible for the formulation of science and technology policies and coordination and promotion of applied scientific research in the country, also directly sponsors and funds research activities across a wide spectrum of scientific and technological disciplines.

This organisation from the very outset of its establishment realised the importance of information and development and as a result created a special Directorate General for Information Systems to provide a wide variety of support services to the academic and research community in the Kingdom. This Directorate provides a variety of services including the production, maintenance and updating of databases in the fields of science and technology at national level, provision of online search services, maintenance of data communication networks, etc. These services although varied in nature, content and scope, are rendered

free of any charge to research workers irrespective of their location or affiliation. This umbrella Directorate covers four smaller but equally active directorates, viz:

(1) Directorate of Databases

(2) Directorate of Information Services

(3) Directorate of National Networks and

(4) Computer Centre

Directorate of Databases

This is one of the most important departments of the Directorate General. It has the onerous task of identification, procurement, analysis, processing, storage and dissemination of relevant and significant items from a mass of scientific and technical information. In pursuance of this objective this Directorate produces and maintains the following national databases:

National Science and Technology Bibliographic Database

This bibliographic database is an inventory of everything in the field of science and technology written by Saudi citizens, published in Saudi Arabia, funded by Saudi agencies, and/or of interest to Saudi Arabia. This includes journal articles, books, public documents, academic dissertations, research reports, conference proceedings, etc. It is an invaluable tool for anyone who is even

remotely interested in Saudi Arabia, scientists, research workers, academic community planners and policy makers at home and abroad. At present this database consists of around 45,000 records in the English language. Each record gives a complete bibliographic description of the item concerned along with an abstract and also subject descriptors, source of availability, etc. It is updated weekly and can be searched under names of authors, their affiliations, and keywords in titles, abstracts, descriptors and other fields. Weekly additions amount to around 100 documents.

The Arabic counterpart of this database is even more valuable since documents contained in this can be hardly accessed through any other source. The Arabic one at the moment contains around 22,000 documents in the field of science and technology related to Saudi Arabia. The scope and coverage is exactly the same as the English database. The access points and the frequency of updating are also the same. The documents in the Arabic database are almost invariably available in KACST and therefore copies of any of them can be had on request. Around 50 documents are added to this database every week.

Scientific and Technical Terms Databank

This multilingual databank of scientific and technical terms is an answer to the challenge of Arabization of scientific literature. Through this databank it is

intended to help those who are engaged in research and teaching of scientific disciplines in Arabic. This dictionary, which is still in the process of development, contains around 250,000 items which are explained in full along with grammatical and other information in the Arabic, English, French and German languages. This electronic compendium, on its completion, will be made available to the academic and research community in the Kingdom for online searching from remote locations.

Manpower Database

In view of the scarce manpower resources in the field of science and technology it is vital that they be used effectively, judiciously and to the maximum benefit of the community. This is possible only when current and complete information about this manpower is available. The KACST has therefore compiled a directory of qualified and trained scientific and technical personnel who are currently available on the Saudi job market. At present the Database has a headcount of over 8,350. The maintenance and updating of the database is done regularly.

In addition to these databases, the Directorate has also developed a number of databases which are meant to be in-house products. They are not available to the public for online search. Some of them are Researchers, Research in Progress and Research Projects Databases. Still others are in the process of

development. They include Scientific Institutions Database, Research Organisations Database, and Libraries and Information Centres Database.

Directorate of Information Services

This Directorate consists of three units, viz. (1) Online Services Department, (2) Document Delivery Department and (3) the Library. These three units together are responsible for providing speedy access to the world's ever increasing stock of scientific and technical information, the currency and accuracy of which can be of decisive importance to the economic and social development of the country.

Online Services Department

This Department searches, in addition to its own numerous home-produced databases, hundreds of other international databases offered by major vendors in the United States and Europe including DIALOG, ORBIT, STN, NEWSNET, NEXIS/LEXIS and EASYNET. These database services provide ready access to millions of citations, abstracts of news stories, literature reviews and surveys, technical reports and full-text documents covering all branches of human knowledge.

Requests for online searching can be sent to the Directorate of Information Services either by post, telephone, telex or telefax. Requests can also

be transmitted through the two communication networks operated by KACST. On receipt of information requests, a team of experts at the Online Services Department analyses them, formulates appropriate search strategy and searches them in the relevant databases. Search results are edited for the benefit of the consumer and then sent to the requesters by the most appropriate medium of communication including telefax and computer networks. It is estimated that so far around 40,000 searches have been processed by this Department. These services are always provided free of charge to all scientists and researchers in the Kingdom. A new CD-ROM network has been installed which will provide access for outside users to a large number of commercial databases on compact disk.

Document Delivery Department

Citations or even brief summaries or abstracts of documents may sometimes be insufficient. Requesters may need the complete document. The Document Delivery Department is responsible for the supply of full-text copies of the required document which it acquires through a wide variety of sources and delivers within a matter of days. It must be noted that the Department procures and delivers documents not only from local sources but also from foreign sources. If a document cannot be located in any depository of the Kingdom, a copy is obtained from a foreign library or information centre. About one hundred thousand documents have been delivered to research workers so far.

KACST Library

This library is a focal point from where information services are customized and provided to users. The KACST library provides a full range of information services, including reference, circulation, interlibrary lending, and photocopying of documents. It has an online catalogue which can be searched by GULFNET and KACSTNET member institutions. The library also circulates a weekly current awareness bulletin which is composed of the tables of contents of periodicals received in the library during the preceding week. This automated service is fully customized, based on the titles of periodicals selected by the users for their interest profiles. Copies of the Current Awareness Bulletin are sent to users outside KACST through GULFNET. Resource sharing is another major field in which the library is involved. It has developed a number of databases to promote this objective.

The Union List of Periodicals Database developed by the library contains information about foreign language periodicals held by the academic and special libraries in the Kingdom of Saudi Arabia. About 20,000 records are available in this database which can be searched from any location in the Kingdom and in the Arab Gulf States through KACSTNET and GULFNET facilities. The Union List of Periodicals Database can be searched under subject classification codes and keywords in the titles of the periodicals, names of publishers, frequency, place of publication and location of holding libraries.

Directorate of National Networks

GULFNET and KACSTNET, the two data communication networks, are the responsibility of this Directorate. Operation and maintenance come under the purview of this very important department of KACST.

GULFNET, which started operation in May 1985 and which links computer centres of major universities and research organisations through public leased telephone lines is the first such network in the Arab Gulf countries. A computer in each member institution provides a connection to the principal node at KACST and also provides certain central services to the other nodes. As we have already noted elsewhere, GULFNET is a store and forward network which can be used to transfer files, text, data or programs to other nodes, to receive or send electronic mail to one or more network users and to enquire from computerized databases in the system. Eleven institutions in the Kingdom of Saudi Arabia and in Kuwait are members of the network. Scholars and research workers at any of these institutions can send their information requests to KACST for online searching and for ordering documents through the facilities provided by this network. They can also receive their search results through the same medium. GULFNET is also connected to BITNET (USA), NETNORTH (Canada), EARN (European Academic and Research Network) and other networks in the world.

KACSTNET is a dial-up communication network which connects over 60 research institutions and libraries in the Kingdom with the central computer at

KACST. This, among other things, enables scientists and researchers at a number of institutions to access directly the databases generated at KACST. The central computer at KACST is also linked to the computers at the National Computer Centre in Riyadh through a leased line. The PASSTHRU software allows users of KACST computers to communicate with the NCC computers as if they were locally connected to that system.

Computer Centre

This centre at KACST provides, operates and maintains facilities for the successful implementation and execution of all the ambitious programmes of the King Abdulaziz City [18].

3.4 King Fahad University of Petroleum and Minerals

King Fahad University of Petroleum and Minerals at Dahran is another institution which took the initiative and made pioneering efforts for the automation of library services. The University started exploring the possibilities of library automation as early as 1970. It was not however until a decade later that the library and information services were fully automated. "In December 1982, 4 CRT terminals were put closer to the card catalogue for searching by patrons. The users found it exciting to use the online catalogue. For the first few months the users seemed to play with the terminal keys and printers attached to the

terminals. Playing with the system was certainly an important part in the learning process and helped the users to become comfortable with the online catalogue" [19].

Since then the entire library operations have been automated at the KFUPM and the library has developed excellent electronic information services with OPAC, online databases and CD-ROM databases.

3.5 King Saud University

Similarly King Saud University, Riyadh, purchased DOBIS/LIBIS during 1981. Implementation of the automation project at this University has not been as rapid as at the KFUPM. King Saud University has also developed the Arabic Version of the DOBIS/LIBIS for its own use. A Union List of Arabic Periodicals was also compiled by the King Saud University library in 1986 which is in the process of being computerized by the King Abdulaziz City for Science and Technology. "The list on its completion, will be made available to the academic community in the Kingdom and other neighbouring countries for online searching through GULFNET facilities" [20].

3.6 Other Libraries

In addition to these libraries, King Fahad National Library, Riyadh, King Abdulaziz Public Library, Riyadh, the Institute of Public Administration, Riyadh,

and Aramco Library, Dhahran have all been very active in making library services automated and offering electronic information services.

In the field of business, industry, commerce and economics, however, the library of the Chamber of Commerce and Industry at Jeddah has been in the forefront of late. It is in the process of developing an excellent collection of CD-ROM databases for the benefit of economists, businessmen, planners, etc. Besides this the library will soon be connected with the INTERNET Computer System. INTERNET is a worldwide collection of interconnected computer networks, ranging from large networks, such as the National Science Foundation Network (NSFNet), which is a major US network, to medium-sized networks, such as the New York State Education and Research Network (NYSERNet), to small local area networks (LANs) found on most American University Campuses and in many commercial firms and public institutions throughout the world. INTERNET users number in the millions. As of January 1993, over 4,000 interconnected networks in over 100 countries linked an estimated 1.3 million host computers to form the INTERNET community. The Chamber of Commerce and Industry Library is also planning to acquire the ECONOMICLET service for the business and related community. The latter is an academic and specialised systems, including all aspects of the economy. "Another plan is to introduce a system whereby users can use the library from the comfort of their own houses via a computer system" [21].

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CHAPTER 4

4.1 Analysis of the Data

4.1.1 Results

This chapter discusses the results of the questionnaires and interviews of the field study.

The chi- Square Test has been used for this study where it is possible at level $p < .05$ to find significant differences between several variables.

The groups targeted in the questionnaire differ in their backgrounds, as shown in Table 1.

TABLE 1

	Background	No. of people	No response
Faculties	Arts	41 32.3%	
	Sciences	86 67.7%	
Age	Under 40	50 39.4%	1 0.8%
	Over 40	76 34.3%	
Position	Professor	16 12.6%	5 3.9%
	Asso. professor	18 14.2%	
	Assis. professor	48 37.8%	
	Lecturer	40 31.5%	
Last degree	Before 85	66 52%	3 2.4%
	After 85	58 58%	

All these factors will be considered as ones that may affect the results except that of position, because the Samples of professor and associate professor are small, and thus making correlations between them does not indicate any significant difference. At the same time the age of people gives a useful indication, i.e. that people who were over 40 years old might be professor or associate professor, while the people who were under 40 years old might be associate professor or lecturer.

We begin with teachers who graduated before 1985 because they may not generally be familiar with electronic technology (which at that time was not as common as it is now). Table 2 shows the results.

TABLE 2

Experience with computers	Type of response	No. of people	No response
Used computer before	Yes	112 88.2%	2 1.6%
	No	13 10.2%	
Experience with computer	Less than 4 years	54 42.5%	13 10.2%
	Above 4 years	60 47.2%	
Use of computer	Frequently	61 48%	12 9.4%
	Occasionally	54 42.5%	
Use of word processing	Yes	84 66.1%	4 3.1%
	No	39 30.7%	

From correlations of the data collected it is observed that 47.2% of the sample used a Mainframe, 42.5% did not use it, 10.2% gave no response. 12.6%

used a Mini, 77.6% did not use it, 10.2% gave no response. 71.7% used a PC or equivalent, 18.1% did not use it, 10.2% gave no response. 13.4% used a Macintosh, 76.4% did not use it, 10.2% gave no response.

The above table shows that about half of the sample used the computer frequently, while somewhat less than half of the sample used the computer occasionally. This factor will be considered during the data analysis.

The background in the use of computers is important because the frequent users might be able to evaluate the system better than the occasional users.

The library of KAAU provides users with two types of tool to access the library materials. The samples were asked "what searching tool(s) have you used for looking for materials in the library?". The responses to that question are shown in Table 3.

TABLE 3

Type of tool	No. of people	Chi-Square Test
Card catalogue	57 44.9%	33.95
OPAC	10 7.9%	
Both	53 41.7%	

No response = 7

The chi- Square Test was applied to the above table and it shows significant difference between the people who used the Card catalogue and the one

who used OPAC. Most 87% of the sample used the card catalogue, while only 50% of the sample used OPAC.

From correlation of the data it was found that 2.4% of the sample who graduated before 1985 used the OPAC for looking for material in the library, compared with 5.5% of those who graduated after 1985. 26% of the sample who graduated before 1985 used the card catalogue, while 17.3% of the sample who graduated after 1985 used this type of catalogue. 20.5% of the sample who graduated before 1985 used the card catalogue and OPAC, and the percentage for those graduating after 1985 was the same. 18.1% of the sample who used the computer frequently used the card catalogue, while 19.7% of the sample who used the computer occasionally used this type of catalogue. 5.5% of the sample who used the computer frequently used an OPAC for looking for material in the library, while 2.4% of the sample who used the computer occasionally used an OPAC for the same thing. 21.3% of the sample who used the computer frequently used the card catalogue and an OPAC, while 18.9% of the sample who used the computer occasionally used both tools. Those who said that they used OPAC were asked several questions to discover their point of view about the system. They were asked "How easy is it to read material on-screen?". The responses to the question can be seen in Table 4.

TABLE 4

Reading material on OPAC	No. of people	Chi-Square Test
Easy	35 27.9%	0.24
Fairly easy	31 24.4%	

No response = 61

It was found from the table that there is no great difference in reading material from the OPAC screen; this was also confirmed by the Chi-Square Test.

22.2% of the respondents who graduated before 1985 said it was fairly easy to read material on the OPAC screen, and 25.8% who graduated after 1985 agreed with this. 11.8% of the sample graduating before 1985 said that it was easy to read the materials on the OPAC screen, while 15.7% from the sample graduating after 1985 said the same thing. 17.3% of the sample who were under 40 years old did not respond, compared with 29.9% of the sample who were over 40 years old.

13.4% of the sample who were under 40 years old said that reading material on the OPAC screen were easy, while 14.1% of the sample who were over 40 years old said the same thing. 8.7% of the sample who were under 40 years old said that reading material on the OPAC screen was fairly easy, while 15.8% of the sample who were over 40 years old said the same thing.

The second question asked about the system was: "What do you think of the amount of information on each screen with the OPAC?". The responses to that question can be seen in Table 5.

TABLE 5

Amount of information on OPAC screen	No. of people		Chi-Square Test
Too much	2	1.6%	Not applied
Acceptable	65	51.2%	

No response = 60

The test could not be applied because there is a small number in the 'too much' cell. However, from correlations of the data it was found that 38 of the sample who graduated before 1985 did not respond about the amount of information on each screen with the OPAC and at the same time only 22 of the sample who graduated after 1985 did not respond. 1.6% of the whole sample said that the amount of information on the OPAC screen was too much, while 23.7% of the sample who graduated before 1985 said it was acceptable and 26.7% who graduated after 1985 said the same. 1.6% of the sample who used the computer frequently said that the amount of information on the OPAC screen was too much, while 26% of the sample who used the computer occasionally said that the amount of information on the OPAC screen was acceptable. 16.5% of the sample who were under 40 years old did not respond, while 29.9% of the sample who were over 40 years old did not respond either. 1.6% of the sample who were under 40

years old said that the amount of information on the OPAC screen was too much, while none of the people who were over 40 years old made this statement. 21.4% of the sample who were under 40 years old said that the amount of information on the OPAC screen was acceptable, while 29.9% of the sample who were over 40 said the same thing.

The third question about the system was: "Does the information on the screen of the OPAC satisfy your needs?".

The responses to that question are shown in Table 6.

TABLE 6

User satisfaction with OPAC screen	No. of people	Chi-Square Test
Satisfactory	51 40.1%	25.8
Not satisfactory	12 9.4%	

No response = 64

The Chi-Square Test was applied to the above table and it shows a significant difference between the people who were satisfied or not with the OPAC screen information.

39 from the sample who graduated before 1985 did not respond while 23 of the sample who graduated after 1985 did not do so. 20.5% of the sample who

graduated before 1985 said that they were satisfied with the information on the screen, while the percentage for those graduating after 1985 was the same. 20.5% of the people who used the computer frequently did not respond, while the percentage for those who used the computer occasionally was the same. 23.6% of the respondents who used the computer frequently said that they were satisfied with the OPAC screen information, while 16.4% of the respondents who used the computer occasionally said the same thing.

17.3% of the sample who were under 40 years old did not respond, while 30.7% of the sample who were over 40 years old did not respond either. 7.1% of the respondents who were under 40 years old said that they were satisfied with the OPAC screen information, while only 2.4% of the respondents over 40 years old said that they were satisfied.

The other question was "How clear are the instructions on each screen with the OPAC?". The responses to the above question are presented in Table 7.

TABLE 7

Instruction on OPAC	No. of people	Chi-Square Test
Good	24 18.9%	2.8
Acceptable	37 33.8%	

No response = 60

The Chi- Square Test was applied to the above table and it shows no significant difference.

9.5% of the sample who graduated before 1985 said that the instructions on OPAC were good, while 9.4% of the sample graduating after this date said the same thing. 24.2% of the people who graduated before 1985 said that the instructions on OPAC were acceptable, while 18.8% of the people who graduated after 1985 said the same thing. 12.6% of the respondents who used the computer frequently said that the instructions on the OPAC were good, while 6.3% of the respondents who used the computer occasionally said the same thing. 15.8% of the respondents who used the computer frequently said that the instructions on the OPAC were acceptable, while 17.5% of the respondents who used the computer occasionally made the same statement. 16.5% of the people who were under 40 years old did not respond, while 29.9% of the people over 40 years old gave no response either. 5.5% of the respondents under 40 years old said that the instructions on the OPAC were good, while 13.4% over 40 years old said the same thing. 13.4% of the respondents who were under 40 years old said that the instructions on the OPAC were acceptable, while 21.6% of the respondents over 40 years old had the same opinion.

A further question to find out how the system is regarded was: "How easy is the OPAC system to use?". The responses here are shown in Table 8.

TABLE 8

Use of OPAC system	No. of people	Chi-Square Test
Easy	37 29.1%	0.74
Fairly easy	30 23.6%	

No response = 60

The Chi-Square Test does not show significant difference in the results in the use of the OPAC system. All the people who responded to the above question considered the system as easy or fairly easy.

There were 38 of the sample who graduated before 1985 who did not respond, while 22 of the sample who graduated after 1985 did not respond.

11.8% of the sample who graduated before 1985 said that it was easy to use the OPAC system,while 17.3% of the sample who graduated after 1985 said that the system was easy to use. 18.9% of the sample who used the computer frequently said that the OPAC system was easy to use, while 9.5% of the sample who used the computer occasionally said the same thing. 9.5% of the sample who used the computer frequently said that the OPAC system was easy to use, while 13.4% of the sample who used the computer occasionally made the same statement.

Another question was "How satisfactory are the OPAC system responses when you make mistakes?". The responses to this question are shown in Table 9.

TABLE 9

OPAC system response when you make a mistake	No. of people	Chi-Square Test
Satisfactory	17 13.4%	16.26
Acceptable	50 49.4%	

No response = 60

The Chi-Square Test was applied to the above table and it shows a significant difference between the fewer people who considered the OPAC system response when the user makes mistake as satisfactory and the majority of the people considered the response acceptable.

There was no response from 28.4% of the sample who graduated before 1985 and 17.3% of the sample who graduated after 1985. 5.5% of the sample who graduated before 1985 said that it was satisfactory when you make a mistake. 7.9% of the sample who graduated after 1985 said the same thing. 23.2% of the sample graduating before 1985 said that it was acceptable when you make a mistake while 20.5% of the people graduating after 1985 made the same response. 9.4% of the sample who used the computer frequently did not respond, and likewise 19.7% of the sample who used the computer occasionally did not respond. 9.4% of the sample who used the computer frequently said that the OPAC system was satisfactory when they made a mistake, while 4% of the sample who used the computer occasionally said the same thing. 18.8% of the sample who used the computer frequently said that the OPAC system was acceptable when

they made a mistake, while 18.9% of the sample who used the computer occasionally said the same thing. 7.1% of the sample under 40 years old said that the OPAC system was satisfactory when they made a mistake, while 6.3% of the sample over 40 years old said the same thing. 12.6% of the sample under 40 years old said the OPAC system was satisfactory when they made a mistake, while 23.6% of the sample over 40 years old made the same statement.

A further question to find out how the system is regarded was "How quickly can you move from screen to screen with the OPAC?". The responses here appear in Table 10.

TABLE 10

Moving from one screen to another	No. of people	Chi-Square Test
Quickly	31 24.4%	0.24
Not very quickly	35 27.5%	

No response = 61

On the speed of moving from one screen to another there is not a very high difference in the percentages of alternative responses, as shown in the above table.

38 of the people who graduated before 1985 did not respond, while 23 of the people who graduated after 1985 did not respond either. 11.1% of the sample

who graduated before 1985 said that moving from one screen to another is quick, while 13.4% of the sample who graduated after 1985 said the same. 12.6% of the sample who graduated before 1985 said that moving from one screen to another is not very quick, while 14.2% of the sample who graduated after 1985 gave the same response. 15.7% of the sample who used the computer frequently said that moving from one screen to another was quick, while 8.7% of the sample who used the computer occasionally had the same attitude.

12.5% of the sample who used the computer frequently said that moving from one screen to another was not very quick, while 13.4% of the sample who used the computer occasionally said that such a move was not very quick. 17.3% of the sample under 40 years old and 29.9% of the sample over 40 years old did not respond. 10.3% of the sample under 40 years old said that moving from one screen to another was not very quick while 14.2% of the sample over 40 years old said the same thing.

The last question to discover how the system is regarded was "How good is the design of the OPAC display?". The responses of this question are shown in Table 11.

TABLE 11

OPAC display	No. of people	Chi-Square Test
Good	30 23.5%	0.74
Acceptable	37 29.2%	

No response = 60

The Chi-Square Test in this case does not indicate significant difference. However 9.5% of the people who graduated before 1985 said that the display of the OPAC was good while 13.4% of the people who graduated after 1985 said the display of OPAC was good. 14.2% of the people who graduated before 1985 said that the display of OPAC was acceptable, while 15% of the people who graduated after 1985 also said that the OPAC display was acceptable. 13.4% if the sample who used the computer frequently said that the OPAC display was good, while 9.5% of the sample who used the computer occasionally said the same thing. 15% of the sample who used the computer frequently and 13.4% of the sample who used the computer occasionally said the OPAC display was acceptable. 16.5% of the people under 40 years old did not respond, while 29.9% of the sample over 40 years old did not respond either. 8.7% of the sample under 40 years old said that the OPAC display was good, while 13.4% of the sample over 40 years old said that it was good. 12.5% of the sample under 40 years old said that the OPAC display was acceptable, while 16.5% of the sample over 40 years old said the same thing.

One question was then asked to academic staff to obtain from them a response about which tool they preferred to use for searching for library material. The responses to this question are shown in Table 12.

TABLE 12

Searching tools you prefer	No. of people	Chi-Square Test
Card Catalogue	51 40.2%	2.16
OPAC	67 52.8%	

No response = 9

The Chi- Square Test was applied to the above table and it shows that more people preferred the OPAC system rather than the card catalogue.

23.6% from the sample who graduated before 1985 preferred the card catalogue, while 15% of the sample who graduated after 1985 preferred the card catalogue. 24.4% of the people who graduated before 1985 preferred to use OPAC, while 27.6% of the people who graduated after 1985 preferred to use this system. 17.3% of the respondents who used the computer frequently preferred to use the card catalogue, while 16.5% of the respondents who used the computer occasionally preferred to use the same tool. 26.8% of the respondents who used the computer frequently and 23.6% of the respondents who used the computer occasionally preferred to use OPAC. 11% of the respondents under 40 years old preferred to use the card catalogue, while 28.3% of the responses over 40 years preferred to use this tool. 23.6% of the respondents under 40 years old preferred to use OPAC, while 29.1% of the responses over 40 years old preferred to use the same tool.

The last part of the questionnaire embraced the use of CD-ROM and the quantity of information obtained from it. The sample were asked: "Do you use the CD-ROM service which is available in the library?". The responses to that question are shown in Table 13.

TABLE 13

Do you use CD-ROM ?	No. of people
Yes	43 33.9%
No	77 60.6%

No response = 7

From correlations of the data it was found that 4.8% of the sample graduating before 1985 did not respond, while 8% of the sample graduating after 1985 did not do so. 13.3% of the sample graduating before 1985 used CD-ROM, while 18.1% of the sample graduating after 1985 used it. 33.9% of the sample graduating after 1985 did not use CD-ROM at all, while 26.8% of the sample graduating before 1985 did not use it either. 17.3% of the sample who used the computer frequently said that they used CD-ROM, while 14.2% of the sample who used the computer occasionally said the same thing. 29.1% of the sample who used the computer frequently said that they did not use CD-ROM. 21.3% of the sample under 40 years old did not use CD-ROM, while 39.4% of the sample over 40 years old did not do so.

Another question was "If the answer is 'Yes', how often do you use this service?". The response is shown in Table 14.

TABLE 14

Use of CD-ROM at least once in the period	No. of people	Chi-Square Test
Three months	23 18.7%	0.6
Six months	18 14.2%	

No response = 86

From the above table it can be seen that the overwhelming majority of the sample did not respond and there was no large difference between the 3 months basis and 6 months. 40.6% of the sample who graduated before 1985 did not respond, while 29.3% of the sample who graduated after 1985 did not respond either.

5.7% of the sample who graduated before 1985 used CD-ROM within 3 months, while 10.6% of the sample who graduated after 1985 used it within three months. 10.6% of the sample who used the computer frequently used CD-ROM within 3 months, while 6.5% of the sample who used the computer occasionally used CD-ROM at the same intervals. 9.8% of the sample under 40 years old used CD-ROM within three months, while 8.2% of the sample over 40 years old used CD-ROM within three months. 4.1% of the sample under 40 years old used CD-

ROM within six months, while 7.3% of the same over 40 years old used CD-ROM at the same intervals.

4.1.2 Evaluation of Findings

Of the people who were questioned to discover their points of view about the system, about 50% of the sample did not respond. These were staff that did not use the OPAC, but used the card catalogue. Most people used the card catalogue: when they were asked about what searching tools they had used for looking for materials, about 50% of the sample said they used the card catalogue and somewhat less than half of the sample said that they used card catalogue and OPAC. This might be because until now not all material has been entered on the OPAC, or it might be because there is no training for people in the use of the computer, or because people did not desire to use the technology. On the other hand, the Chi-Square Test indicated that there was a very highly significant difference between all the tools (33.93). However, approximately half of the people used the OPAC and this is extremely encouraging, especially as the OPAC had only been operating for a short period in the library. In spite of the Chi-Square Test (2.16) giving a slight difference between the people who preferred using the card catalogue and those who preferred the OPAC, it was found that 11% of the sample under 40 years old preferred to use the card catalogue compared with 28.3% of the people over 40 years old. These percentages show that the older people might prefer to use the card catalogue, while younger people might prefer to use OPAC because they might have already used a similar or

identical system in countries where they obtained their degrees. Staff who graduated before 1985 will be less familiar with technology. It was found that 23.6% from the sample who graduated before 1985 preferred the card catalogue, while 15% of the sample who graduated after 1985 preferred the same tool. The Chi-Square Test (4.47) indicates that there was significant difference between the numbers in the different age groups of staff who used the computer frequently. This gives another indication that people who are over 40 years old will use computers less than people who are under 40 years old. Although it was found from the Chi-Square Test that there was significant difference (9.64) between the people who used CD-ROM or not, there is a good result which is that a third of the staff use the CD-ROM, despite the fact that CD-ROM is modern technology in use in the libraries. The fact that a minority of staff used CD-ROM in the library, might be because all the databases which are available (i.e. on 23rd April 1993) to academic staff are devoted to Medicine and Engineering faculties only. It might be because some of the academic staff did not know how to use a CD-ROM or because they have relied on staff doing the searching for them, as some academic staff mentioned in the questionnaire.

CHAPTER 5

5.1 Conclusion and Recommendation

Automation of library functions seems to be a proper solution to providing better services to the increasing student population and academic staff. OPACs will provide students and academic staff with proper access to such information as author, title, subject, ISBN, ISSN, LC, etc.

An OPAC provides speedy accessing of information. At present an OPAC does not represent the total collection of the KAAU library which should feed the database with all the available materials which are not at present entered.

Adding more terminals close to staff members in the faculties will be helpful and will encourage staff members to use OPAC. An online network between the Saudi university libraries needs to be established especially as there are three university libraries and two special libraries which already have the DOBIS/LIBIS systems which coordinates the development programme. Thus the information will be available at any time for staff members and students. Therefore KAAU library will have to establish good communication with the support of the local universities and special libraries.

The KAAU library should establish a CD-ROM network, especially at this time because the CD-ROM has been budgeted for and a sum of £94,595 has been allocated for its development and also because over the last few years, the volume of acquisition has slowed down and the number of journal subscriptions has been slashed. The online network between libraries will provide users with access to collections of all the libraries in the network.

KAAU library should change its policy so that search through databases is not made by staff only, but CD-ROM equipment is provided in the central library and in branch libraries to encourage students and academic staff to use the system. The equipment should be put on the entrance level to show every user who wants to use these technologies that they are available in the library.

Because there are only about a third of the staff who have used CD-ROM, the KAAU library will have to notify the staff who are not aware of this service, that there is a CD-ROM available in the library. This can be done by issuing a leaflet to clarify what databases are available in the library and an advertisement in the university newspaper.

The other factor for the people who used the technology is training which is very important for users and staff. This can be done via specialized regular courses during the first term to make the readers familiar with the use of OPAC and CD-ROM search systems.

Employees working on CD-ROM require intensive training especially to upgrade their English, because sometimes researchers have difficulties in that they request a certain topic and then get something else. At the same time, training for academic staff is needed on how to request specific topics. Otherwise their requests will be too wide and vague.

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Appendix 1

Dear Colleague

This questionnaire is a part of a study which is being undertaken concerning central university library services. Your opinion, help and cooperation would be highly valued.

I would appreciate it if you could take the time to complete the enclosed questionnaire. Please be assured that your responses and any additional information you may provide will be kept strictly confidential, and will be used solely for the purposes of this study.

Please complete this questionnaire, and, before you leave the library, place it in the questionnaire box at the Entrance/Exit counter of the Reference Division, or at the User's Adviser's desk.

Yours sincerely,

Mohammed A. Basager

QUESTIONNAIRE

1. Personal record :

a) Department ----------

b) Age :-

i) Under 30 years ( )
ii) Between 31 to 40 years ( )
iii) Between 41 to 50 years ( )
iv) Over 50 years ( )

c) Position :-

i) Professor ( )
ii) Associate professor ( )
iii) Assistant professor ( )
iv) Lecturer ( )

d) When did you get your last degree ?

i) Before 1975 ( )
ii) Between 1976 to 1985 ( )
iii) After 1985 ( )

2. Have you ever used a computer(s) ?

Yes ( ) No ( )

**** If the answer is 'No' for the above question please go to question # 6**

3. If the answer is 'Yes' for the above question; what type of computer(s) have you used ?

i) Mainframe ( ) ii) Mini ( )
iii) PC or equivalent ( ) iv) Macintosh ( )
v) Others ---------- ( ) vi) Do not know ( )

4. How long have you been using a computer(s) ?

i) Less than one year ( )
ii) From one to four years ( )
iii) More than four years ( )

5. How often do you use a computer(s) ?

i) Frequently ( )
ii) Occasionally ( )
iii) Very little ( )

6. Have you used word processing before ?

Yes ( ) No ( )

7. If the answer is 'Yes', how often have you used word processing ?

i) Frequently ( )
ii) Occasionally ( )
iii) Very little ( )

8. Does somebody else do word processing for you ?

Yes ( ) No ( )

9. What searching tool(s) have you used for looking for materials in the library ?

i) Card Catalogue ( )
ii) OPAC ( )
iii) Both ( )

**** If you do not use the 'OPAC' Please go to question # 19**

10. How easy is it to read material on-screen with the OPAC ?

i) Easy ( )
ii) Fair ( )
iii) Difficult ( )

11. What do you think of the amount of information on each screen with the OPAC ?

i) Too much ( )
ii) Acceptable ( )
iii) Too little ( )

12. Does the information on the screen of the OPAC satisfy your needs ?

Yes ( ) No ( )

13. If the answer is NO for the above question, what else did you expect?

14. How clear are the instructions on each screen with the OPAC ?

i) Good ( )
ii) Acceptable ( )
iii) Poor ( )

15. How easy is the OPAC system to use?

i) Easy ( )
ii) Fair ( )
iii) Difficult ( )

16. How satisfactory are the OPAC system responses when you make mistakes?

i) Satisfactory ( )
ii) Acceptable ( )
iii) Not very satisfactory ( )

17. How quickly can you move from screen to screen with the OPAC ?

i) Quickly ( )
ii) Not very quickly ( )
iii) Slowly ( )

18. How good is the design of the OPAC display?

i) Good ( )
ii) Acceptable ( )
iii) Poor ( )

19. Which tool do you prefer to use for searching for library materials ?

i) Card catalogue ( )
ii) OPAC ( )

20. Why do you prefer this tool ?

21. Do you use the CD-ROM service which is available in the library ?

Yes ( ) No ( )

22. If the answer is 'NO', why not ?

23. If the answer is 'Yes'; how often do you use this service ?

i) At least once every month ( )
ii) At least once every 3 months ( )
iii) At least once every 6 months ( )
iv) Others ----------

24. Did you get all the information you wanted ?

Yes ( ) No ( )

25. How do you rate the CD-ROM service ?

i) Good ( )
ii) Acceptable ( )
iii) Poor ( )

26. Why the above answer ?

27. Do you have any comments and suggestions to improving electronic information services?

Appendix 2

Script of structured interview

1. How many staff do you have in your section and what are their qualification?

2. What was the OPAC plan from the beginning and what are the difficulties which you face now?

3. If there are many problems facing you, how do you solve them?

4. Do you have any specialist for organisation and production for OPAC?

5. What are the services available in the library?

6. Which are the services you intend to add for the library?

7. What is the extent of satisfaction with the level of the services which are now available in the library?

8. What is the future plan for the library?

9. Which kinds of computer are available in the library?

10. When do you begin setting up automation in the library?

11. When do you expect to finish the program?

12. Is there any special budget for CD-ROM?

13. If there is a budget, could you please tell me how much will it be for this year?

Appendix 3

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CUMENT SUPPLY CENTRE

TERNATIONAL PHOTOCOPY SERVICE

THE BRITISH LIBRARY

f book or periodical

	Volume	Part	Pages required

r and/or title of article

e of reference

Microform will only be supplied where the original is held as microform.

If not in stock please try back-up libraries ☐

FULL POSTAL ADDRESS (INCLUDING COUNTRY)

I have not previously been supplied with a copy of the above work by any librarian. I undertake that if a copy is supplied to me in compliance with the above request, it will only be used for research or private study.

Signature _____

Date _____

Appendix 4

Astra User Interface Help Function
Available databases

META : The ASTRA service meta-database contains general informations about the databases covered by the service. Each document Describe a database, its structure, the people responsible for the data and for the local service. Sometimes some notes are appended as major support to the users (in Eglish).

ACSC : IBM Study Contracts (Europe 1987) It contains the descriptions of several joint projects with IBM and Academic and Research institutions (in English).

AEP7 : AEP database (1987) The Advanced Educational Project Data Base (University of Texas) (in English).

STAR : IBM Study Contracts 1988 The ASTRA Data Base initially containing IBM Europe joint project descriptions (SOFTWARE and REPORTS) (in English).

CPUB : CIM publications database. This database contains the abstracts of papers that have been published by the staff and student of the CIM Institute - Cranfield Institute of Technology.

SOFT : The Softinfo database from the University of Bridgeport contains source informations on IBM-compatible software. The database consists of information on

~~PF1 = Help xedit F3 = return~~
~~F7 = page up F8 = page down~~
~~Astra User Interface Help Function~~
~~Available databases~~
~~software. The database consists of information on~~

4 types of sources: professional association, journals, directories and databases

DARC EEC Environmental Directives and state of implementation in Italy (in Italian).

STOP : The aim of the database is to document the political-juridical discussion, "de jure condendo"; the articles of printing of italian opinion, which seems very important for the legal and juridical- institutional change of the Country, are selected (in Italian).

BESD : Teaching software Description of software packages in education for different machines (in Italian).

BREV : CNR patents Description of the National Council of Research patents (in Italian).

BIBV : Bibliography on historic activity of Italian volcanoes, by Istituto di Geocronologia e Geochimica Isotopica - CNR, Pisa, Italy & by Gruppo Nazionale per la Vulcanologia - CNR, Pisa, Italy (in Italian).

CLAS : Classificazione IDG - Senato Correspondences beetween IDG and Italian Senate keywords (in Italian)

~~PF1 = Help xedit F3 = return~~
~~F7 = page up F8 = page down~~
~~Astra User Interface Help Function~~
~~Available databases~~
~~beetween IDG and Italian Senate keywords (in Italian)~~

CORI : Contratto Ricerca - All the documents relating to the italian law on research contracts (in Italian).

RMBO : Computational Linguistic Data Base Description of the books and the documents recorded on magnetic tapes at the Institute of Computational Linguistic in Pisa as source of information for linguistic analisys (in Italian).

QUAT : Quaternary Geology and Paleontology Description of research activities, in Italy, related to quaternary shorelines geology and paleontology (in English).

GEOL : Bibliography on Earth Science. (1980-1989).

Today accessible only by Italian people (in French).

RIC85 : CNR Research 1985 Description of the CNR research projects during 1985 (in Italian).

RIC86 : CNR Research 1986 Description of the CNR research projects during 1986 (in Italian).

RIC87 : CNR Research 1987 Description of the CNR research projects during 1987 (in Italian).

ONCO : The bibliographic list keep track of the works concerning the omgoing research related to the Oncology field in Italy; therefore, the list include works from different research groups in different institution. (in English).

ORGANI84 : CNR - Institutes 1984 Description of the research activities carried on in the CNR Institutes in 1984

ORGANI85 : CNR - Institutes 1985 Description of the research activities carried on in the CNR Institutes in 1985 (in Italian).

BIBL85 : CNR publications 1985 Publications, books, communications, internal technical reports and other pubblications produced by the institute in 1985 (1 document for each institute) (in Italian).

FINALIZ : CNR Target projects The description of the strategic research projects (in Italian).

STRATEG : CNR Strategic projects The description of the target research projects (in Italian).

BIED : Bureau International Education Documents related to education (in English).

RIEC : Resources in Education Documents related to education until 1980 (in English).

RIED : Resources in Education Documents related to education from 1981 (in English).

ARCH : Florence Historical Archive The description of the Historical Archive in Florence (in Italian).

BIBL : Italian Bibliographical Project Description of the italian project related to bibliography (in Italian).

LEGI : Literature for young Description of books and publications for children (in English)

LGFI : Literature for young (from Segnalibro) Description of books and publications for children (in Italian).

EUDI : Eudised (European Council) Documents related to Eudised (in English).

Appendix 5

KING ABDULAZIZ UNIVERSITY

DEANSHIP OF LIBRARY AFFAIRS

ONLINE SEARCH REQUEST FORM

For office use only

Search #_____

Date recvd. ---------

Date Requested : ----------

Requestor Name : ----------

Business Address : ----------

Title or Position : ----------

Telephone No. : (office) ---------- (home) ----------

Title of Search :----------

Narrative Description of Topic : (in your own words, please describe the search)

Please List any KEYWORDS that might Help : ----------

Years to be Coverd? (if not all) From: ---------- To: ----------

Language of Interest : English: --- Arabic: --- Others: ----------

Signature : ---------- Office Stamp

Note : All columns of this form should be filled completely. Incomplete forms will not be accepted.

Department of Studies and Development