

**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**



**THE  
ROBERT GORDON  
UNIVERSITY  
ABERDEEN**

**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**

**By**

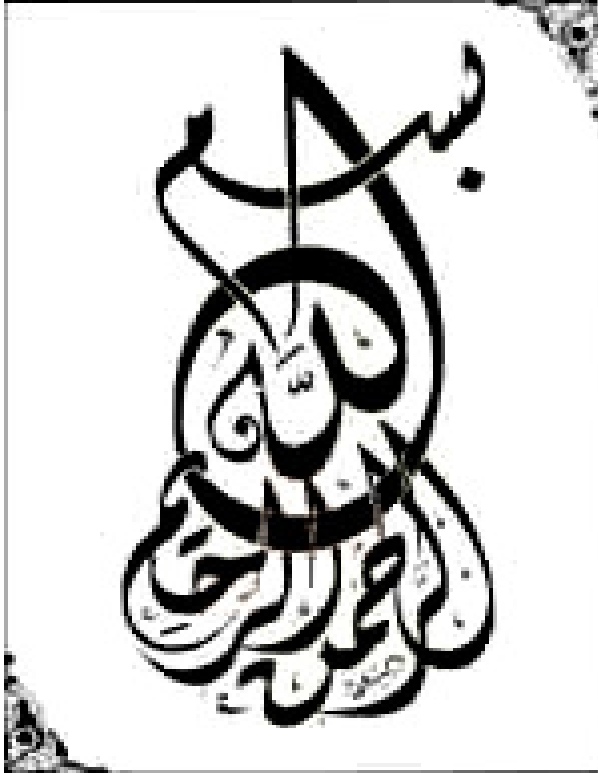
**Meshal Shehab Al-Fadhli**

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**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**



**In the name of Allah, Most Gracious, Most Merciful**

**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**

**Directed to**

**The precious soul's of my Father and my Father in law**

**My Mother and My Mother in law**

My wife

**Om-Shehab**

My son

**Shehab**

My daughter

**Fatema**

And

**My brothers and sisters**

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**Meshal Shehab Al-Fadhli, Msc. Electronic Information Management.  
Robert Gordon University, Aberdeen, Scotland, United Kingdom, 2005.  
Professor: Ian M. Johnson.**

**Abstract**

The main purpose of this study was to investigate the barriers that inhibited three major academic establishment libraries in the State of Kuwait: Kuwait University, the Public Authority for Applied Education and Training (PAAET), and the National Scientific and Technical Information Centre (NSTIC) from implementing Electronic Document Delivery to enhance the Inter Library Loan services, although it has been increasingly used in the western countries for more than 10 years.

A case study was conducted to examine the availability of relevant technology and personnel with appropriate expertise in these Kuwaiti academic libraries. Data were collected from reviewing the available literature, from interviews, and from ground observation.

In addition, 40 questionnaires were distributed to librarians, who were working to provide the Inter Library Loan service at these three Kuwaiti academic establishment libraries to assess staff attitudes and perceptions.

According to the study results, there are several of barriers that inhibited these Kuwaiti libraries from adopting new technologies to develop their services. However, the major factors are a need for understanding the importance of the resource sharing concept, familiarity and confidence in using IT, through having intensive courses, and serious initiatives to overcome the shortage of professional staff in these libraries.

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## Abbreviations Glossary

- **ARTTel**

Automated Request Transmission system for the electronic for Inter-Library Loan.

- **BLDSC**

British Library Documents Supply Centre

- **DDTP**

The Digitized Document Transmission Project.

- **dpi**

Dots per inch.

- **e-**

Electronic.

- **EDD**

Electronic Document Delivery

- **FTP**

File Transfer Protocol

- **GCC**

Gulf Council Countries

- **ICT**

Information Communication Technology

- **IFLA**

The International Federation of Library Association

- **IFRRO**

International Federation of Reproduction Rights Organisations

- **ILL**

Inter-Library Loan

- **ISO**

International Organization Standardization

- **IT**

Information Technology

- **JAL**

Jaber Al-Ahmeed Library

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- **KISR**

Kuwait Institution for Scientific Research

- **KULA**

Kuwait University Library Administration

- **LAMS**

Library Automation Management System

- **LAN**

Local Area Network

- **MIME**

Multipurpose Internet Mail Extensions

- **NSTIC**

National Scientific Technology Information Centre

- **OCLC**

Online Computer Library Centre

- **OPAC**

Online Public Access Catalogue

- **PAAET**

The Public Authority for Applied Education and Training

- **PC**

Personal Computer

- **PSTN**

Public Switch Telephone Network

- **RLG**

Research Library Group

- **VTLS**

Virginia Technology Library System

- **WAN**

Wide Area Network

## **Chapter One**

### **Introduction**

#### **1.1 Introduction to the Study**

The State of Kuwait is one of the smaller Arab countries, but it has three major academic establishments, Kuwait University, the Public Authority for Applied Education & Training (PAAET), and the National Scientific and Technical Information Centre (NSTIC), the information division of the Kuwait Institute for Scientific Resources (KISR). These academic establishments have several academic libraries and information centres, which are located on campuses in different areas of Kuwait, except for KISR, which is located in one specific area in the State of Kuwait. All of these Libraries strive to fulfil their users' thirst for information in different areas of knowledge, such as in Law, Islamic Studies, Arts, Science, Engineering, Education, Medicine and the Environment. The users of these academic libraries are students, faculty members, researchers and the public. Furthermore, in order to satisfy all of the traditional users, the academic libraries in the State of Kuwait have made great efforts to support teaching, learning and research by creating an academic educational environment and by attracting specialized expertise from all around the world to aid them in achieving a better quality of services for their users.

Furthermore, it is important for libraries and information centres to keep up to date with technological advancements and to respond to them rapidly in order to satisfy their patron's demands, which is the overall aim of a library.

## **1.2 The Background to the Study**

Recently, the use of automated systems and Information Technology (IT) applications in the libraries and information centres has become one of the most essential issues for the field of Libraries and Information Science.

The continued development of technology in all areas of computing and the ability of developers to provide new ideas and methods, has facilitated the process of transmitting, storing, retrieving, and accessing information and has enabled all types of libraries to expand their services and to deliver them to users beyond their own walls.

During the last 25 years the use of computers and the technology related to them has become one of the most essential tools for facilitating work procedures and services for any academic organization or establishment. Moreover, the developments in technology have forced all fields of life, whether medicine, industry, education, finance, or management, to utilize and to depend on the recent technology to facilitate achieving the main aims of any of their educational fields.

Furthermore, the appearance of technology in the information environment has caused a massive alteration in the nature of a librarian's work, and allows the libraries to expand their services by transmitting information and essential documents from inside the library or information centre world wide via the facilities that have evolved from the advancement of technology, making what has recently become known as information lines to support teaching, learning, research, and community services. Meanwhile, IT has played a significant role in the race towards globalization. In fact, IT has been an important enabler of globalization (Palvia and Palvia, 1996). In terms of communications, this facilitates sharing information.

### **1.2.1 IT Applications in Education and Libraries**

After the digital invention emerged during the 1940's, mankind moved toward a developmental stage, known now as the Age of Technology. This technology and the rise of it have caused massive alterations in the ways of thinking of the whole human race, and in particular, for the technology developers. This has led the developers to a time filled with numerous challenges.

The consequences of these challenges, and the competition between the developers has produced a new system for communications formed from different networking protocols, and these protocols are the reasons for the crystallization of the notion of the Internet.

Needless to say, during the 1980's the developers focused mostly on high speed transmissions for data or information and graphic interfaces, following the introduction of the first IBM Personal Computer in the beginning of the eighth decade of the last century. The appearance of these has also caused massive changes in all the different life domains, by providing to these domains the opportunity to share, access, and transmit data or information and complex multimedia information, whether locally or internationally, through different forms of communication technologies.

One of life's most important domains is education. Internet technology has affected all educational areas by providing two main characteristics, information and communication technology (ICT). These particularities are the essential components that have caused continuous and gradual changes in educational processes.

The role of the Internet has been entirely clear during the past 30 to 35 years, through providing for its users a myriad of electronic information in a rapid form, as well as providing flexibility for users to surf the Internet to retrieve and to locate sources of information through many electronic resources known now as search engines, or by obtaining this information from electronic storage online, which are recently known as databases.

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Furthermore, IT recently has become the tool and mechanism for enhancing progress by way of transmitting electronic information, as more and more libraries have become dependent on IT systems to support library services and work procedures.

The appearance of the Internet idea with its communications forms or methods, has affected all areas of life, because it facilitates all work categories, whether for services, procedures, or activities, in all types of organizations or corporations in their daily work transactions. This effect has evolved to the users of this technology an inclination to automate most work transactions, and due to the technology content of these characteristics and particularities for facilitating work procedures, furnishes users with an appropriate method for achieving the best quality of services.

As mentioned the recent advancement has affected all life domains, and likewise has affected libraries and information centres. Libraries are considered as information centres that commonly comprise all forms of information, whether electronic resources or not, to aid all types of users in different areas of knowledge, who are eager for information in all educational stages, undergraduate or postgraduate, whether for students, teachers, or faculty members.

The general concept of libraries and the use of IT between librarians have completely changed since the emergence of ICT. The criteria for successful performance in the information profession are constantly being raised as a result of innovations in technology, communications, and learning (Piggott, 1997).



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Moreover, the expansion of Internet and technology use with software and hardware among librarians has affected all library procedures and services. This effect has added new technical services to the libraries, which are based on electronics and which are commonly comprised of two sections, those of e-publishing and an automated management system to facilitate library and librarian procedures and services, known recently as the Library Automation Management System (LAMS), whether the systems are integrated or not.

### **1.3 The Aim of the Study**

The aim of the study is to explore the current use of technology in support of the Inter-Library Loan (ILL) services in the three major Kuwaiti academic establishment libraries.

### **1.4 The Research Questions**

In order to achieve its main goals, the study was guided by the following research questions:

1. What are the advantages that the libraries and information centres, in the State of Kuwait, will gain by using and implementing Electronic Document Delivery (EDD) technology for the ILL service?

The technology characteristics are several and are believed to provide many facilities and advantages for the librarians. Furthermore, it is desired to know what advantages libraries will obtain in using EDD technology to develop the ILL service in their academic libraries.

2. What are the main barriers that hinder these academic establishment libraries taking advantage of recent technology to develop the academic library services?

Recent technology has evolved with many types of tools to facilitate different procedures and services for librarians, which have not yet been fully approached at the academic libraries in the State of Kuwait. Thus, it would be helpful to understand the main barriers to develop the academic libraries services, especially the ILL through using the method of EDD.

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3. Why is EDD or Ariel technology not implemented and used in order to create a local resource sharing system between academic libraries in the State of Kuwait?

There are several characteristics and advantages that have evolved from the development of recent technology and which have contributed to creating a dynamic educational environment, through facilitating the delivery, transmission and reception of information rapidly through Internet technology, whether in the form of these information electronics or in hard copy (documents).

One of the essential concerns in this study is to verify and spotlight the components that have hindered one of the most recent and useful technological facilities, EDD, in the Kuwaiti academic libraries and information centres.

The contemplation obtained by exploring these issues may aid administrators and decision makers to develop appropriate plans for improving the functions and services of academic libraries and information centres in the State of Kuwait, in order to attain the best quality of services for the users of the concerned libraries, and overall to gain the opportunity to forward the main aim of the academic libraries, which is to support educational, cultural, and research programs.

### **1.5 The Objectives of the Study**

- A. Reviewing the literature to understand the latest developments in IT and in particular aspects of libraries and information science, specifically around Resource Sharing, Inter Library Loan, and Electronic Document Delivery.
- B. Conducting a case study for the concerned academic libraries to understand the local situation.
- C. Using a survey tool to assist the researcher to explore the main barriers to aspects of IT such as attitudes, awareness, skills, IT states, and the human resource of the libraries that are at work in the libraries studied.

### **1.6 The Purpose of the Study**

This study is conducted: to investigate the barriers that inhibited these three academic establishments from developing and from implementing the new software to develop and to enhance the ILL service in these academic libraries; to aid the librarians to provide this service, whether for sending or receiving in rapid form, using Internet technology; and, to produce suggestions and conclusions to develop the existing services in the Kuwaiti academic libraries and information centres in the near future.

The researcher hoped this study would encourage those three academic establishments in the State of Kuwait to re-engineer the system of their academic libraries services by thinking seriously about developing these manual services, especially the ILL service and to develop them by using the EDD via Internet technology.

Furthermore, the researcher wishes the concerned libraries in the present study to move forward and to take major, serious steps in creating and planning a system to ensure resource sharing and to make this concept a vital system to enable them to share information between these libraries.

### **1.7 The Reasons for the Study**

The researcher of this study has worked at one of the academic libraries that belong to Kuwait University, that is, the Engineering & Petroleum Library from 2000 up until 2003. The State of Kuwait is one of the most advanced developing countries. Its academic libraries provide their services to users using both automated and manual processes (Rahman and Ramzy, 2004). Meanwhile, user's needs for these academic libraries and their information are increasing day after day due to the sudden rise of all knowledge domains and the information explosion, which, itself, has caused a rapid increase in requests for developing and automating academic libraries and information centre services and procedures in the State of Kuwait.

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There were several efforts and meetings which took place between the executives of these library administrations of the three academic libraries regarding different ideas and the issues being raised for unifying and creating information lines for a resource sharing system (Mumtaz and Al-Jasem, 2001). However, there has been no focus on developing the existing services in these academic libraries by implementing the recent technology to develop the existing manual services and transfer them to electronic services, in order to facilitate the process for achieving a resource sharing system between these three academic establishments.

There are several reasons that have led to the undertaking of this research in the area of IT and Electronic Document Delivery, EDD:

- A. IT has become an essential issue and the most widely discussed topic in all domains, especially in the field of information science.
- B. There is a need for the development of libraries, and particularly for the academic libraries and information centres in the State of Kuwait because of the fact that supplying the academic libraries with the latest advancements evolving from recent technology is the means to lead these libraries to fulfil their patron's demands.
- C. There are a few academic researchers who have addressed recent IT and EDD development and the use of it in libraries, particularly, in the academic libraries in the State of Kuwait, and the Gulf Cooperation Countries (GCC).

There is a necessity for the development of the academic libraries and information centres in the State of Kuwait and development through IT and automated systems are essential as the means through which librarians can be led to achieve the best quality of services.

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Furthermore, one of the most essential services, still in a manual form in these academic libraries, is the Inter Library Loan ILL service, at a time when other academic libraries in the developed countries can deliver or transmit, and receive their information and documents electronically through one of the technological facilities, electronic document delivery, or EDD.

These may be facilitated by a software called Ariel or any other EDD, whether an electronic system or protocol. Although there are several methods for transmitting documents electronically, Ariel is considered by many as one of the best stand-alone systems with many advantages (Jackson, 1993; Landes, 1997; and Siddiqui, 2003), and would give the libraries concerned in this study a good method for transmitting all ranges of original texts, particularly the Arabic materials, electronically.

Therefore, there is a need for a study regarding ILL services in the academic libraries of the State of Kuwait. The academic libraries and information centres are the essential foundation for higher education, and thus academic library services must be improved with the latest technology.

Librarians and administrators need to have a good understanding of and a wide background in IT in order to respond rapidly to any development in recent technology, so that they can achieve the provision of the best services available to facilitate the process of electronic information management.

### **1.8 A Statement of the Problem**

The information explosion and the dramatic developments in technology have expanded the expectations of library patrons. Since no library or information centre can depend on self-sufficiency in terms of its collections and information materials (AL-Qudsi, 1999), the concept of "resource sharing" emerged in order to cover any shortage in library materials, particularly through using a service that evolved from this concept, Inter-Library Loan, as a supplementary aid to respond to user needs (AL-Ibrahim, 1993).

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After the looting that took place of library materials during 1990 by the Iraqi Army, these academic libraries were a good example of using this service and depending on it. However, these libraries are still providing the ILL service manually for requesters, although they are ordering the request electronically. To date there is no sign in these academic establishment libraries in Kuwait of using any system to facilitate the transmission process for electronic document delivery, despite these libraries depending on the ILL to cover the huge shortage in their collections.

Recent studies in the area of electronic document delivery show that all Western and Developed Countries are heavily using and depending on different methods to facilitate EDD.

Therefore, this study describes an investigation into the possibility of implementing existing Ariel software to facilitate electronic document delivery, EDD, via internet technology to enhance the ILL services in the three major academic establishment's libraries and information centres in the State of Kuwait.

### **1.9 The Dissertation Structure**

This dissertation comprises six chapters. The sequence and the structure of these chapters are as follows:

I. Chapter One:

This chapter exposes the general background to recent IT and its applications, and how it has affected all life domains, including academic library and information centre services. The aims and the research questions are followed by the general background to the study. The objectives of the study are highlighted in order to expose the path that is going to lead the researcher to achieve the aim of the study. In addition, this chapter explains the purpose of the study, reasons for the study, and other information.

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II. Chapter Two:

This chapter is concerned with the geographic area and general information about the State of Kuwait. Furthermore, it contains historical information about the emergence of the educational system and the libraries in the State of Kuwait. In addition, there is a brief background of the Kuwaiti academic establishment libraries concerned with the present study.

III. Chapter Three:

The third chapter presents the current state of the major academic establishment libraries before and after the Gulf War. It explains how the need for the concept of resource sharing was undertaken in order to fulfil patron demands, and how the ILL service facilitated the interaction of this concept. On the other hand, it explains the emergence of IT applications and how they affected the library and information centre domain.

The continuous developments in IT evolved the method of EDD and how this technology offers some great advantages for facilitating the ILL service in the libraries is explained. Furthermore, the human resource barriers in the State of Kuwait are explained. The final part of this chapter is about the essential components for creating ILL legal policy for information transmission between the libraries.

IV. Chapter Four:

This chapter is the methodology chapter; it describes the techniques to be used in conducting the present study and samples; instrumentation, and data analysis are also described.

V. Chapter Five:

This chapter presents the data that was analyzed from the study instrumentation to examine the barriers that hinder the concerned academic libraries and information centres in the State of Kuwait and to answer the research questions of the present study.

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VI. Chapter Six:

The last chapter investigates the results of the study findings and confirms them with reference to the previous scientific research in the literature to expose the significance of the findings. In addition, this chapter provides conclusions for the study.



## **Chapter Two**

### **General Information about the State of Kuwait**

#### **2.1 Introduction**

This chapter will present a study infrastructure by providing general and historical information about the State of Kuwait. The details in this chapter will cover the educational system and libraries and the main objectives of the Kuwaiti educational system, defining the higher education systems in the State of Kuwait and further, outlining historical information on Libraries and Information Science in the State of Kuwait.

#### **2.2 The Gulf Region & Geographic Information about the State of Kuwait**

The Gulf Countries, whether States or Kingdoms, are some of the most united countries in the world in that they correlate together due to the harmony of their cultures, heritages, and religion. The Gulf region comprises six countries, three of which are States, one is a Sultanate, and two are Kingdoms. The states are Kuwait, Qatar, and the United Arab Emirates, the Sultanate is Oman, and the kingdoms are Saudi Arabia, and recently, Bahrain.

The State of Kuwait is one of the most advanced developing countries of the area and is sited precisely in the Northeast corner of the Arabian Peninsula, at the edge of the Arabian Gulf. It is encompassed on the east side of the state by the Arabian Gulf, on the north and west sides by the Republic of Iraq, and on the south by the Kingdom of Saudi Arabia. The strategic location of the State of Kuwait is considered to be the pumping heart of the Arabian peninsula region, which links the desert and the ocean, and is the authentic gateway to the Arabian Peninsula (see Figure 1 on the next page for Kuwait's strategic location) (Google, Online).

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**Figure 1:** Kuwait's Strategic Location (Worlds Countries. info, Online)

**2.3 General information about the State of Kuwait**

The name "Kuwait" appeared during the middle of the 11<sup>th</sup> century and is derived from "Kut", which means "The Invincible Citadel". In the past the State of Kuwait was known by another name, "Al-Quryen" which means "the hill" or "elevated land", and was the term which was used mainly by Dutch, Portuguese, and British migrants. The State of Kuwait is a constitutional autarchy, and is headed by the Amir (The Prince). The British "oversaw foreign relations and defence for the ruling Kuwaiti "Al-Sabah" dynasty from 1899 until Independence" (The World Factbook, 2005) on June 19, 1961. Although, the actual date was June 19, 1961 as mentioned, the celebration has taken place each year, on February 25, to honor the rule of Sheikh Abdullah Al-Salim Al-Sabah.

After 29 years of independence, the State of Kuwait was attacked and invaded, and occupied by Iraq for seven months, from August 2, 1990 until February 26, 1991.

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The Coalition, force, headed by United States and British units, began a ground assault on February 23, 1991 and completely liberated the State of Kuwait in four days.

Kuwaiti society is divided into five strata: the ruling family, old Kuwaiti merchant families, different Bedouin tribes who left the Arabian Peninsula and became city residents, Arabs and Muslims from other countries who had been given Kuwaiti citizenship because of an immediate need for a well-educated workforce after the exploration for oil, and lastly, foreigners.

The official language of the country is Arabic but English is widely spoken and understood by the population as a second language. The Islamic religion is the chief influence on people and their guide for life. More than 85% of the population is Muslim and about 15% are Christians and practitioners of other religions (The world Factbook, 2005).

Before oil was discovered in the State of Kuwait, and before the advancement that oil brought to the country up until the middle of the 1950's, there was not that much work activity, and the people in or around the Arabian Peninsula were largely Bedouin, or families that were separated from different Bedouin tribes, and who, significantly, depended upon an oral culture (Anon, 1990).

Originally, Kuwaiti society was mainly divided into two life styles. This division was the main social structure for work activities for over two hundred years. The first section of the society or life style was what were called the "Civilized People", so called by the people who lived in it. They were city residents in different residential areas at the east side of Kuwait beside the shoreline. These residential areas, whose main work activity and livelihood depended mostly on the fortune and the blessing that "Allah" (God) has given to the Kuwaiti people from the sea, whether by fishing, diving to collect seashells which contain pearls, or travelling to different countries for business, were known as "Al-Dyrah".

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The most distinguished country for business at that time was India and the vehicle for all these activities was known as "AL-Boom", which is a ship made out of wood.

The second area of work activity was relied on totally by the Bedouins, whose lives depended on the migration between the Arabian Peninsula and the Arabian countries around it and where migrants were always searching for the best place for pasturing their cattle for grass and water. The means of transportation that has always been used for travelling were Camels, known as "The Ships of the Desert", and horses. In both areas of work, life was disturbing and uncomfortable, especially when the time for travelling for both ships and camels took between several weeks and several months.

This really shows how slow the transportation system was at that period of time, especially if there were different types or items of information that needed to be delivered from one country to another. Beside the transportation forms above, there was another method for sending and receiving messages, carrier pigeons. The pigeons were sent from station to station in shorter journeys combined to make a long one. This method was used for emergencies or for speeding up the transmission process, for carrying short messages that could not be delayed. This method of sending messages from node to node is similar to what has been known recently as the "Telegram". The pigeon types that were used at that time in the State of Kuwait for that process are known as "Hamam Al-Zajel" or "Carrier Pigeons".

This was all to change. Oil was discovered in Kuwait in 1937 and was exported for the first time in 1946. It ranks third in proven oil reserves in the Middle Eastern area, after Saudi Arabia and United Arab Emirates. Kuwait's economy depends mainly on oil production and overseas investments. The State of Kuwait has one of the highest per-capita incomes in the world.

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The total area of the state is 17,818 square kilometres (6,960 square miles). The total population of the State of Kuwait is 2,208,790 million, of which 883,516, about 36% of the total population, are Kuwaiti citizens, and 1,325,274, around 64%, are residents from different countries (Annual Statistical Abstract, 1997). Furthermore, "57% of the population is under the age of 25" (Wheeler, 2003).

#### **2.4 The Educational System and Libraries in the State of Kuwait**

The history of the educational system goes back to the late 1800's and to the beginning of the 1900's when there were very few educational activities in the State of Kuwait, and there was no public educational system paid for by the government during that period of time in the State of Kuwait. Only a small number of Quranic schools were scattered in different residential areas in the two main cities, which are called Kuwait City and Al-Jahrah City. These Quranic schools were known as al-ketatib, and the teachers of these schools were mostly religious and literate persons known as al-mullah.

Public education started to appear in the State of Kuwait with the first elementary school, the Al-Mubarakiyah School, Al-Madrasah Al-Mubarakiyah, established in 1921. After a few years another elementary school called the Ahmadiyah School appeared. Neither school had formal libraries until 1936 (Zehery, 1994).

As for libraries in the State of Kuwait, in the early years of the 1920's, the first library in the State of Kuwait was established by the efforts of eighteen Kuwaiti citizens during 1923 and was called the Al-Ahlia Library or the Peoples' Library (Al-Maktabah Al-Ahlia). It is estimated that the library contained a modest collection of 1,500 books (The National Council of Literature, Arts and Letters. 1986), but most of the collection was either lost or damaged due to the lack of continuous support and several relocations of the library. However, in 1936 the first Central Public Library was constituted by absorbing and building on the collection of Al-Maktabah Al-Ahlia (Badr, 1975).

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In 1939 the government of the State of Kuwait took control of education and had 17 schools located in different areas by 1945. At the end of World War II, the government of the State of Kuwait began to develop the social services by supporting them and investing massive amounts of money from oil revenues.

The growth and development of the Kuwaiti educational system can be largely credited to the wise leadership of the ruling family, "Al-Sabah" dynasty, who supported the educational system with the wealth that "Black Gold" had brought to the state, especially during the high oil prices years in the 1970's and early 1980's, which allowed rapid development for all Gulf Council Countries (GCC). Social changes followed economic growth.

Education became one of the highest priorities for the government of the State of Kuwait. Recently the State of Kuwait has had one of the best educational systems in the Middle East, and all stages of education are free. Article 40 of the Kuwaiti constitution stipulates:

“Education is a right for all Kuwaitis, guaranteed by the state in accordance with the law and within the limits of public policy and morals” (the State of Kuwait – Constitution, 1962).

The Kuwaiti government opens in the State of Kuwait all the schools, needed for its students starting from kindergarten and going up through high school in each residential area.

### **2.4.1 Educational Objectives in the State of Kuwait**

Kuwait's first concern is to provide for its students the best quality of education from all over the world and to gain the over-all best education for its students.

In order, to achieve the best quality of learning, which is one of the main aims for any educational establishment, the Ministry of Education in the State of Kuwait during 1985 issued a statement stating two main, general and clear objectives for the educational system in the State of Kuwait. The objectives are as follows:

- A. To aid all educators to achieve comprehensive and integrated spiritual, mental, social, psychological and physical growth to the maximum of their abilities and possibilities.
- B. To enable the learners to reach self-fulfilment and to participate in realizing the programs of Kuwaiti society, in particular, and those of the Arab and Islamic world, as well as those of humanity in general (Ministry of Education, 1985).

As seen from the objectives above, the Ministry of Education in the State of Kuwait defined the role of the educational process via the exploration of educational areas and contents, maintaining and equalizing the equation between the culture of the Kuwaiti society and the demand for the continuous development of learning, in keeping with contemporary practice in education, whether process or system.

#### **2.4.2 Higher Education, Kuwait University and its Libraries**

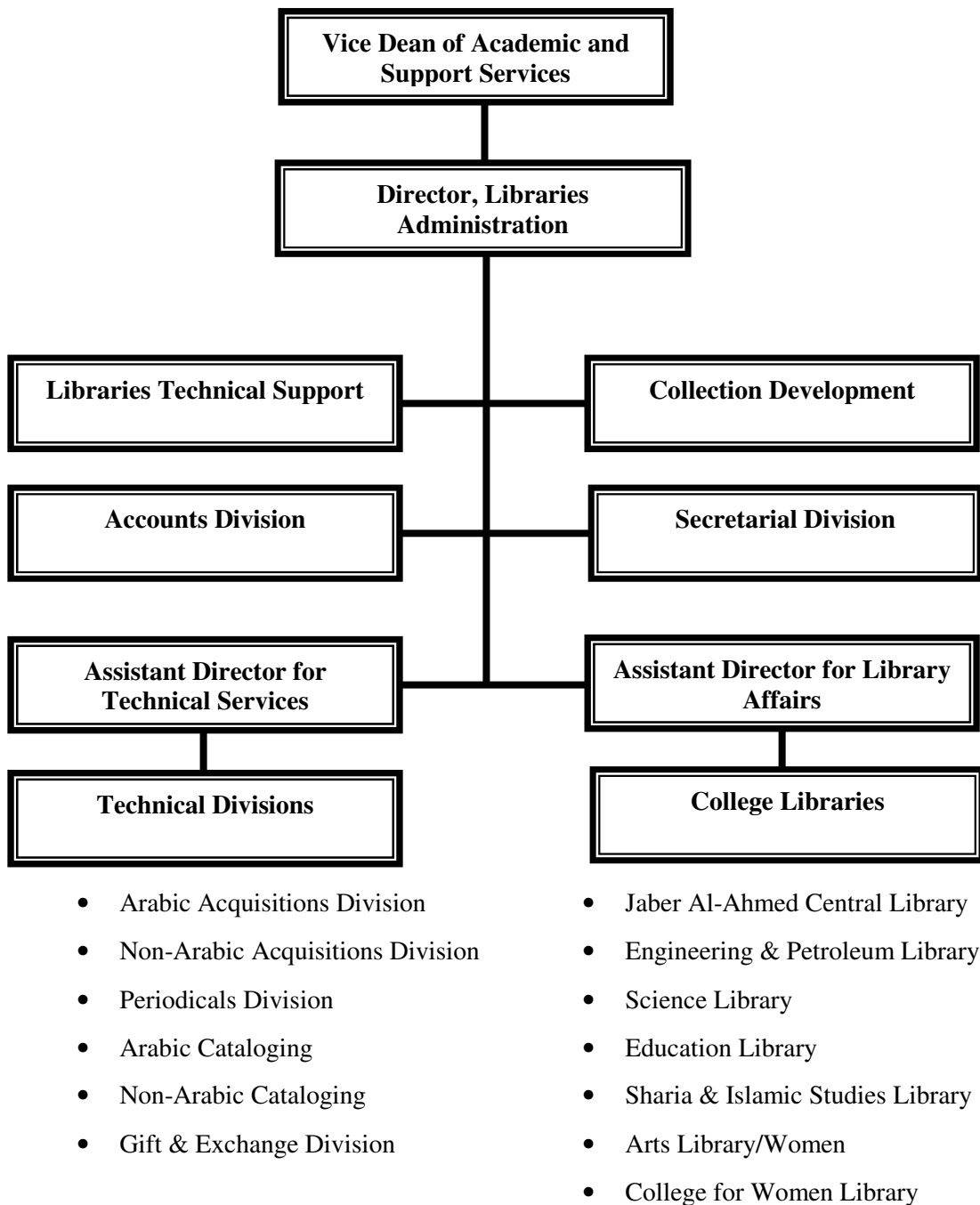
Higher education began to emerge in the State of Kuwait during the 1960's after the government of the State of Kuwait established the first university, Kuwait University. During that period of time up until the beginning of the 1980's, Kuwait University was the only university in the State of Kuwait. The University consisted at that time of 30 departments in different educational fields, and with its inauguration, Kuwait University instituted the first academic library, which was called the Central Library, to serve all educational fields related to the University departments.

The Central Library comprised the National Heritage Library, and the United Nations Publications Library. With the graduate development of the University, eight libraries were established at several other campuses of Kuwait University.

During the year 2002, Kuwait University inaugurated the first Central Library, which combined four libraries or information centres into one main central library, called The Jaber Al-Ahmed Central Library (JAL), and contained the collections of books, journals and electronic databases of the Arts, Social Sciences, Administrative Sciences, Law Libraries and Information Centres. Recently, Kuwait University contained 12 faculties with 43 academic departments and 35 Master's Degree programs. It has about 19,000 students, both Kuwaiti and International students, divided between males and females, with 970 faculty members (Al-Ansari and Al-Enizi, 2001). It contains 10 decentralized faculty libraries, four of them in one main central library (JAL). (See Figure 2 on the next page for The Chart of the Kuwait University Libraries Administration, Source: Kuwait University Libraries Guide, 2004).



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**Figure 2: (The Organizational Chart of the Kuwait University Libraries Administration, Source: Kuwait University Libraries Guide, 2004).**

### **2.4.3 Applied Education and the Public Authority for Applied Education and Training (PAAET)**

Applied education emerged in separate institutions in the State of Kuwait at the beginning of the 1960's and up to the middle of the 1970's, to meet the developmental requirements of the nation, dedicating the revenues from oil production to it, and affecting all human resources in the country, thus causing a rapid development of modernization in the Kuwaiti environment.

The government of the State of Kuwait proceeded to create a native system for qualified vocational training for both the governmental and private sector. Thus, during 1982 most of these institutions changed their educational systems to become colleges and were combined together under one educational establishment, which is called the Public Authority for Applied Education and Training. PAAET was established according to Law No. 63 on 28 December 1982 (Anon, 1982) to contain most applied education areas and to fill the demand for technical graduates to fulfil the job market needs in the State of Kuwait.

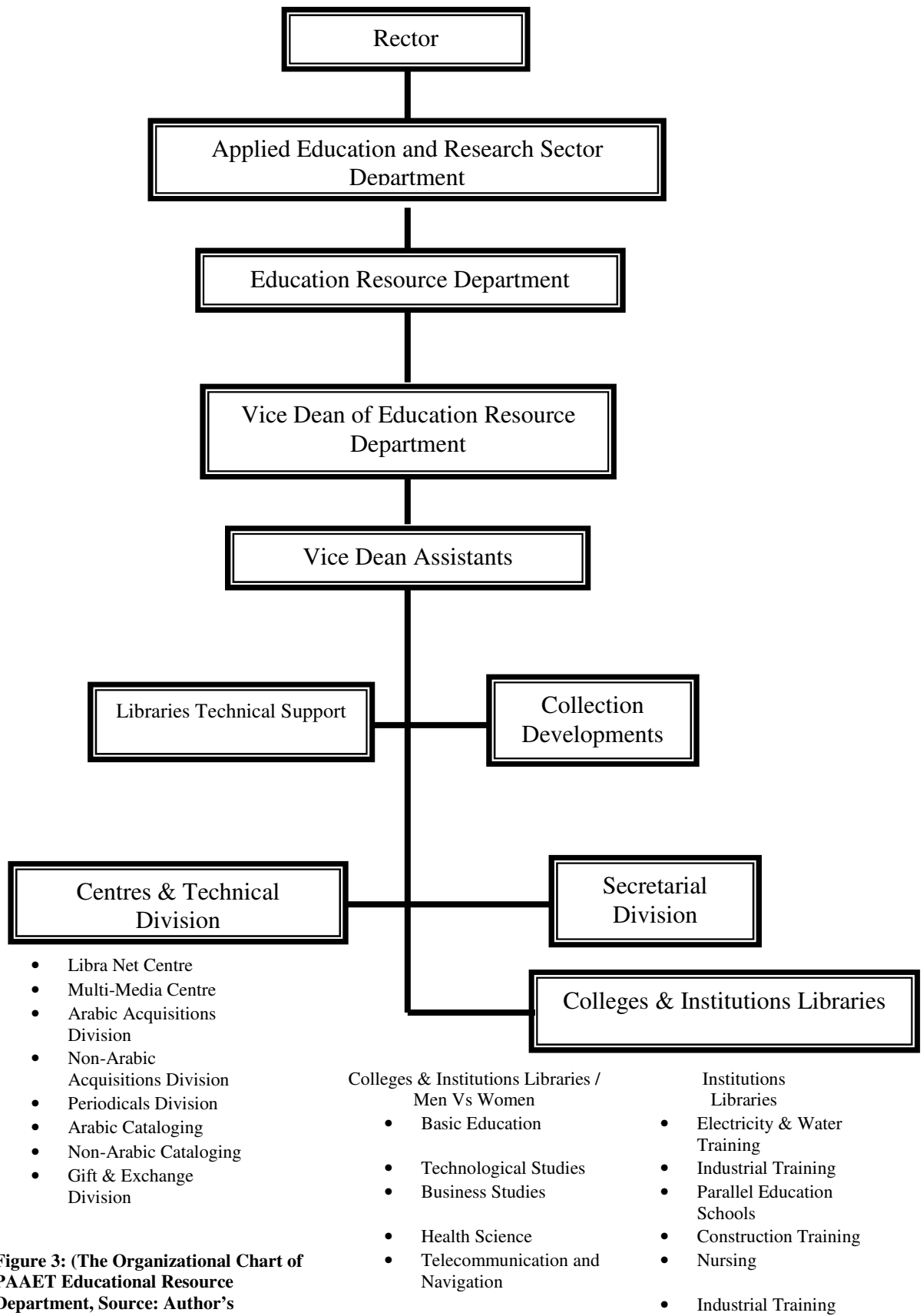
The graduates from the Public Authority colleges and institutes get either a Bachelors Degree or a 2-year Diploma. Colleges and all institutes of PAAET offer students a two-year Diploma, excepting the College of Basic Education, which offers its students after graduation a Bachelor's Degree in more than 17 different areas of the education field (Al-Damin, 2003). Hitherto, there have been no postgraduate studies in PAAET, which makes for few research activities. There have been several attempts to achieve that level of education and to increase scientific research. Recently, it has been one of the essential undertakings that PAAET is looking forward to carrying out in the near future (Al-Hajri, 2002).

Presently, PAAET comprises five colleges and eight training institutes (Saleh, 2003), and because of the prohibition in Islamic religion and the traditions of Kuwaiti society against coeducation, each college has two separate campuses, one for males and the other for females, all located in different areas of the State of Kuwait (Al-Ansari, 1992).

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These contain overall a total of 17 colleges and institutions comprised of different types of applied and technical education, with a total of 17 centralized libraries (See Figure 3 on the next page for an Organizational Chart of The PAAET Educational Resource Department, Source: Author's observation, 2004).

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**Figure 3: (The Organizational Chart of PAAET Educational Resource Department, Source: Author's Observation, 2004).**

#### **2.4.4 The Kuwait Institute for Scientific Resources (KISR)**

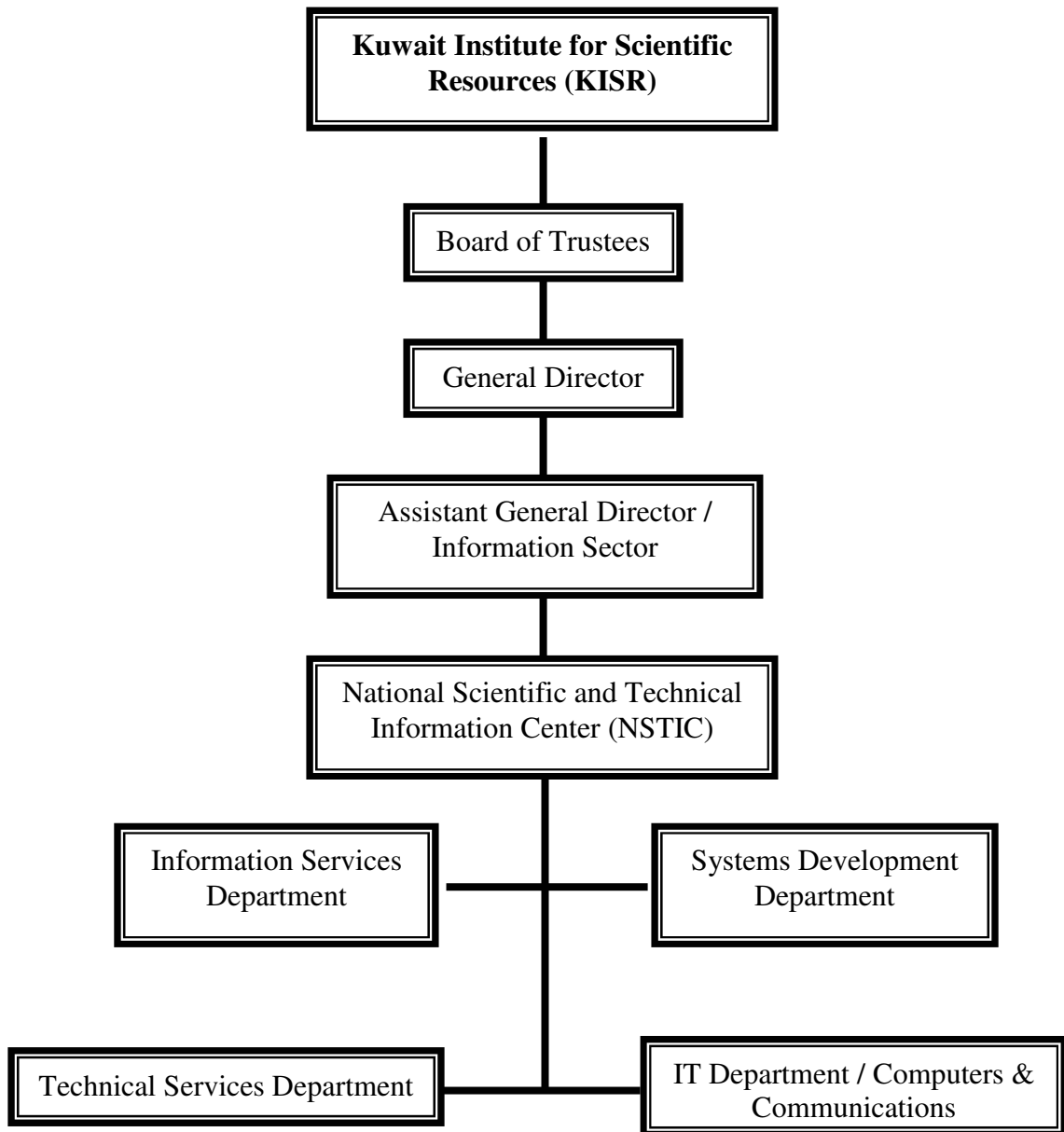
The government of the State of Kuwait has expanded its concerns to the development of research activities, and understood the necessity for research for the state and the Arabian region, and this has been centralized by supporting one of the most important research institutes in the Middle East, the Kuwait Institute for Scientific Resources (KISR).

This institute was established in 1967 by the Arabian Oil Company, Limited (Japan). At the beginning this research institute was established to fulfil the obligations for 3 areas of applied scientific research, which were: Petroleum, Desert agriculture, and Marine biology. KISR restructured its scientific research areas after an Amiri Decree was issued during 1973 to carry out research in other scientific areas that related to industry, energy, agriculture and which would enable the national economy to share in and to contribute to the social and economic developments of the state.

In 1981 there was a further Amiri Decree, which extended the role of KISR across not only Kuwait, but also across the Gulf and the Arab countries (KISR, Online).

KISR gets its information from a centre called The National Scientific & Technical Information Centre (NSTIC). This Centre supports in particular KISR's programs and projects in research and development and also projects in general in the State of Kuwait. The NSTIC role for KISR is to develop, retrieve, and disseminate recent information resources whether inside or outside the institute in scientific and technological areas related to the demands of KISR. Likewise, this centre acts as a national library or national information centre by obtaining government publications and annual reports in the area of science and technology in order to build and organize a collection of Kuwaiti resources and to make such resources available for researchers (KISR, Online). (See Figure 4 on the next page for the Organizational Chart of NSTIC, Source: KISR, 2002).

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**Figure 4: (The Organizational Chart of NSTIC, Source: KISR, 2002).**

## **2.5 Summary**

This Chapter has summarized general information about the State of Kuwait and has provided a brief historical and geographical background of the state and the surrounding region. The cooperation between the Gulf countries has become a more essential and vital component of development every day. There are many customs, which have evolved from the Arabic heritage, and these make for a strong interconnection between these countries.

Before the discovery of oil, life was simple in Kuwait and education was only a way of improving reading and writing skills. Information and document transmission within Kuwait and externally was very slow and the means that had been used for the delivery processes were primitive.

The discovery of "black gold" changed and positively affected the Kuwaiti nation. Its social and economic sides were dramatically altered, which, as a result, developed the entire state, especially after the huge revenues that were brought to the country from the oil during the late 1970's and up until the middle of the 1980's. The ruling family of Kuwait, as well as the government, have focused on the educational process and have encouraged the development of it. This can be noticed from the emergence of higher and applied education, as well as the attention paid to research activities for the State of Kuwait, the Gulf countries, and the Arab world.

### **Chapter Three**

## **The Management of the Major Academic Libraries in Kuwait and the Inter- Library Loan Service Via Electronic Document Delivery**

### **3.1 Introduction:**

The rapid information era, brought about by the spectacular advancements in information technology IT has amplified both expectations and perceptions of the role of libraries and information centres. Over about twenty to twenty five years, academic libraries and information centres have fundamentally changed their ways of providing services and procedures to their patrons in ways that could not possibly have been previously imagined.

The advancement in technology and the appearance of the Internet have totally affected all library services through an emerging variety of IT applications for retrieving, storing, and transmitting information rapidly between libraries, whether locally or internationally. The impact of rapid information transmission via the Internet has changed the scope of libraries and the librarian's role and has also affected the notion of resource sharing and its methods for providing the best information electronically for the most users at the most reasonable cost (Kent, 1974).

Similarly, Inter-Library Loan (ILL), which is one of the most significant tools for resource sharing, has been affected by recent IT developments, especially after the appearance of Electronic Document Delivery EDD technology via the Fax machine.

Despite the fact that resource sharing has long been a part of the librarian's armament, the effectiveness of sharing information has been inhibited by several factors, including legal issues and libraries staff.



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All of the dramatic developments in recent technology have caused a growing recognition of the need for a major change in the character of libraries and information centres world-wide, and this is true, likewise, for the academic libraries in the State of Kuwait. Indications show that there have been major alterations in the library services in the State of Kuwait, especially at the academic libraries after the information technology revolution, which took place in the work processes of the entire country. However, while the academic libraries in the State of Kuwait have been content with the advances developed from recent technology, these academic libraries have also been suffering from having to expend a huge effort to rebuild their collections after the looting that took place by Iraqi Army during 1990. Furthermore, this reconstructive process which faced the libraries in the State of Kuwait gave additional motivation to these academic libraries or information centres to incorporate recent developments and to seek at the same time to utilize the latest advancements from recent technology in renewing and expanding their library services and procedures and to deliver an improved service to the patrons beyond their walls.

### **3.2 Academic Libraries Collections**

The explosion of information and the increasing demand for it have caused a rapid expansion in the intellectual activity in all areas of knowledge, all around the world, and this has affected academic library collections. This continuous intellectual activity has made the libraries and information centres want to follow the latest advancements in all areas of knowledge in order to develop their collections, to fulfil the unpredictable demands of their patrons and to support research activity (Al-Sabak, 2002).

Unfortunately, the collections of the Kuwaiti academic libraries were, in every case, severely affected by the looting that took place during the end of 1990. However, the scale of loss was different among the various academic establishments, libraries and collections.

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The invasion of the Iraqi Army destroyed not only the collections but also the entire educational process. This destruction to the academic library materials in Kuwait has forced the librarians to use and implement all the methods which are offered from recent technology in order to make up for the shortages in their collections, the librarians particularly depending on the ILL service ( Al-Motari, 1996). Below are figures for the total collections for each establishment before and after the invasion.

### **3.2.1 Kuwait University Libraries Administration (KULA)**

Before the Iraqi Army invasion of 1990, the collection consisted of 700,000 volumes, 300,000 items of audio-visual material and microfilm (Kuwait University Libraries Guide, 2001). The assistant dean of Kuwait University libraries stated to one of the Kuwaiti newspapers that there were approximately 4850 Arabic and non-Arabic scientific periodical titles and that several of these periodicals had back issues going back to the beginning of their publishing histories during the 19th and the beginning of the 20<sup>th</sup> Centuries (Anon., 1994).

Currently, Kuwait University library contains about 323,514 volumes of Arabic and non-Arabic monographs, references, manuscripts, dissertations, theses, directories, and reports in different fields of knowledge. Moreover, Kuwait University Libraries subscribe to more than 2898 Arabic and non-Arabic scientific periodicals, and the collection of audio-visuals for the academic libraries contains approximately 20,000 items (Kuwait University Libraries Guide, 2004).

The total loss to their materials had been as much as 50% with the invasion, occupation and looting by Iraqi Army (Anon., 1994) and more probably 95% (Salem, 1992; Al-Ibrahim, 1993). Kuwait University libraries are aiming to rebuild their collections in their libraries to reach the number of materials that existed before 1990 and have continued to grow. Kuwait University's rebuilding process has brought their collection to date to almost half of what they had before the invasion.

### **3.2.2 The Public Authority for Applied Education and Training (PAAET)**

It is commonly known that the most significant thing about PAAET collections, whether books or journals, is that they contain a lot of Arabic language materials. This is because all the programs in PAAET, whether in the colleges or institutes, are taught in the Arabic language. The collection of PAAET materials before the invasion of the State of Kuwait was 142,774 books, of which 95,148 were Arabic, and 74,626 were foreign books. In addition, PAAET subscribes to 185 periodicals, of which 143 are foreign and the rest are in the Arabic language (Library Administration, 1988).

Since the liberation of the State of Kuwait from the Iraqi Army invasion, PAAET has been moving toward building up their collections rapidly, in order to fulfil students' requirements. The total books collection is 130,000 Arabic and non-Arabic volumes (Abdel-Hameed, 2003). PAAET has in its libraries about 170 Arabic and foreign scientific periodicals.

PAAET is rebuilding their collection rapidly and has reached more than three quarters of the number of their previous collection, despite the shortage in staff that PAAET Education Resource Department suffer from, (See Appendix 2, Interviewee D, 2004).

### **3.2.3 The National Scientific Technical Information Centre (NSTIC)**

This centre is the information division of KISR. The main aim of establishing this centre was to facilitate the task of locating and retrieving information for KISR researchers, by supporting them with the desired information in a rapid form and by aiding the researchers in their research, programs, or in the projects that are provided by KISR. The main areas for these research projects are science and technology, thus the NISTIC collection is concentrated on those two main areas. Hitherto, NISTIC has contained about 40,000 Arabic and non-Arabic books, out of which 4,000 are in the Arabic language. The total number of scientific and technological periodicals that NISTIC provide for its users is 397; one hundred of them in the Arabic language (See Appendix 2, Interviewee H, 2004).

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As mentioned above, the scale of loss was different between these academic establishments and, NSTIC did not suffer during the process of rebuilding their collections as much as did Kuwait University, nor did the PAAET libraries, because of the range and the small size of their collections (See Appendix 2, Interviewee H, 2004).

As for the three establishments where the looting to their collections took place in 1990, the destruction that affected the infrastructure of these academic libraries has taken a major financial provision in order to get the services of these libraries back to something like normal. Although the State of Kuwait is one of the world's wealthiest countries, replacement is still a huge drain on the budgets of these academic libraries, which as a result has obstructed the development of these library services.

On the other hand, the phase of rebuilding the collection that these academic libraries have been through up until now is considered to have been one of the most difficult phases that these academic libraries have ever been through. What has made the task of the rebuilding process hardest for the librarians who work for these academic libraries are the poor standards and the lack of cooperation between these Kuwaiti academic libraries, as well as the academic libraries in the countries around the State of Kuwait.

Khalid (1999), and many other Arabic researchers, all explored and noted that "Arabic materials in the Gulf countries remain elusive because of the lack of Arabic bibliographic tools, due to non-existing standards for cataloguing and the continuous process of producing non sharable records."

### **3.3 Resource Sharing**

Historically, hundreds of years ago in the Arab world, Arabic scholars used to travel across the Arab countries, heading for different libraries, in order to search and retrieve the latest information in different areas of knowledge (Aman, 1989). They kept up to date and purchased important and essential items such as books and references and carried them with them on the way back. Later, the concept of resource sharing began to emerge between libraries and information centres as significant activities with which to facilitate information transmission between the libraries and information centres.

Resource sharing between libraries and information centres is a concept that evolved many years ago, since no single library or information centre can fulfil the needs of its patrons (Al-Qudsi, 1999). The essential need for specific information or resources that do not exist in a single library was one of the main reasons for the emergence of this concept. Furthermore, the notion of resource sharing and the need of it evolved from the emergence of different methods which facilitated the information transmission between libraries and information centres locally as well as internationally. During the month of April 2001 the International Federation of Library Associations (IFLA) approved and clarified the essential need for resource sharing between libraries and information centres, whether locally or internationally, and it encouraged libraries and information centres to coordinate together with the following statement:

“The shared use of individual library collections is a necessary element of international co-operation by libraries. Just as no library can be self sufficient in meeting all the information needs of its users, so no country can be self-sufficient” (IFLA, 2001).

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Another aspect that facilitated the emergence of resource sharing were the latest advancements in technology and the increasing use of them to connect countries as well as continents. In today's work, library service processes have been developed by transferring from providing traditional library procedures and services to electronic forms. This has had the enormous affect of a continuous and gradual advancement of information technology development, especially through data communication networks that gave the opportunity to libraries and information centres to access databases and library materials from afar.

There is a strong need for information systems to be able to manage the rapid growth of information effectively. Yet, the scope of resource sharing in this technological and digital age has encompassed information, technology, collections and staff, and such activities and services of resource sharing must be provided with the use of integrated library systems and data communication networks and delivered by professional librarians (Rush, 1992).

In brief, resource sharing, defined by different methods such as union catalogues, whether for books or journals, CD-ROMs, ILL services, etc., are combined together to provide better services and procedures for libraries to save costs (Rush, 1992) as well as time. Recent and future IT development provide other means of resource sharing services and activities and continuously enhance this concept.

One of the distinguished methods of resource sharing systems is the service commonly known in libraries and information centres as Inter-Library Loan ILL. Libraries and information centres mostly depend on local and international ILL requests to complement their collections or to fulfil their patron's demands for information. This service has been enormously affected by the continuous development of information technology, especially after the emergence of Internet technology.

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Therefore, the main issue of this study is going to be to illustrate the advances in document delivery that have been made possible by rapid electronic transmissions through the Internet.

### **3.4 The Use of the ILL service by KULA, PAAET, and NSTIC**

The resource sharing between the libraries and information centres using the significant service known as ILL is one of the most important services in all types of libraries all around the world, because of its speed and accuracy.

Because of the destruction of the infrastructure of Kuwaiti libraries, due to the Iraqi Army invasion during 1990, KULA, PAAET, and NSTIC have made every possible effort to rebuild their library collections in order to overcome the shortage, while offering information services to the users of their libraries. Nevertheless, these libraries and information centres are still suffering from the effects of the destruction of their collections. Therefore, these libraries depend upon this service (Vassie, 2000) locally and internationally (Gulf countries and British Library Document Centre (BLDSC)). Although, KULA, PAAET, and NSTIC are using electronic forms to make ILL requests both locally or internationally, this service is still supplied by using conventional post mail and the Internet has not yet been used for the purpose of resource sharing, nor has the facility of EDD been used for transmitting large data or information packets rapidly (Siddiqui, 2003).

Furthermore, the Gulf countries are still using the Internet mostly as an information resource for retrieving information from different web sites and for accessing a myriad of databases online, but are not using the Internet as a communication tool to facilitate resource sharing, especially for sending and receiving large packets of data (Khalid, 1996).

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ILL is a conventional service that gives the libraries or information centres the chance to share knowledge between them. This means that if the library does not own the resource, or have access to a certain material on the Internet, for instance, a book, journal article or any form of electronic information resource, the library through this service could order it or request it from another library or information centre that holds this book or journal article, keeping in mind certain ILL policies or strategies concerning copyright. The purpose of the service is to support the students, researchers, and faculty members in their studies and researches by obtaining needed or required information materials from other libraries or information agencies, through conventional mail.

The annual report for KULA and NSTIC for the year 2003 shows that there were a total of over 316 local requests from NSTIC to KULA, whereas there were about 236 requests from KULA to NSTIC (Kalander, 2004). Internationally there are two ways for KULA and NSTIC to provide the requested services for their users.

First, there were a total of 622 requests from KULA to some of the academic libraries in the Gulf countries during 2003; however, NSTIC made only 36 orders and they were only from the Sultanate Qaboos University in Oman (Interviewee H and Kalander, 2004). These requests, which were exchanged between KULA and NSTIC, and also were offered from the Gulf countries, were made in an amicable agreement and free of charge. There is, as of now, no clear strategy or copyright rules controlling or preserving the rights of the publisher and the author of any intellectual production in this friendly process. In addition, there are no unified electronic bibliographic tools for obtaining these items (Khalid, 1996).

Second, BLDSC is usually the final choice for KULA and NSTIC to find or to provide the information that is ordered from this ILL service. The annual report for the year 2003 for KULA and NSTIC explores the fact that KULA had made about 1703 orders from BLDSC, whereas NSTIC had made 941 orders (See Appendix 2, Interviewee H and Kalander, 2004).



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KULA offers this service only for teacher assistance, research committees, and postgraduate students, it allows teaching assistants to get from this service with BLDSC only 100 pages per semester, whereas, it is chargeable for research committees and postgraduate students (See Appendix 2, Interviewee E, 2004). However, NISTIC provides this service with unlimited orders for KISR researchers and it is chargeable for others (See Appendix 2, Interviewee H, 2004).

Although, KULA and NSTIC are using electronic mail to make ILL requests from the GCC countries and Automated Request Transmission system for the electronic transmission of inter-Library loan requests (ARTTel), to order from BLDSC (See Appendix 2, Interviewee E, 2004), however, as mentioned previously, this service is still applied by using traditional mail, which is costly and time consuming (Siddiqui, 2003). A local request normally takes between 2 to 3 working days to receive. However, the international requests from the Gulf countries take about 4 to 6 weeks via ordinary mail, whereas orders from BLDSC take about 2 to 3 weeks because of using the commercial mail, mostly with DHL (See Appendix 2, Interviewee E and H, 2004).

As for PAAET, it used to make orders from KULA, and they were also free of charge. After checking the bibliographic lists that were provided from Kuwait University libraries, if PAAET did not find the item, they directly ordered it from BLDSC. PAAET provided the ILL service only for teacher assistance with a limit of 3 articles per year. PAAET had made only 20 requests from BLDSC, and this service was suspended both locally and internationally, due to the shortage of librarians and also was disinclined by PAAET researchers in preference to KULA and NSTIC services (See Appendix 2, Interviewee G, 2004).

### **3.5 The Effect of IT Applications in the Libraries and Information Centres Services**

There are several research studies, which discuss and evaluate the technological aspects of the automated systems in academic libraries worldwide. Those research studies aid librarians to enhance their vision for achieving the best quality services. These studies show researchers in the field of libraries and information science the evidence and the types of problems that face these fields and the locations of expertise in the world. For instance, the studies below show that the effect of IT applications and development is not an issue that is related only to the State of Kuwait, the Gulf Countries, or even the Arab world, but that it is a recent world-wide issue.

Barber et al, (1999) surveyed 30 Argentinian academic libraries, using a questionnaire as a data collection method. They reported that academic libraries faced primary structural and operational problems, which had resulted from technological changes.

Zehery (1997) surveyed and analyzed 6 academic libraries located in different Gulf countries, using a questionnaire as a data collection method. Zehery suggested that further research is needed for the academic libraries in the Gulf region, because the academic libraries in this area are facing structural and operative problems resulting from recent technological development.

The research conducted by (Younis, 1999) on the Arabic and Jordanian academic libraries, also investigated the effect of automation management systems and IT applications on the organizational structures. Data were collected through questionnaires, field visits, and personal interviews. He exposed a necessity to develop software conducive to use in the Arabic academic libraries.

Al-Ansari (1999) observed the effect of automated systems and IT applications in use in the organizational structures of Kuwait University libraries.

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By using personal interviews, field visits, and a review of the literature, the researcher described the ways in which automated systems can be modified to make the libraries more responsive to IT development.

It can be seen that problems for academic libraries struggling to implement recent IT developments are not unique to Kuwait, but are a world-wide dilemma.

### **3.6 IT Status and the Role of the Kuwaiti Government in Improving the Libraries and Information Centres**

The emergence of the 20<sup>th</sup> century witnessed the impact of information technologies in all fields of life. The government of the State of Kuwait understands the importance of it, and thus has embraced the idea of establishing an infrastructure for an information division, as a strategic aim for the state to provide quality services equally for the governmental and the business sector (Othman, 2003).

As for libraries, in describing the efforts of the government of Kuwait for improving them, Al-Musalam, in 1988 noted:

“The Kuwaiti government has focused a great deal of attention on establishing and maintaining information systems and centres to meet the demands of developing nations as well as to support its goal of reaching equality with technologically advanced countries. Though there are many problems and difficulties that slow library development, libraries in Kuwait have been multiplying... . All types of libraries are the result of government activity, especially through the Ministry of Education. All of the libraries are trying to synchronize with the needs of modern life by developing plans to overcome problems related to processing, equipment, staff, and role”.

Although the Kuwaiti government is expending great effort on building an IT infrastructure through supporting it financially and spending a huge amount on its budget, there are clear deficiencies in the development process because of several obstacles that restrain IT applications.

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Bo-Shehri, who is a teaching assistant in the College of Business Studies at PAAET, conducted a survey study of technology transmission to the State of Kuwait during the middle of the year 2004. Bo-Shehri introduced clearly into this study the main obstacles that restrain IT applications from taking advantage of recent developments. She suggests that the main obstacles are as follows:

- A- Non-availability of databases that contain information about the latest developments in the world.
- B- Privation and weakness in coordination and non-cooperation between governmental authorities and establishments.
- C- The non-existence of technological strategies as guidelines for legislation.
- D- A clear decline in Kuwaiti employees in the essential economic sectors.
- E- The shortage of research centres and the poverty of research and studies in IT areas (Anon, 2004)<sup>1</sup>.

The IT revolution expanded in the State of Kuwait especially after the Internet technology emerged during 1994 (Wheeler, 2003). Kuwait was the first country that provided this technology in the Arab world. In addition, "Kuwait was the first country in the Gulf region to develop a website" (Rehman and Al-Obaidali, 2000). The appearance of this technology has changed all work processes world-wide, as well as in the State of Kuwait, and even allowing for the fact that the delivery of the technology to the State of Kuwait was slightly delayed, it has revolutionized work procedures there, too.

Despite, all the obstacles above to the development of IT in the State of Kuwait, most academic libraries and information centres depend heavily on Internet technology to provide their services (Rehman and Al-Obaidali, 2000).

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<sup>1</sup> Author's Translation from Arabic to English.

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There are, however, other factors that inhibit the academic libraries and information centres in the State of Kuwait from providing services to its patrons. The effects of the looting which took place in 1990 on libraries and information centre collections and materials as mentioned, and a shortage of professional librarians (Nazim, 1986), especially those with IT skills have been major contributors to the inhibition of the development of these services (Rehman and Al-Obaidali, 2000).

### **3.7 IT Applications and the Use of the Internet in KULA, PAAET, and NSTIC**

As mentioned before, the Internet has been in great demand all over the world since it appeared, because the Internet is an important resource for information and the most essential tool for communication among libraries and information centre users. Moreover, libraries are depending upon the Internet to raise the level of their services. Rehman and Ramzy are both working at Kuwait University and noted in 2004 that "The Internet has become a vital information resource and the most extensively used communication tool" (Rehman and Ramzy, 2004), that facilitates the application process of locating, retrieving, and transmitting information, which makes the need for Internet technology an important channel of communication and one of the essential tools for any library or information centre. Even recently, most academic libraries all over the world have been using Internet technology to enhance, locate collections, expand services, and ameliorate services (Lancaster and Sandor, 1997).

Libraries in the State of Kuwait and especially those at these academic establishments have recently been trying to implement all the electronic tools available to support their services and procedures. In order to gain the best quality of services "Libraries are now moving toward more customer involvement so as to ensure that all operations support and satisfy the information needs of customers" (Al-Ansari, 1999).

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Most of the services at these academic libraries depend heavily on Internet technology as mentioned in order to pursue recent developments in the library domain and to raise the level of their services through facilitating these developments for its users. The services that are provided via Internet technology in these libraries are as follows:

**A. Internet applications:**

This service allows the user to gain access to a variety of electronic resources to retrieve bibliographic information, through different databases. Furthermore, an Online Public Access Catalog (OPAC) is an automated system that opens the door to a faster, easier, and more reliable method for accessing library catalogs through the use of menu driven and command driven searching, and it explores the complete collection for the three establishments' libraries. Users are able to search through OPAC via titles, subjects, authors, and keywords by the use of Boolean Logic or Search. Unfortunately, until now, this service has only been connected via Local Area Network (LAN) in each academic establishment's nodes and workstations, thereby, preventing the bibliographic resource from being shared or updated. The facility "has become an economic and information provision necessity" (Anwar and Al-Jasem, 2001).

**B. Online Search:**

The libraries provide faculty members or researchers with sophisticated online search facilities via a direct link with DIALOG to offer different types of information from all branches of knowledge (AL-Motari, 1996). This service offers to the libraries' users, bibliographic citations for journal articles, studies and books, in addition to access to abstracts or full-text copies. Hitherto, only Kuwait University and NSTIC have provided this service in their libraries for its researchers.

**C. CD-ROMs:**

Although the use of CD-ROM bibliographic databases is available at the three Academic establishment libraries, only Kuwait University and PAAET provide it online.

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The CD-ROMs provide the researcher with a vast amount of information in the form of bibliographic citations, abstract or full-text articles.

KULA and PAAET libraries adhere to upgrading its CD-ROM collections by updating them continuously, and by adding new CD-ROMs to create a set of databases in order to support its user's information needs. All the CD-ROM databases are available for the users and the researchers on the web interface prepared by the IT Department of Kuwait University<sup>2</sup>. At PAAET this service is provided via the Libra Net Centre (LNC)<sup>3</sup>.

Kuwait University has a wide variety of CD-ROM databases, because it supports different educational fields, whereas PAAET and NSTIC support only specific fields. Thus, the need and the use of this service is limited and specified only for certain specializations and domains.

**D. Current Awareness:**

The libraries in Kuwait University, Education Resource Department in PAAET, and NSTIC offer this service for its faculty members and researchers. The aim of this service is to keep applicants to this service up to date with new library materials, as well as with the latest scientific developments, through the compilation of monthly and quarterly bibliographies of current books, periodicals and audio-visual materials, and sending the tables of contents of various periodicals or books covers of interest to faculty or research applicants, electronically, to the applicant e-mails. Kuwait University and NSTIC still provide this service for its applicants. However, PAAET suspended this service, due to the shortage of librarians, (See Appendix 2, Interviewee G, 2004).

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<sup>2</sup> [http://www.139.141.180.124/slingshot/applist.exe?file=mdi\\_db1.html](http://www.139.141.180.124/slingshot/applist.exe?file=mdi_db1.html)

<sup>3</sup> [www.paaet.edu.kw](http://www.paaet.edu.kw)

### **E. Electronic journals and Books**

Another form of Internet application allows users of the largest libraries in the State of Kuwait to access online titles from the library journals collection as electronic journals. This service is provided by the publishers of the journals. KULA recently has had about 1278 out of 2898 periodicals as electronic journals, in addition to 7 online (Kuwait University Libraries Guide, 2004). None of these are in the Arabic language. NSTIC has about 312 electronic journals out of 397, none of which is provided in the Arabic language, Also NSTIC is not only providing electronic journals for its users, but is also offering electronic books, and it has recently added about 60 electronic books (See appendix 2, Interviewee A, 2004). At PAAET the electronic journals facility is committed only to PAAET employees, especially to the teachers and research committees. PAAET students until now have had no access to this service at the PAAET libraries (See appendix 2, Interviewee A, 2004).

It is perhaps significant to mention that despite the electronic journals mentioned above none of the Kuwaiti academic establishment libraries provide their patrons with electronic scientific Arabic journals and books. This is for several reasons, such as, that Arabic journals suffer from a lack of editorial intensity, there is a lack of standardized archiving and indexing, and there is very poor bibliographic information with little attempt to create it for the Arabic journals and books. These factors keep the scholars unaware of the latest developments in science and knowledge in the Arabic world (Nasser and Abouchedid, 2001).



**F. KULA, PAAET, and NSTIC Homepages Applications<sup>4</sup>:**

The use of web technology became widespread when Internet technology appeared in the country and covers most sectors in the State of Kuwait, including the field of libraries and information science. The appearance of web technology gave great impetus for librarians throughout the world, as well as in the State of Kuwait, to obtain it and it was included in the other services that were provided in the libraries for the users. The home pages of the concerned academic libraries offer to all the libraries' users an historical background and general information about the establishments, current information about library services, information about library collections and bibliographic information, duty hours, library activities, and useful information, such as contact numbers and e-mail addresses for inquiries.

Not only have the above technologies emerged in these academic establishment libraries, but also other forms of technology have appeared and been implemented in order to follow the recent developments in the field of libraries and information services. These libraries have implemented different types of Library Automation Management Systems (LAMS) (Al-Motari, 1996), which support the Arabic and Latin languages.

The systems, such as the Virginia Technology Library System (VTLS) and Horizon, are supported and maintained by local agent branches, which belong to different commercial companies located in the Gulf region.

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A. Kuwait University: <http://kuc02.kuniv.edu.kw/~kulib/>  
B. PAAET: <http://www.paaet.edu.kw>  
C. NSTIC: <http://isb.kisr.edu.kw>

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These academic establishments are familiar with communications technologies and they have utilized different types of communications forms such as: Local Area Networks (LAN) and Wide Area Network (WAN), in order to link all libraries for each academic establishment into a form of network cycle to obtain the same facilities and advantages that the establishment provides via the IT department or the centre that supports the academic establishment.

The executive expectations for the roles that the libraries in these academic establishments are looking forward to developing and implementing are most of what recent IT has offered to the library domain, because their first concern is to raise the level of library services in order to satisfy the users and to serve and support the research activities in the state.

All the technological applications above have been adopted by the libraries in the State of Kuwait, and, in effect, show that the Kuwaiti academic libraries are not strangers to recent technologies (Rehman and Al-Obaidali, 2000).

In the State of Kuwait there are clear indications that show the rapid change in the approach of the head librarians toward the academic library services and the way that they provide for their users, by adopting several types of electronic methods from recent technology. The previous Dean of Kuwait University libraries, Dr.Al-Ansari, who is now teaching in the postgraduate college in the Department of Libraries and Information Science at Kuwait University, said to Al-Watan, one of the Kuwaiti daily news papers:

“Recently the modern concept for the libraries’ role, based on collecting the essential information resources, and focusing on utilizing and implementing recent information technology and communication, is to gain the benefits of the Internet as a tool of information resource via On-line search, to use databases in different areas of knowledge to retrieve bibliographic information or full-texts, whether online or CD-Rom, also, using the ILL service for

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requesting electronically the documents and other items needed from the BLDSC" (Al-Motari, 1996)<sup>5</sup>.

Although Dr.Al-Ansari mentioned in the statement above that most of the electronic tools and forms that have been explored previously, specifically the method of using the ILL service through requesting it electronically, he, however, did not mention or include in the statement the method of receiving the documents in the form of Electronic Document Delivery, or EDD, nor mention that the importance of the EDD is as great as the technologies above. EDD is clearly not technologically incompetent, and the fact is that this form of technology appeared at the same time as all of the other technologies above appeared, in the form of sending and receiving through the Fax machine. Even after it had been updated by using a method other than the Fax machine for reasons of cost, high resolution, and more rapid transmission for sending and receiving documents, there are several other motivations for using the Internet technology with EDD via Ariel technology. It was before Dr.Al-Ansari made the statement above by over 6 years that EDD technology via Ariel or via any other method that uses the Internet for transmitting documents or high packs, took place (Jackson, 1993). It has until now, been over 15 years since the invention of these electronic transmission forms, and they have still not been utilized at any libraries in the State of Kuwait, nor in these academic libraries.

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<sup>5</sup> Author's translation from Arabic to English.

### **3.8 EDD Historical Background and Document Delivery via Internet Technology**

The advancement of technology offered the method of EDD to supplement the ILL services in the libraries in distributing journal articles by enabling the library to obtain the articles rapidly, and also to save on the rising costs of postage and paper. The "EDD is a system that permits users to quickly identify needed items, and conveniently orders them" (Siddiqui, 2003).

The first EDD was transmitted through the Fax machine, and appeared during the 1970's. Historically, the idea of the Fax machine, delivered by invention, was created in 1843 in England by Alexander Bain, (1818-1903) (The Great Idea Finder, Online).

With the gradual development of technology during the years up until 1966, where the major technological steps happened during that century, Xerox introduced the Magnafax Telecopier. During the late 1970's when the Japanese companies entered the business market, they generated most of the inventions, and the Facsimile machine was one of them (The Great Idea Finder, Online).

The appearance of the application of light was developed several centuries ago. Through this application of light several inventions were created such as X-rays, photographs, television, the photocopy machine and several others. However in "1984, Mark E. Dean and Dennis L. Moeller developed" a technology that allowed "IBM and other compatible computers to interface with other devices (peripheral devices)" and one of these devices was the scanner (The History of Technology, 2003). The scanner resembles a photocopy machine. Simply, the scanner is a device that takes a picture of an image, through a movable camera, and converts the image into a computerized digital image, the resolution of it measured by pixels. The resulting matrix of the total pixels, called a bitmap, can then be stored as a file and displayed on the computer screen.

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The second form of EDD was two projects that arrived before Ariel software and appeared during the late 1980's. They were the Digitized Document Transmission Project (DDTP) from North Carolina State University and the Network Fax Project from Ohio State University (Tedd, 1993), which contains several advantages for transmitting the documents electronically. However, contrasted to Ariel technology, these projects contained several of major disadvantages.

The third form was developed by The Research Libraries Group (RLG)<sup>6</sup>. RLG is a non-profit membership corporation of over 140 research institutions. The aim of this group is to share and to contribute to different projects that improve information usage and discovery, by aiding and facilitating the import of information collections online, and also to aid delivering them around the world through utilizing recent technology. This group came up with a software program as a solution during 1990, called Ariel, which was named after "the servant of Prospero in Shakespeare's *The Tempest*, because Ariel delivers as fast and faithfully as his master requires" (Jackson, 1993).

It works through improving the performance of the Facsimile machine and the use of it in the libraries to raise the level of the ILL service by bringing a wide range of information from around the world to a local computer. The solution was that, instead of using the Public Switch Telephone Network (PSTN) for transmitting the data that was captured or scanned from the Facsimile machine and transmitted through analog signals transmission (Stallings and Slyke, 1998), the Internet, which provided a quick, effective, inexpensive, high quality of EDD, that contains any languages, characters, images, and figures, was used. Furthermore, Ariel is a software package that aggregates all the characteristics from recent technologies, such as communication systems, imaging, scanning, file management, and printing software, and combines them together.

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<sup>6</sup> Web site: <http://www-rlg.stanford.edu>  
E-mail: [BL.RIC@RLG.STANFORD.EDU](mailto:BL.RIC@RLG.STANFORD.EDU)

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In addition, from this combination Ariel attained the best service for sending and receiving documents in a very rapid form. Although Ariel requires customized hardware and software in a very specific configuration (Siddiqui, 2003), the main concept still provides an effective solution.

**3.8.1 The Main Advantages that Ariel Has Over Fax Transmitting Are Said To Be:**

- A. There is no long distance phone charge;
- B. It has a high image resolution with 300 X 300 dots per inch (dpi) and even higher, whereas the Fax transmission resolution is only 100 X 200 (dpi);
- C. The original source can be scanned, and there is no need for a photocopying process.
- D. The transmission process, both for sending and receiving, can be done at the same time;
- E. Documents can be stored and forwarded at a later time, or used for other electronic applications, such as creating documents, database management systems to retrieve and manipulate digitized documents or posting to an Internet web server where it can be shared and accessed. These e-application examples are only for uncopyrighted documents;
- F. "Ariel can be installed on PCs used for Word processing, electronic mail", the searching of online catalogs, or other applications.
- G. Ariel "is menu-driven and has extensive help screens built" into the system (Jackson, 1993; Landes, 1997).

With Ariel, the text image is compressed to less than 8 % of its original size. The compressed image is sent via the Internet as an encrypted package (using encryption technology for security) (Kurose and Ross, 2003) to the receiving PC where it is decompressed and printed. Ariel is a stand-alone system that is designed to work on PCs that are connected by way of an LAN to high-speed internet connections for fast and smooth document transmission.

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Simply, the notion of EDD via Ariel technology is merely to convert printed documents whether text, image, or graphics of 'up to 100 pages' into a secure, encrypted electronic format that is sent or e-mailed to another workstation, which is that of the user who has made an information order or an information inquiry from the ILL service in the library or the information centre. The process will be through the File Transfer Protocol (FTP). The e-mail contains the requested documents, which are stored on a website where the user can log in to view the information (Lands, 1997). The main benefit overall from this electronic facility is to create virtual interaction between the library materials and the users and to enable the user to locate and retrieve the information 24 hours a day. It also can be requested easily and rapidly, without concern for the distance between the user and the source.

Ariel is the most suitable solution for raising and developing the ILL service to allow the library to provide the best quality of service with other libraries and information centres. In addition library patrons who are living in this digital century have expectations of increasing resource sharing between information centres, especially for transmitting the information in a reliable and rapid form. It is extremely important to have a high quality, efficient, cost effective method of delivering documents electronically, whether locally or internationally (Landes, 1997).

It should be noted that Ariel is a dedicated system and thus it can send only via Internet technology to other Ariel workstations. This means the above Internet access requires Ariel software, either a full package for both scanning and printing or "a print-only package for receiving and printing on a PC without an attached scanner" (Ariel, Online; Landes, 1997).

Ariel is one of the softwares that gradually gets up-dated by the provision of new versions that contain different features and advantages. For instance, the first version of Ariel that appeared during the beginning of the 1990's had the disadvantage of not sending or using the e-mail as a way for the recipient to receive the electronic document.

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However, Ariel version 2.0, which was released in at the beginning of 1997, contained this feature with the new technology called Multipurpose Internet Mail Extensions (MIME), which enables documents to be transmitted to the computer screen via e-mail from one individual to another (Landes, 1997). Furthermore, Ariel still continues to do up-dates for that technology in order to improve resource sharing.

**3.8.2 The Cost of Ariel Version 3.4:**

The price of Ariel software in terms of a single library budget is modest. These are the prices for Ariel versions for each single copy:

- Full version 3.04 package new purchase (scanning, sending, receiving, and printing): \$996.
- Full version 3.04 package Upgrade (scanning, sending, receiving, and printing): \$548.
- Print Version 3.04 Package new purchase (only receiving and printing): \$598.
- Print Version 3.04 Package Upgrade (only receiving and printing): \$418.
- DOS Version of Ariel: \$479.

For 10 or more copies, the unit price is reduced. For volume discounts and alternate payment methods such as pro-forma invoices and purchase orders, Infotrieve at [ariel@infotrieve.com](mailto:ariel@infotrieve.com) can be contacted.

Recently, e-publishing has become a big issue in the knowledge and information marketplace, and the use of Ariel is decreasing gradually, especially in the developed countries, due to the emergence of electronic books and journals, not only for the current issues, but also for previous ones (Labriga, 2004). In addition, further projects and technologies are being developed in order to facilitate not only hard copy delivery of electronic documents, but also to deliver digital documents retrieved from full text databases. For example, the International Standardization Organization (ISO) approved an international standard for ILL communications between libraries, called ISO ILL Protocol.



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This protocol was published during 1993. This is most widely used in Canada (Jackson, 1998). The basic idea of this protocol is to enable different ILL systems to communicate effectively, through receiving and sending protocol messages that conform to its use. Up until the middle of year 2000 there were only 34 organizations, companies and projects representing 8 different countries that are using this protocol (Jackson, 1998). This Canadian project is still under development and there are several organizations around the world testing this protocol. The Research Library Group (RLG) is one of these organizations that want to implement this protocol and combine it with Ariel software as way of developing Ariel technology (Jackson, 1998). There are several software management systems that work over this protocol such as AVISO owned by A-G Canada, VDX (Virtual Document eXchange) developed by Fretwell-Downing Informatics, and Wings provided by Pegasus Software, Inc. These softwares facilitate ILL transactions, copyright abidance, creating statistics, and transaction reports (Jackson, 1998).

However, the Gulf countries, as well as the Arab countries, are still not fully e-publishing Arabic information materials or resources (Nasser and Abouchedid, 2001), so the use of Ariel software could still give an opportunity to Arabic academic organizations and establishments to gain a better service for ILL and resource sharing, especially for Arabic materials (Aman and Abdul-matey, 2004), and would give the Arab world a great opportunity to share the Arabic materials globally, through using ILL protocol via one of the ILL systems, in the future.

### **3.9 Staff in KULA, PAAET, and NSTIC**

The current and the future development of libraries and information centres in the State of Kuwait will depend upon the availability of professionals and upon sufficient numbers of staff with the essential skills, such as a knowledge of the basics of IT, to fill the empty library and information centre positions and to provide a vital and adequate library and information service. Since the emergence of Internet technology in the State of Kuwait, there has been a huge demand for library professionals with computer knowledge and experience.

The recent era has been called the "rapid information era"; this era was evolved from the characteristics of information, whether storing, retrieving, or transmitting, with the heavy and often unpredictable demands of library patrons (Ali, 1997). People's expectations for library services have been exceeded, especially after the appearance of Internet technology. People have a great need for information to achieve their personal desires.

As mentioned in chapter two, during the 1960's, applied education emerged in different institutions in the State of Kuwait. In 1977, the first library education program was introduced as one of the departments of the Kuwait Teacher Institute (Recently, College of Basic Education at PAAET). At the beginning, the program was designed to prepare and to train high school graduates to be assistant librarians in a two year program aimed at filling the needs of the public and school libraries (Abdel-Motey and Al-Hmood, 1992).

Furthermore, in 1986 the program was developed by merging it with the Department of Education Technology in order to commence a four-year Bachelor of Science degree program in Information Science and Education Technology.

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The reason for combining both departments was to gain adequate and qualified librarians to fulfil the needs of the State of Kuwait libraries for professional human resources and in order to provide efficient information services for its patrons, not only for public and school libraries, but also for all other types of libraries and information centres in the State of Kuwait.

In 1988 there was a plan to create a program for Libraries and Information Studies at Kuwait University as a postgraduate program only. The essential role for the success of the emergence of this program would be that this program would act as a collaborative link to support the college libraries of Kuwait University.

The plan was discussed by several advisors and professionals in library and information studies from the United States and United Kingdom, focusing on the creation of a program process, because the Postgraduate College at Kuwait University had decided to provide for this program for its students to be taught in the English language. However, the plan, which was supposed to commence in 1990, was delayed due to the Iraqi Army invasion of the State of Kuwait at the beginning of the 1990's, which incapacitated totally the higher education processes and plans. Finally, during 1995, the College of Postgraduate Studies at Kuwait University determined to establish the Department of Libraries and Information Studies as a Master's Degree program for all students who have a Bachelor Degree in different specialties (Anon, 1999).

Al-Kabaz (1996), mentioned that there are several studies that criticize the Libraries and Educational Technology program at PAAET, either for the quality of the program or the quality of the students enrolled (Aman, et al., 1992).

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However, during the session of 2001-2002 the Department of Libraries and Information Science was separated from the Education Technology Department, in order to raise the quality of the program through upgrading it and adding a variety of taught modules that are related to the areas of libraries and information science, and also through planning to offer postgraduate studies in the field of Information Science in the future (Al-Hajri, 2002).

The rapid information explosion is having a dramatic and heavy effect on libraries and information centres. Yet, there is a huge shortage of professional librarians and it is considered by several researchers and consultants to be the major problem in the State of Kuwait. Even though the State of Kuwait has had library education since 1977, as mentioned above, there is still a huge deficiency of professional library staff (Abdel-Motey and Al-Hmood, 1992). Al-Ansari found that the number of professional graduates in the field of library and information science falls far short of meeting the country's current and future manpower shortages (Al-Ansari, 1992).

On the other hand, the literature for library and information science remains silent on the reality of this employment situation in the State of Kuwait.

There are two ways to apply for governmental jobs in the State of Kuwait. The first is via the employment foundation known previously as "Dewan Al-mowadafeen" and more recently as "The Council of Civil Service". This is a governmental foundation that is responsible for organizing the employment system in the State of Kuwait, and it controls most of the ministries, organizations, and establishment employment vacancies. Most of the graduates in the State of Kuwait proceed to it to apply for governmental employment; the applicant waits for months, and even sometimes over a year to find a job vacancy, due to the complicated procedures that this foundation has to follow.

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Mostly, jobs are distributed randomly, whether related to the qualifications of the applicants or not. Dr. Rashed Al-Hamad the minister of the Education Ministry in the State of Kuwait has made a statement for the "Re-engineering and Placement of New Standards for Supporting and Funding Graduates" and clarified in this statement "...that Dewan Al-mowadafeen should restrain from appointing applicants who are not adequately trained for the jobs (Bandak, 2004). Although, Al-Dewan is trying to offer the best-developed services for its applicants, Al-Dewan has undergone a number of dilemmas due to the size of its annual budget and the continuously changing decisions for fulfilling the Kuwaiti job market requirements, which is the main aim of that establishment.

A second employment method is much easier, as there are some governmental ministries, organizations, and establishments which are decentralized, meaning that the employment process does not require to go through "Al-Dewan". This gives an opportunity for rapid employment procedures, and also, for offering jobs according to appropriate qualifications, which gives a proper opportunity for the applicants to work in their major or specializations. KISR and Kuwait University are considered to be two of these extra-Al-Dewan organizations.

### **3.9.1 KULA Staff**

The total number of librarians is about 78, and includes Kuwaitis and non-Kuwaitis, males and females (Kalander, 2004). Eighteen of these are professional librarians, whereas the rest are librarians but are paraprofessionals or without information studies qualifications (Kalander, 2004). Most of them are non-Kuwaiti citizens.

Al-Hassan and Meadows (1994) conducted a case study of library management in the State of Kuwait and explained why there are so many non-Kuwaiti professional librarians working in Kuwait University:

"Hitherto, personal relationships had played a major role in recruitment, and this had led to the appointment of many employees without library qualifications. In addition, the

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libraries had made great use of non-Kuwaiti labour. Since such employees, unlike Kuwaitis, were required to be on fixed-salary temporary contracts, job satisfaction among a majority of University library staff was low”.

The total number of librarians above shows that there are over 60 librarians in Kuwait University who are non-professional librarians. Although, Kuwait University has the opportunity for an easy recruitment process to attract the applicants in different departments, Kuwait University used this opportunity in the wrong way and this appears to have been by employing inexpensive library staff, even non-professionals.

Kuwait University has suffered from this problem since the establishment of its libraries during the 1960's (Nazim, 1986), because there were no graduates in the library domain. But the emergence of applied education in Kuwait to potential librarians in 1986 solved this dilemma by beginning to produce professional librarians. Nevertheless, Kuwait University is still following the same method of selecting its librarians.

Therefore, there are a lot of non-Kuwaiti employees and also non-professionals who will hinder the development of the libraries and information centres, especially as the library domain is one of the fields that gets upgraded frequently and rapidly. Thus, Kuwait University must create a clear recruitment policy for employees, paraprofessionals and librarians, through specifying qualifications, job titles for the non-professionals and paraprofessionals, in order to overcome this problem on the one hand, and also to raise and to develop library services on the other.

### **3.9.2 PAAET Staff**

The Vice Dean of the Education Resource Department, declared in one of the interviews that was published in the PAAET News journal, "...that PAAET Libraries do not have sufficient human resources and there is a necessity for raising the infrastructure of PAAET libraries, for librarians, employees, buildings, collections materials, and equipment (Abdel - Hameed, 2003).

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So far, there are some libraries at PAAET that are closed because of the librarian shortage. The main reason for that shortage is that PAAET depends on Al-Dewan for its recruitment (See Appendix 2, Interviewee C, 2004). The total numbers of librarians that work at PAAET libraries as well as in the Education Resource Department are: 54 librarians, including males and females, Kuwaitis and non-Kuwaitis, 24 of whom are non-professionals (Al-Tahir, 2004).

The majority of PAAET librarians are Kuwaiti citizens. As seen, the total librarians at PAAET are divided between professionals and non-professionals, because PAAET tries as much as possible to provide qualified and adequate professional librarians, paraprofessionals, and other employees for its libraries, in order to add value to the infrastructure of the PAAET Education Resource Department and libraries.

### **3.9.3 NSTIC Staff**

The situation is completely different at NSTIC, because the centre of this department is located in the same area as KISR is located. It does not have other branches for KISR like Kuwait University and PAAET and thus, there is no need for several libraries. The total number of librarians at NSTIC is 23 librarians, including males and females, Kuwaiti citizens and foreigners. All the librarians are professionals, 7 of them are librarians with a Master's Degree, and the rest are librarians with a 2-year Diploma and a Bachelor's Degree (See Appendix 2, Interviewee H, 2004). Furthermore, NSTIC has clear policies for recruitment, and tries to provide for the development of its library services by pursuing every development in the libraries and information domain in an attempt to achieve the level of other libraries in Western or developed countries (See Appendix 2, Interviewee F, 2004). This is because it acts as the national scientific information body of the State of Kuwait (KISR, Online).

### **3.10 The Essential Components for Creating ILL Legal Policy**

Legal issues in the libraries and information centres domain, especially in the area of providing electronic services and procedures, are the main features of recent legislation. The legislature's main concern is for developing laws to protect any electronic application or process by way of extracting laws and policies continuously in order to secure copyright issues for library services to its patrons. One of the main issues is the application of copyright laws to electronically copied documents through the ILL service.

In order to develop the ILL service by automating the process of sending and receiving electronically, libraries or librarians who are planning to develop the ILL service and want to provide it electronically for the patrons must be aware of legal issues through developing flexible ILL policy that fits with the international or existing laws. These are the main and the essential legal issues, but are outside the scope of this study.

#### **A. Service control**

Libraries should follow certain policies through controlling the limits of requests for each patron, also by requesting permission for usage after crossing these limits.

#### **B. Secure delivery system**

Libraries must insure that the items that are requested and delivered should only be received by the library or information centre patrons.

#### **C. Confidentiality of records**

Librarians must collect patron's personal details, in order to verify the delivery process of sending and receiving, in case there are returnable items.

#### **D. Copyright notice**

Librarians should be concerned about the copyright laws by adding notice during the photocopying process or sending it electronically.



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In addition, librarians must be aware of the purpose for which these copied or scanned items are used.

**E. Fees**

Libraries and information centres have the right to charge fees for the ILL service. Libraries have the option of deciding the amount of charge that will be passed finally to the library patron. There is Loan Fee Management advice that is offered by Online Computer Library Centre (OCLC) for its members and libraries can use it as a guideline for library charges.

Furthermore, there are commercial associations that help its members through facilitating information exchange internationally, such as the International Federation of Reproduction Rights Organisations (IFRRO) in United Kingdom.

### **3.11 Summary**

To summarize, in Kuwait, academic libraries are still rebuilding their collections following the losses that occurred during the Iraqi invasion in August 1990. There are several arrangements for Inter-Library Loans, whether in the form of amicable agreements or chargeable services, within Kuwait and externally, between other academic libraries and information centres to complement these library collections. These academic libraries are still using traditional mail for document delivery, which is expensive and slow.

The government of Kuwait is trying to promote the use of IT and the libraries are making use of it in many ways. However, the libraries and information centres that represent these academic establishments are not thinking of how to use the advances that have evolved from recent technology to facilitate information transmission via EDD over Internet technology.

Since Kuwait is a wealthy country and financial resources are not a common problem, some attention needs to be focused on adopting this technology to insure rapid information transmission in these academic libraries, whether locally or internationally, and the main issue that hinders this technology adoption seems to be the availability of sufficient staff with appropriate experience.

## **Chapter Four**

### **Research Methodology**

#### **4.1 Introduction**

The increasing demand for societies to gain more knowledge and to create various research studies is a common phenomenon. This is due to the desire of educated individuals to see progress in their environment, which, overall, will lead the entire society to build its own future and to achieve a high level of civilization. Therefore, research methodologies are the means that will aid these individuals to discover solutions for the dilemmas that inhibit a society's development through following or using scientific strategy to verify and to remedy economic, human and educational problems.

As discussed previously, the main aim of this study is to understand what inhibits the major libraries in Kuwait from implementing new technologies, and to remedy the situation by using, in particular, the Ariel system of Electronic Document Delivery to improve the Inter Library Loan service.

This chapter explores the research methods that were used for the present study, and is followed by an explanation of the methods chosen, the sample selected, and the data collection and analysis used herein.

#### **4.2 Selection of Study Instrument**

The type of issue under investigation, and the qualities of the subjects who are to be approached for information are two key elements in any type of research. The research should focus on these before selecting the method of data gathering. Obviously, these two key elements depend on the size of the research problem and the nature or ramifications of it.

It is common, of course, for researchers to use several research methods. The use of several methods gives the opportunity for the researcher to verify and validate the information being gathered (Blaxter et al, 2001), as well as to help in avoiding any dramatic error that might affect the data.

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Hence, the researcher of this study implemented several techniques, and compiled both 'families' of methodologies, qualitative and quantitative, in collecting the data.

The researcher used different methods to collect the data, and the methods were as follows:

1. Case Study.
2. Questionnaire.
3. Interviews.

### **4.3 Case Study**

The researcher used the method of the case study, in order to search more deeply into the nature of the background for the study and into the current practices in the concerned libraries in order to answer the questions that were presented by Yin (2002), which come down to why new technologies had not been fully implemented in these Kuwaiti major academic libraries, and how recent technologies could be implemented.

In addition, Yin (2002) has explored and discussed the most common six sources of evidence used in doing case studies. However, the use of this evidence differs between case studies. In this study the researcher has done the following:

#### **A. Documentation**

For documentary information the researcher has carefully gathered all types of information including that offered in the literature, whether in the form of scientific articles, PhD thesis, Master dissertations, books, reports, annual guide books, newspaper clippings, the two main daily Kuwaiti newspaper data centres, Al-Anbaa and Al-Qabas, articles appearing in community newsletters, and web sites. After reviewing this literature, the researcher had the capability of describing the current state of the major libraries in Kuwait and of verifying the main reasons for which these libraries are inhibited from adopting Ariel technology to improve their Inter Library Loan Service.

## **B. Archival Records**

Yin (2002) indicated that "The archival records can be used in conjunction with other sources of information in producing a case study".

The researcher used different archival records in this study in order to verify and explore different aspects such as the three libraries' annual statistics for local and international Inter-Library Loan requests for the year 2003. In addition, the bibliographic records for the three academic establishment libraries were used in order to verify the contents of the collections of these library materials before and after the looting that took place in the State of Kuwait during 1990.

## **C. Interviews**

Yin (2002) emphasized that interviews are one of the most significant sources of information for doing case studies. Thus, the researcher used this source of evidence in a fully unbiased manner for the perceptions that evolved or were reflected from the case study and did 8 interviews with informants who had expertise in and around the information technology domain. In order to gain a wide understanding for the study, the researcher selected the interviewees from different library professions such as: librarians, senior library staff at work in the libraries of the three academic establishments and teachers of library and information science at Kuwait University and PAAET. The researcher used open-ended questions for the 8 interviews to guide the researcher to the facts, opinions, insights and attitudes of the interviewees toward the subjects of the research. The open-ended questions were evolved from the research questions posed in this study and from ideas and concepts highlighted in the literature and site visits. Due to the fact the anonymity of the interviews, the interviewees will remain anonymous.

#### **D. Direct Observation**

The researcher made several visits to the academic establishment libraries concerned during summer of 2004 to collect the data for the study. These visits gave the researcher the opportunity to make a direct observation on the libraries' current state of IT applications such as the use of electronic equipment, computers, electronic services, use of communication technology, Internet facilities, librarian's perceptions, interactions and attitudes toward recent technology and service procedures particularly in the area of the Inter Library Loan services. The researcher used an IC recorder during the field visits and recorded several conversations with library staff.

#### **E. Participant - Observation and Physical Artifacts**

The researcher did not use these two evidence bases because they were not feasible and appropriate to the study.

### **4.4 The Questionnaire**

The questionnaire is the second source of information that was used by the researcher for collecting data for the purpose of this research study. There are several advantages in using this instrument for data collection. Thus, it is helpful to explore these advantages in general.

Askar et al, (1998) defined the questionnaire as "An instrument or means for information collection, as a form of research application, it consists of a list of questions directed to the respondents to answer in order to obtain information around a certain issue"<sup>7</sup>.

#### **4.4.1 Reasons for Using a Questionnaire**

The questionnaire is one of the techniques that is frequently used in survey research for data collection. Using this instrument gives the researcher several advantages, as well as facilitating achieving the most delicate information rapidly and also saving cost and effort (Mohameed and Al-Seryaosy, 1988).

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<sup>7</sup> Author's Translation from Arabic to English.

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The literature review identified and highlighted several issues, which were related to the activities of the librarians who work for these Kuwaiti academic libraries. Then the researcher tried to get an understanding of these issues, specifically, the issues that are related to the concerned Kuwaiti academic libraries. The case study materials gave to the researcher the background and the current status of the study research, but did not help the researcher to explore the issues, because the literature that is available about the situation in Kuwait does not to any significant extent verify the main IT barriers, such as attitudes, awareness, IT skills, IT infrastructure, and IT management, which are hindering the development of these libraries from fully automating the services provided for the patrons, particularly in the ILL service. Thus, the researcher had to survey to verify the facts of the situation and to expand the investigation to give an overall picture of the librarians' activities on the ground and that tool was the questionnaire.

The questionnaire technique for data collection, avoids the researcher putting any sort of pressure on the informant. It encourages the respondents to indicate their opinions in absolute frankness, especially if the informants have enough time to deliberate before responding to any statement in the questionnaire. Furthermore, using the questionnaire will ensure the researcher impartiality, because researchers are mostly not in contact with the informants, face-to-face, which as a result means that the researcher is not affected by the respondent's consideration of the issue. In addition, this technique is considered one of the best techniques for collecting sensitive data, which gives the researcher the opportunity to avoid embarrassment with the respondents. Lastly, the questionnaire is a more practical method for collecting data from a large sample and also gives the researcher the opportunity to analyse the data rapidly (Askar et al, 1998).

#### **4.4.2 Organizing the Questionnaire**

Before creating the questionnaire the researcher had put in mind a set of purposes for using this instrument in order to facilitate the collection of data rapidly and sensitively.

Cohen et al, (2000) suggested that the researchers should recognize the need to ensure that the questionnaire:

- A. Is clear on its purpose;
- B. Is clear in what is to be included or covered in the questionnaire in order to meet its purposes;
- C. Is exhaustive in its coverage of the elements of inclusion;
- D. Asks the most appropriate kinds of questions;
- E. Elicits the most appropriate kinds of data to answer the research purposes and sub-questions;
- F. Asks for empirical data.

As mentioned, the researcher had to keep in mind several purposes for using the questionnaire. These purposes were to assess the study sample attitudes towards and perceptions of the use of recent IT, particularly about implementing electronic document delivery to enhance the service of Inter-library loan at their libraries. The researcher came up with five questionnaire drafts, because the researcher made several different decisions concerning the statement sequences for creating the final draft, which would most ensure and provide for the points above, as well as sequences which would gather information in depth to achieve the researcher's purposes. For instance, the researcher changed the sequence of the statements several times, in order to keep the questionnaire from confusing the informants. Furthermore, the researcher re-wrote the statements to ensure the depth and the clarity of the responses.



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In order to get the respondents' agreement or disagreement with each statement in the questionnaire, the researcher used a five-point "Likert" type rating scale, which is usually used in the following way:

- A. Strongly agree
- B. Agree
- C. No opinion
- D. Disagree
- E. Strongly disagree

#### **4.4.3 Validity Procedures**

Cohen et al, (2000) defined validity as "An important key to effective research. If a piece of research is invalid then it is worthless".

Therefore, validity is an essential element in order to ensure maximum validity for the research.

In order to ensure the validity of the questionnaire, which was used as the instrument for data collection, the researcher implemented two procedures.

The questionnaire that was used in this study underwent a translation by the researcher into the native language spoken in the State of Kuwait, which is Arabic. The accuracy of the translation was the main concern that the researcher had in mind and, therefore, the researcher referred it to another professional and translator, who works as a teacher in the Public Authority for Applied Education and Training in the department of Libraries and Information Science, to confirm the accuracy of the Arabic translation of the questionnaire from English.

The translated questionnaires were used to explore the attitudes of staff in the concerned academic libraries of this study towards the application of recent technology, particularly Electronic Document Delivery, and also to hear the staff forecast of the benefits to be gained by implementing and utilizing new technology to develop the Inter-Library Loan service in these academic libraries and information centres.

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Then the questionnaire was pilot tested to verify its validity and to clear it of any ambiguities. Sapsford and Jupp (1996) both pointed out that

“A pilot investigation is a small-scale trial before the main investigation, intended to assess the adequacy of the research design and of the instruments to be used for data collection; piloting the data-collection instruments is essential, whether interview schedules or questionnaires are used”.

Consequently, the researcher conducted the pilot test for the questionnaire and four librarians who work for different academic libraries in Kuwait reviewed it. Those librarians were not included in the study. In addition, this test aided the researcher to check and to verify the statements of the questionnaire after the translation process to see whether they were clear and easy to understand. As a result of the respondents' comments on the instrument, some words were changed to ensure questionnaire clarity.

#### **4.5 Sampling**

Commonly, the main purpose of any research is to generalise the subject under study for a whole population. A population is any set of persons that possesses at least one common characteristic (Busha and Harter, 1980). Since, it is not possible to include an entire population for the purposes of a study, because of the population size, the impossibility of questioning all specialized people in a certain field, or the huge financial cost of doing so, the idea of sampling for the purpose of the research study has become a standard procedure to represent a population (Askar et al, 1998).

Sampling can be defined as “both a design and a technique. A researcher chooses to study a sample, or subset, of a group when the group itself is too large or too difficult to access” (Mitchell and Storey, 2003).

Sapsford & Jupp (1996) defines a sample as a set of elements selected in some way from a population. The essential aim of sampling is to save time and effort, but also to obtain consistent and unbiased estimates of the population status in terms of whatever is being researched.

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Miles (1994) suggests that sampling involves selective decisions, the compilation of results from people who have been observed or interviewed and also information from settings, events, and social processes.

#### **4.5.1 The Study Sample**

As mentioned previously, this research is about three major academic establishment libraries in the State of Kuwait. The three academic establishments contain about 30 academic libraries and information centres. Out of these 30 libraries one is a central library (JAL) and one is considered a special library (NISTIC) and these are located in different areas in the capital city of Kuwait. The total number of staff that work for these academic establishment libraries is approximately 159.

Cohen et al, (2000) noted that "Questions of sampling arise directly out of the issue of defining the population in which the researcher will focus".

He also, pointed out that "There is no clear-cut answer, for the correct sample size depends on the purpose of the study and the nature of the population under scrutiny".

The researcher limited the sample of the study and chose from the population of these academic establishments having in mind the "Purposive sample", which would include only Kuwaiti librarians who have experienced the ILL service, and who also have an IT background (AL-Kandari and Abdul-dayeem, 1987; Cohen et al, 2000).

The vast majority of the 159 librarians were not Kuwaiti citizens, and also their expertise was not in the field of Libraries and Information Science, which as a result made them unfamiliar with the ILL service. Thus, after reviewing the state's employee reports from the three academic establishments the researcher found that about 40 librarians was the appropriate sample for the present study.

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On the other hand, the reason for using a Non-probability sampling technique is to allow the researcher to achieve the main intention of the investigation, which is assessing the concerned academic library staff attitudes and perceptions in order to examine and to discover the reasons that inhibited progress towards the new technology.

Subsequently, the researcher visited each academic establishment library administration in order to contact heads of administration to ask for permission for data collection for the purpose of the study, and also to charge one of the employees in the administration with assisting the researcher in gathering useful information about the administration and also to be with the researcher during the data collection process.

This visit to each library administration facilitated the process of data collection, and aided the researcher in achieving excellent results from the informants without any particular problems.

#### **4.6 Respondent Rate**

As mentioned, questionnaires and interviews were used to explore the attitudes of the librarians of the libraries concerned towards the application of recent IT, particularly Electronic Document Delivery, and their perceptions of the benefits that would be gained after using and implementing new technology for the Inter-Library Loan service. The 40 questionnaires were distributed in August 2004 to librarians who were working to provide the Inter-Library Loan service at these three Kuwaiti academic establishments, and all questionnaires were completed and returned, which made the response rate 100%.

As for PAAET and NSTIC, the researcher, himself, distributed the questionnaires to the appropriate and selected librarians. There were 15 to PAAET and 3 to NSTIC.

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However, when the researcher visited the senior manager for KULA to ask for permission for questionnaire distribution, the senior manager asked to distribute the questionnaires to the appropriate informants herself, and she returned all 22 questionnaires when the researcher made another visit to the senior manager the following week.

#### **4.7 Data Analysis**

Manual analysis was not impossible for both data instruments. However, the researcher analyzed the data that was gathered by the interviews manually due to the small number of interviewees. After recording the interviews the researcher listened again to them, and analyzed all the data presented by each interviewee to each question. The researcher also analyzed the interviewees' comments and suggestions and then translated them from Arabic to English.

As for the second instrument, which was the questionnaire, the use of a computer program in analysing data made the task much quicker, especially since the data was gathered from a large number of people. Thus, the data that was collected from the 40 informants was entered on Microsoft Excel to verify the percentage differences on the five-point scale for each question and it was then represented with pie charts.

#### **4.8 The Study Limitations**

The factors and the results of the study were limited to the major academic establishment libraries and information centres in the State of Kuwait; therefore, the results cannot necessarily be generalized to academic establishment libraries or information centres outside the state or to other academic establishment libraries within the State of Kuwait.

#### **4.9 Summary**

This chapter has explored the study methodology and instruments that were utilized in the study, which were the Case study, the Interviews, and the Questionnaires.

At the beginning the researcher highlighted the importance of research methodologies for individuals. The researcher then explored the two essential elements for conducting any research study. After demonstrating the essential elements, the researcher exhibited the main reason for conducting a case study, and how the researcher had followed the six sources of evidence that were created by Yin. The researcher went on to the questionnaire, and explored the reasons for using this instrument for data collecting and explained how the researcher organized and validated it. Furthermore, the researcher identified the study sample and how the researcher reduced the number of the total staff that work for the specified Kuwaiti academic establishments. The researcher also stated the respondent rate percentage. The researcher explained the process for research data analysis for both instruments, and finally, the limitations of the study were mentioned.

## **Chapter Five**

### **Analysis of Data**

#### **5.1 Introduction**

As mentioned in Chapter Four, this study has been conducted to investigate the attitudes and the IT backgrounds of the executives, administrators, professionals and librarians who are working for three major academic libraries and information centres in the State of Kuwait towards implementing the new technological method, EDD, with Ariel technology to enhance the ILL service in the concerned academic libraries.

This Chapter analyzes the results that have been collected for the purpose of this study. In order to gain the best results for this research, qualitative and quantitative methods have been used, the approaches of which have provided several advantages for this research, and are as follows:

- A. They provide the researcher with valuable information that completes the infrastructure of the research.
- B. Utilizing several methods of data collection covers the insufficiencies of any single method.
- C. They have supplied the researcher with useful tools to confirm the potency of the sampling responses.

#### **5.2 Sample Genders**

Most librarian personnel at these three academic establishments are women, who are working to provide the ILL service at the library and information centres concerned. As mentioned above, 40 questionnaires were distributed, and collected from librarians at these academic establishment libraries and 30 of the questionnaires, 75% of the sample, were answered by female librarians. However, of the last 10 questionnaires, 25% of the sample, were answered by male librarians.

### 5.3 Questionnaire Statements

(See Appendix 1 Questionnaire Statements)

**5.3.1 The first statement, which the librarians were to rate, was about recent IT developments and the evolution of several tools that could be implemented and utilized to aid libraries and information centres in order to raise the level of their services.**

The Pie Chart 5.1 below shows that 36 librarians out of 40 believed that recent IT had several tools that could improve the services of the libraries and information centres; however, 10% of them responded with disagreement.

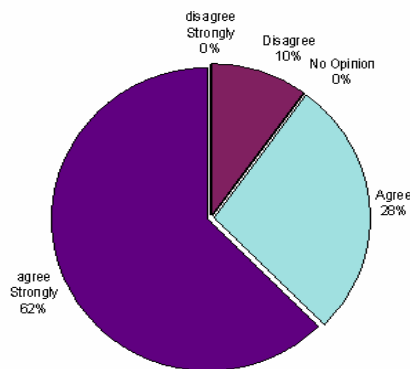


Chart 5.1

**5.3.2 The second statement was about verifying the librarian's status, and whether they thought it was going to deteriorate with the development of library services.**

When the respondents gave their opinion about this statement, 17 rated their opinions as disagreeing strongly and, 12 of them disagreed. On the other hand, 5 of them agreed or agreed strongly, although 7 of them marked no opinion. Chart 5.2 shows the percentage of those respondents.

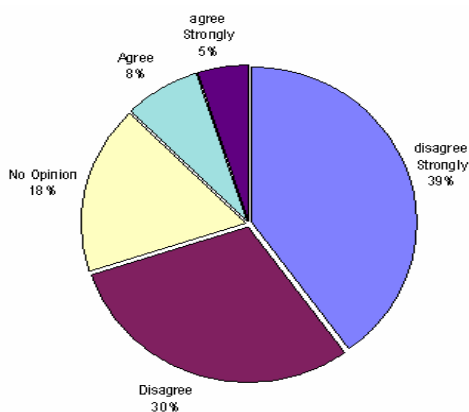


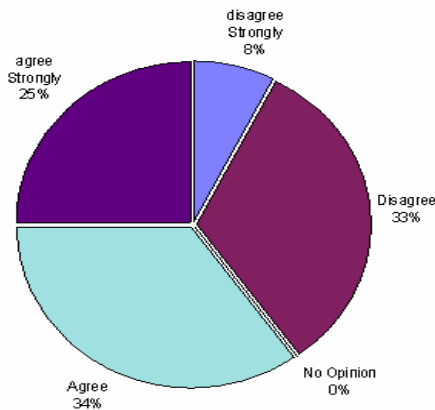
Chart 5.2



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**5.3.3 This statement was to verify whether librarians still recommended providing their service in manual form.**

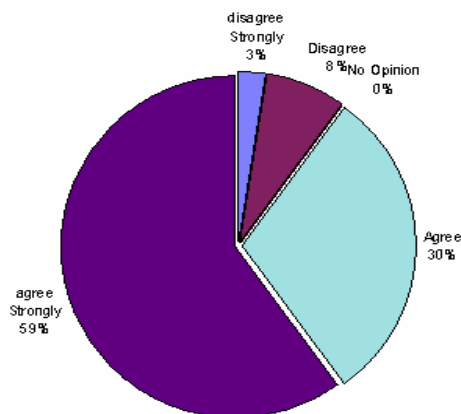
The response to this statement was unexpected. Fourteen out of 40 still preferred to provide their services in manual form. In addition, 10 agreed strongly. But, 16 disagreed with providing their services in the library manually and, none marked no opinion. Chart 5.3 below presents these findings.



**Chart 5.3**

**5.3.4 The fourth statement was about whether the librarians understood the main benefits, those of saving time, effort and cost, by using recent technology.** The majority, 36 out of 40, responded to the statement in Chart 5.4, by indicating that they understood the main benefits illustrated above. Only 4 did not have a positive understanding.

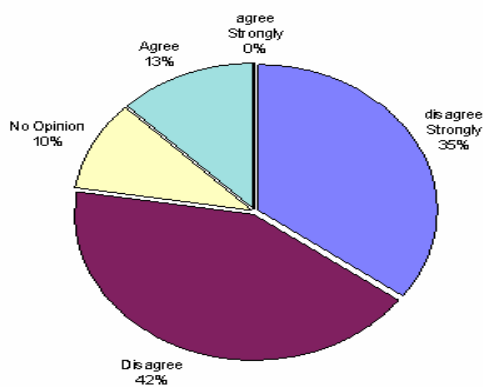
But, none of the respondents marked no opinion.



**Chart 5.4**

**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**

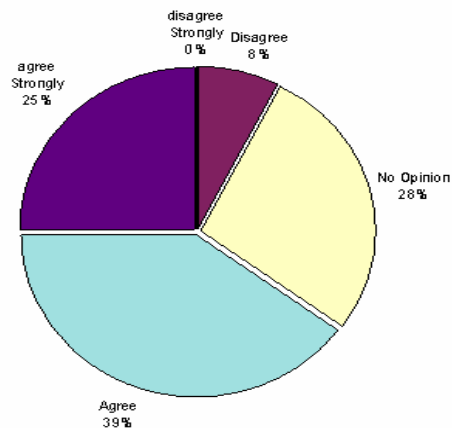
**5.3.5 When asking the respondents about their vision of the outcomes of both the manual and the electronic processes and services in the libraries and whether they would be better or worse,** most believed that the electronic processes would be better. Thirty-one of the respondents out of 40 believed that the electronic processes and services would be better than the manual, although 5 had opposite visions. Only 4 had no opinion. Chart 5.5 provides these findings.



**Chart 5.5**

**5.3.6 When asked about the problems with technology production, especially with the process of implementing it and the cost of it, about two thirds thought there would be problems.**

It can be seen from Chart 5.6 that 26 out of 40 librarians answered between "agree" and "agree strongly" that there could be problematic developments in technology productions. However, 4 librarians had no opinion, while only 3 disagreed.



**Chart 5.6**

**5.3.7 When asked if there were any need for librarians to be experts in computer applications, most felt that there were not.**

The indication of the informants' opinions about the statement above was that 23 of those responding agreed, but only 3 agreed strongly that there was no need for the librarian to be an expert in computers in order to use any automated system in the libraries. However, 9 out of 40 believed that a librarian should have a high level of computer skills in order to use automated library systems. Four of the respondents marked no opinion.

Chart 5.7 illustrates the rating of this finding.

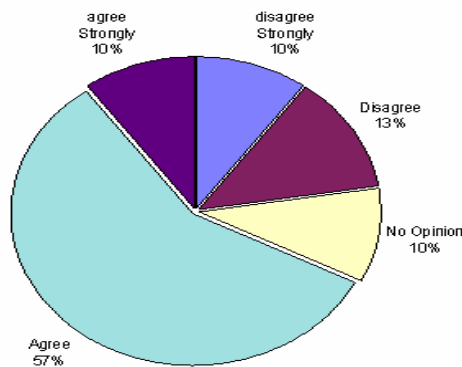


Chart 5.7

**5.3.8 Statement number eight was about the librarians and whether they would face any practical problems, which might directly or indirectly affect their attitudes towards the services that they provide to the patrons in the libraries and information centres.**

Chart 5.8 illustrates that 27 of the total responding believed that there would be no practical problems, while, only 3 believed problems would emerge after becoming dependent on IT. On the other hand, 10 preferred to respond with no opinion.

to respond with no opinion.

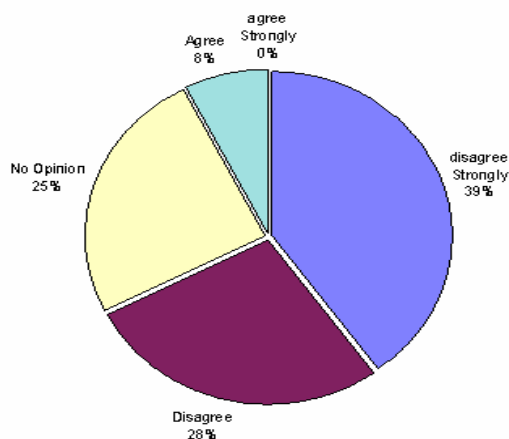
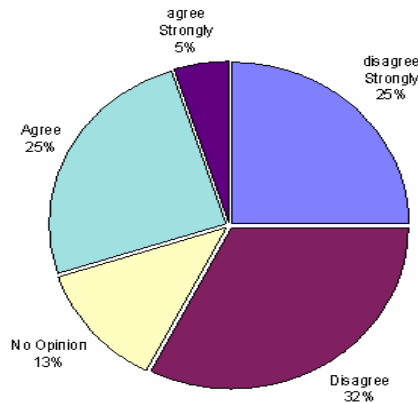


Chart 5.8

**The Adoption of Electronic Document Delivery in the Gulf States: a feasibility study in the major academic and research establishments in the State of Kuwait**

**5.3.9 The statement was about the effect of the development in libraries services and patrons.**

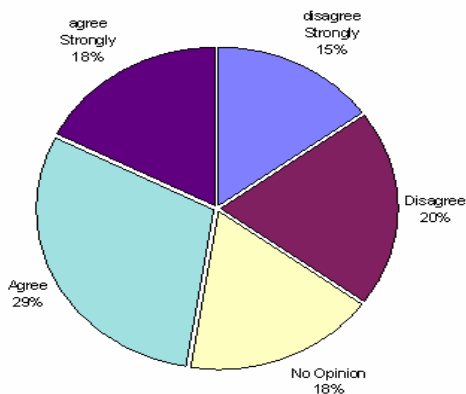
As Charts 5.9 reveal, 13 librarians believed that there would be no effect, but 10 disagreed strongly. However, 12 considered that there would be a negative affect on both the service and the patrons of the libraries. Only 5 answered with no opinion.



**Chart 5.9**

**5.3.10 Statement ten was about the librarian workload and whether it would decrease after developing library services.**

It can be seen from Chart 5.10 that 12 out of 40 agreed with this statement, likewise 7 agreed strongly. However, 14 of the informants believed it would increase the librarian’s workload. But, the rest of the respondents, which were 7, preferred to respond with no opinion.

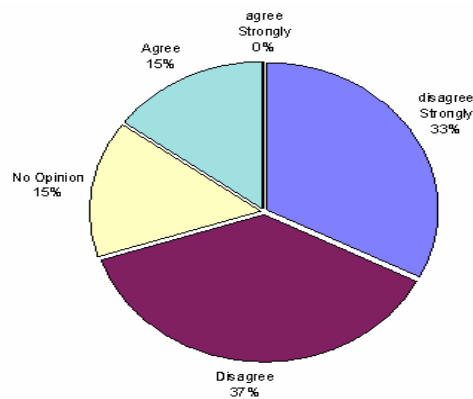


**Chart 5.10**

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**5.3.11 This statement was to verify the importance of recent IT in developing the library services and whether it is essential to the libraries or not.**

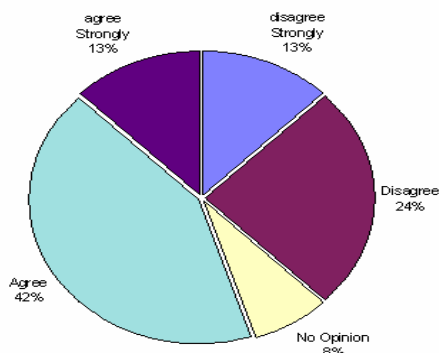
In responding to this statement, 28 out of 40 of the respondents considered that using the latest advancements in IT was essential to the libraries. However, only 6 had an opposite opinion. Also, only 6 responded with no opinion. Chart 5.11 shows the rating of these findings.



**Chart 5.11**

**5.3.12 The last statement was about whether there would be any effect on the library if the ILL service is developed to a more rapid form.**

Chart 5.12 presents the percentage of the librarians who responded to this statement. The response rates were unexpected; 22 of the informants believed that developing the ILL service to provide information more rapidly would not affect the library or information centre. However, 15 considered it essential and believed that the development of this service would affect the library. On the other hand, only 3 did not have an opinion on the statement above.



**Chart 5.12**

#### **5.4 Interview Analysis**

The second source of information and data collection that has been used in this study were the interviews as mentioned in Chapter Four. These interviews were with 8 professionals in the field of information science. These professionals work in different positions at the different establishments and ministries in the State of Kuwait. Their job is around the field of information science and they range between head librarians, senior managers, and teachers at Kuwait University, PAAET, and NISTC (See Appendix 2, Interviewees Table).

The main aim of the interviews was to collect, in depth, all the information that would aid the researcher to enhance and verify the subject under research (See Appendix 3, Interviews questions).

The first three questions of the interview were around the work experience area of interest and the job duties of the interviewees in the field of Libraries and Information Science.

It is obvious from (Appendix, 2) that the experience level for these professionals falls between (7-21) years. The level of the experience of those interviewees discloses that they have great experience in the field of libraries and information science. This experience aided the researcher in achieving the best results, and added several advantages to the research. In addition, the area of interest for all the interviewees is in and around the information technology domain. The job duties for the interviewees, as mentioned, are teaching and managing in the field of Libraries and Information Science.

The fourth and the fifth questions were about the budgets of the three academic establishment libraries. Most of the respondents had a good idea of the amounts in their budgets, and they agreed that it was nearly sufficient to cover the expenses of the libraries.

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However, when asked about the budget allocations to these academic libraries, all of the interviewees remembered the looting that took place in 1990 and how it had affected the Kuwaiti libraries infrastructure, especially the library and information centres that belong to Kuwait University, PAAET, and NISTC. Furthermore, they showed resentment when remembering the first day back at work after the liberation of Kuwait, because of the extent of the demolition that they found in the libraries and the amount of ruined or missing items, and which had then given them a clear recognition of the major task ahead and of the problems that they were going to have to deal with in order to return things to the way they had been.

One of the interviewees (C), who is Assistant Dean of Kuwait University libraries, stated that

“The libraries of Kuwait University, as well as others, had to start from scratch in order to rebuild the collections of the libraries. And, there is a huge drain in the libraries administration budget, especially with the scientific journals, because there are clear indications of the increasing prices of these journals, as well as the payments for these journals having to be in advance”.

Interviewee (C) also added:

“The huge amount that is spent from the libraries administration budget for the rebuilding process after the liberation and up until today has affected negatively the developmental process in these libraries, which as a result has inhibited these libraries from satisfying their patrons’ information needs”.

Question six is about resource sharing activities in Kuwait and with the countries around it. Although, this is a very open question, the interviewees’ perceptions of the issue were varied, and thus there were different answers from the respondents.

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All of the interviewees agreed that there are great benefits from this activity, especially with the advancements of recent technology, which have offered several electronic applications to facilitate information exchange between different libraries.

Interviewee (B), who is an Information Consultant and specialist in IT, emphasized that

“Recent automation systems have common languages, and the most distinguished one is Marc language codes. These languages aided the process of bibliographic information exchange between libraries and information centres world wide, which as a result, facilitated rapid resource sharing, especially after the appearance of Internet technology. Although, in Kuwait, as well as in the Gulf countries, academic where libraries have implemented different types of automation systems, such as VTLS, Horizon, and others, they did not apply any further steps for using the main benefit of these systems, which is the resource sharing of their items with the Gulf libraries”.

Interviewee (C) who is, as mentioned, an assistant dean of Kuwait University libraries, stated the same idea from a different perspective:

“Until now there has been no protocol or agreement in Kuwait for any resource sharing for document information exchange between libraries and other governmental establishments such as the Ministry of Education (public libraries), or even internationally with the Gulf libraries, except with the Sultan Qaboos University in Oman, because Oman is considered to be one of the most active countries in the Gulf area in providing this rapid service. In addition, this service is provided for the patrons, whether locally or internationally, in an amicable and friendly form. However, during the session of 2001/2002 there emerged a type of resource sharing between Kuwait University and NISTC, which is a united list that contains all the scientific periodicals in both academic establishments, in order to avoid duplications and to facilitate the Inter-Library Loan service (ILL) between both establishments’ libraries”.



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When asked about the ILL service, all of the interviewees responded that there is an essential need for this service in Kuwait, because this service could be the getaway that could have been used in order to cover the shortage of library materials after the liberation of Kuwait up until now, due, as mentioned previously, to the looting that took place in 1990.

Interviewee (B) stated that

“The ILL Service is one of the smartest services in the libraries and information centres, because the librarians provide for its patrons what is not currently available in the library materials. The main aim of this service is to gain the satisfaction of the library patrons”.

He went on to say that

“This service is a great method of saving the library budget, especially from buying less important items, such as some books and journals. As mentioned previously, the ILL service helps the library to gain the satisfaction of its patrons. In addition, it gives the library a great opportunity to gain a resource sharing activity, which as a result, will support the library with wider collections in developing the library services”.

However, the informants who work at the libraries on the ground, whether as heads of librarians or as senior managers, claimed that the procedure and the process of the ILL service is in a friendly spirit, particularly between the local or even the Gulf academic libraries, but that in the case of ordering requests from British Library Document Supply Centre they have to follow certain procedures and specific styles for requests through (ARTTel), and pay specific costs for each item, which differ between the types of requests, as to whether it is a book or journal article. Whereas most of the interviewees who worked in the teaching field had a general idea about the ILL service and its advantages, they had no idea about the current status of this service in the libraries concerned in this study, nor of the libraries in the Gulf region.

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When asked about the current state of IT and the infrastructure in the State of Kuwait, in general, and in particular, at each declared academic establishment for each informant, all of the informants emphasized that there were clear indications of the development of IT services in the state, as well as that there was a great usage of IT technology advancements in all work areas. A lot of establishments, enterprises, and organizations depend on recent IT to provide their services, as do the academic libraries. However, the interviewees exposed several significant points related to the development of library services.

Interviewee (A) emphasized that

“Hitherto, the current state of IT in Kuwait has not allowed any type of development, because all the executives up to the ministers, whether for education, planning or any other minister who represents high authority in Kuwait, is not convinced of the importance of information technology and the communications revolution, and the proof of that is in the current state of the PAAET libraries and information centres”.

Whereas, interviewee (C) stated that

“Despite the government, as well as Kuwait University, or any other organization in the State of Kuwait, spending huge budgets on IT developments, there were great insufficiencies of vision from the beginning in creating a clear work plan or map and strategy for the IT infrastructure, which as result blinded the whole university to aspects of gaining the benefits of this revolution”.

Interviewee (H) clarified that

“The NISTC is trying to avoid all the IT difficulties which could arise in the State of Kuwait by employing professionals in this area, and by expending a great effort to keep up to date in order to follow the libraries and information centres of developed countries and to gain, as a result, the best services for KISR researchers”.

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Most of the interviewees did not expect the questions about the relationship between the IT department or centre in the academic establishments for which they worked and the libraries. However, all of the informants stated that there was no relationship and that both represented different fields. When the researcher explored the concept of cooperation, all the interviewees clarified that the IT department job was connected with technical problems and that they had nothing to do with libraries. The general perception of librarians, which they gave about the relationship between them and the IT departments, was that there is gap and also that there was indolence or laziness from the IT departments in offering aid to libraries or even to librarians.

On the other hand, the interviewees claimed that all of the academic establishments provide and send their employees to attend courses in different fields and likewise for IT. However, some interviewees emphasized that there is no clear strategy for these courses and that there are no courses connected with libraries and the information fields, particularly courses around IT and the use of it in the libraries and information centres.

The issue of EDD was explored, as well as that of Ariel technology. Most of the informants had no clear idea about EDD and the main benefit from developing the ILL service through this technology. In addition, all the informants had absolutely no idea about Ariel technology, and how this technology might affect ILL services by transferring information rapidly through Internet technology. Thus, when asked why there were no indications of developing academic library services, especially the ILL service, there were no signs of a clear understanding of EDD among librarians.

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Interviewee (B) frankly emphasized that

“There is not enough motivation for improving library services, whether from librarians or heads of librarians. Moreover, in Kuwait, as well as in the countries around it, until now there have been no agreements between libraries and information centres to facilitate resource sharing and to confirm cooperation, and if there are, it is in an amicable and friendly form and it is not codified by a clear strategy or policy. Thus, it is felt that there is no great need for implementing this technology”.

The last question was about the use of what has evolved from recent IT. However, the interviewees moved instead towards a view of the employee situation in the academic libraries in the State of Kuwait. All the informants agreed that there is a great shortage of library staff, especially of those who are specialized in library and information science. Although, in the State of Kuwait there are two institutions that have a library and information science department, as mentioned in Chapter Two, the numbers of graduates from these institutions are not sufficient to cover the needs of Kuwaiti libraries, particularly the academic ones.

Furthermore, the interviewees agreed that the academic libraries in the State of Kuwait are suffering from an inhibition of development in their libraries and in their provision of services due to the shortage of professional staff.

Interviewee (D) who is Dean of the Information Resource Department at PAAET stated that

“There are several services that PEAAT libraries have stopped providing to its patrons, as well as some libraries being closed, because of the extreme shortage of librarians at these academic libraries. Although, since I started working as the Dean of this department two years ago, I have requested 20 librarians in order to overcome this dilemma; however, all that I have received are 2 librarians out of the 20”.

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On the other hand Interviewee (C) added a significant point by stating:

“There is a clear indication that the absence of librarians in the Kuwait University libraries, as well as in other academic libraries in the nation, is caused by the absence of financial inducements to encourage people to take up the profession, and is due to the fact that librarians in Kuwait receive the minimum income, without any financial compensation compared with other jobs in the state”.

## **5.5 Summary**

The main aim of this research, as stated in the previous chapters, was to investigate the possibilities for developing one of the library services, Inter-Library Loans, through the use of Electronic Document Delivery to enable information document exchange between libraries and information centres through Internet technology within Kuwait and to the surrounding countries. In addition, this study verified the possible influence of EDD technology on librarian performance.

The overall findings from the research survey with the use of two research method tools, those of questionnaires and interviews, reveal that most of the librarians understood the main benefits of recent IT, and believed that what has evolved from recent technology is essential for developing the library services. However, there were a number of the informants who recommended providing their services manually. Most of the informants believed that the continuous developments in IT presented problems for them and placed it as a disadvantage. The librarians showed, however, that they were ready to provide their services, even if these services were enhanced to an electronic form.

On the other hand, even with the information explosion that has caused an increase in the expectations of library patrons for getting information, the informants of this study responded with unexpected perceptions of the ILL service; more than half of the librarians believed that developing the ILL service would not affect the library, which as a result exposed a fuzzy vision of the concept of resource sharing and the importance of the ILL service.

It can be concluded that this chapter explored the barriers that hinder the emergence of EDD in the concerned libraries, and highlighted several issues that need serious attention, such as: the need for resource sharing activation, a need for a clear understanding of the importance of the ILL service, the IT mismanagement in the State of Kuwait, the shortage of human resources, particularly librarian personal, the lack of confidence in using recent IT, and the need for developing IT skills.

## **Chapter six**

### **Discussion and Recommendations**

#### **6.1 Discussion**

The purpose of this research was to examine three major academic establishment libraries in Kuwait through conducting a case study to verify, in depth, the status of their IT applications: electronic services; co-operation and resource sharing activities, both locally and internationally; and, collections and staff expertise. All of these areas were examined in order to understand the reasons why these libraries had not yet adopted the Ariel system of Electronic Document Delivery in order to improve the processing of requested materials through the Inter Library Loan service. The questionnaires and interviews were used as instruments to assess the attitudes and perceptions of the staff in these libraries and of the professionals in the field of Library and Information Science who work in these academic establishments, whether teachers or senior managers, to examine the reasons that hinder the implementation of the system above and to discover whether there was a lack of awareness, skills or motivation towards it. This discussion section is based, in part, upon the literature examined for this part of the study.

#### **6.2 Resource-Sharing Activities**

Primarily, the perceptions of all the informants, particularly those of the interviewees showed that there was an extreme desire for resource-sharing activities, both within Kuwait and with the countries around it.

All the interviewees agreed that there would be great benefits from resource sharing activities, especially with the development of electronic applications, which have evolved from recent IT, and which offered possibilities for facilitating information exchanges between different libraries.

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It is, therefore, not surprising that all informants had this perception, as Anwar and Al-Jasem (2001) had previously noted that

“Librarians consider resource-sharing very important for their libraries, (and) are aware of its benefits, ...” and that “Librarians know the hurdles in developing a resource-sharing network.” (Anwar and Al-Jasem, 2001).

This appeared clearly when one interviewee stated that

“Until now there is no protocol nor an agreement in Kuwait for any resource sharing for document information exchange between libraries and other governmental establishments, such as the Ministry of Education (public libraries), or even internationally with the Gulf libraries....”(Interviewee C)

The above interviewee is echoing Aman’s opinion in 1989 when he stated that

“The problems lie mostly in the absence of protocol agreements ...”

Even, when after 3 years, the same author had visited the State of Kuwait at the end of 1992, Aman pointed out that he was surprised to find that

“No agreement exists on choosing one library automation system for the three major library systems in this small country” (Aman, 1992).

However, the interviewees were aware of the advancement of technology, as mentioned above, and how these advancements had evolved different methods of facilitating information exchange. Nevertheless, hitherto, there was no sign of gaining these benefits in Kuwait or in the Gulf region:

“Recent automation systems have common languages, and ... These languages aided the process of bibliographic information exchange between libraries and information centres world-wide... Although, in Kuwait, as well as in the Gulf countries, academic libraries have implemented different types of automation systems such as VTLS, Horizon, and others, they have



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not taken any further steps to exploit the main benefit of these systems, which is the resource sharing of their items between the Gulf libraries.” (Interviewee B)

On the other hand, AlQudsi-Ghabra (1999) observed that

“Library budgets are being cut for many reasons, but at the same time library materials are increasing in cost”.

It is perhaps a significant explanation, which was delivered by 26 of the 40 informants who completed the questionnaire, that there were those who thought that there would be barriers to the process of implementing new technology and with the cost of it. Most of the interviewees were familiar with the libraries’ budgets, and also believed that they were barely sufficient to cover the libraries’ current needs.

One interviewee commented that

“The libraries of Kuwait University, as well as others, had to start from scratch in order to rebuild the collections of the libraries. And, there is a huge drain in the libraries administration budget....”(Interviewee C).

The same interviewee also added:

“The huge amount that is spent from the libraries administration budget for the rebuilding process after the liberation and up until today has affected negatively the developmental process in these libraries, which as a result has inhibited these libraries from satisfying their patrons’ information needs.”

AlQudsi-Ghabra’s (1999) understanding of this problem led her to comment that

“In Kuwait..., resource sharing will increasingly be a priority in institutional planning”.

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There were, however, some small steps that had been taken since AlQudsi-Ghabra made her assumption about the academic libraries activating resource sharing:

"...During Session 2001/2002, there emerged a type of resource sharing between Kuwait University and NSTIC in the form of a united list of all the scientific periodicals in both establishments, in order to avoid duplication and to facilitate the Interlibrary Loan service between both establishments' libraries." (Interviewee C)

The same interviewee also mentioned that there were some activities of resource sharing between Kuwait and the Gulf countries, particularly with Oman.

### **6.3 Awareness of Electronic Document Delivery systems**

Al-Ibrahim (1993) highlighted that there were recommendations made by the Arab Bureau of Education (ABE), in consultation with the Gulf academic establishment's libraries, after conducting a pilot project that took over two years, from 1985 to 1987, and the most significant recommendation was:

"Rapid communication systems should be provided for both requests and document delivery."

However, most of the interviewees had no clear understanding of Electronic Document Delivery nor of its benefits to the Inter Library Loan service, and none were aware of the Ariel software. One interviewee frankly explained that

"There is not enough motivation for improving library services, whether from librarians or heads of librarians. Moreover, in Kuwait, as well as in the countries around it, until now there have been no agreements between libraries and information centres to facilitate resource sharing and to confirm cooperation, and if there are, it is in an amicable and friendly form and it is not codified by a clear strategy or policy. Thus, as a result, most librarians do not know enough about Electronic Document Delivery as well as other resource sharing activities." (Interviewee B)

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The same interviewee, however, asked about the benefits of Inter-Library Loan, and frankly emphasized that

“This service is a great method of saving the library budget, especially from buying unimportant items that they do not use. As mentioned previously, it helps the library to gain its patrons’ satisfaction. Also, it gives the library a great opportunity to gain a resource sharing activity, which as a result will support the library with wider collections in developing the library services.”  
(Interviewee B)

Since, the ABE made the recommendations during 1987 about the ILL in the Gulf region, the literature shows that until now, there have been no clear activities or use of any system to facilitate electronic document delivery between the Gulf libraries and information centres, which causes, as a result, apathy toward the ILL services and user demands. This appeared clearly when the informants answered the questionnaire in an unexpected way. 22 of the 40 respondents believed that developing the Inter-Library Loan service to provide more rapid delivery of requested items would not benefit the standing of the library or information centre. These findings confirmed the ILL study results that were explored by Siddiqui (1996):  
“Problems with ILL are due to the work style of libraries and their staff...”.

#### **6.4 Attitudes Toward IT Applications**

Al-Ansari (1999) illustrated that

“Information technology has been one of the major factors causing changes in the way people communicate, locate, retrieve, and use information”.

Between the informants to the questionnaire survey, there was a degree of confidence in the introduction of electronic systems. Only three of the informants believed that practical problems would emerge after the Inter-Library Loan service became more dependent on Information Technology.

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When asked about the current state of the IT infrastructure in Kuwait, all of the interviewees emphasised that there are clear indications of progress. However, while acknowledging that the Kuwaiti government is expending great efforts on building an IT infrastructure, the interviewees exposed several significant concerns related to the development of library services.

One interviewee, who works as a teacher assistant in the department of Libraries and Information Science at PAAET, explains that the slow progress in implementing IT in libraries was because of a wider problem which is:

“Hitherto, there was little progress in the state of IT in Kuwait, because all the executives up to the Ministers, whether for education, planning or any other Ministry that represents high authority in Kuwait, were not convinced of the importance of Information Technology and the communications revolution...” (Interviewee A)

The interviewee is confirming the opinion explored by Aman (1992) that the Arab-world governments have no regard for the value of libraries and the information they provide.

Another interviewee emphasised that

“Despite the government, as well as Kuwait University, or any other organisation in the State of Kuwait, spending huge budgets on IT developments, there was a limited vision from the beginning in creating a clear work plan and strategy for the IT infrastructure, which as a result blinded the whole university to aspects of gaining the benefits from this revolution.” (Interviewee C)

There was, however, still a significant degree of awareness of the introduction of IT applications in libraries and information centres. Fourteen of the 40 librarians who responded to the questionnaire survey still recommended providing their service in a manual form.

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Maybe this is one of the essential factors that hinders the management of IT applications, especially in that not only are the libraries and information fields suffering from this barrier, but so is the Kuwaiti business sector, as Marouf and Rehman, (2004) stated, although, this point has not surfaced in the previous published studies of libraries and information work. However, it is clear from the informants that there is something here that needs to be given some consideration.

Despite the awareness of IT introduction, 36 informants believed that recent IT developments offered several tools that could improve the services of the libraries and information centres, and a similar number believed that they understood the main benefits to be gained from using new technology in terms of saving time, effort and cost. Thirty-one librarians believed that the electronic processes and services would produce better outcomes than manual procedures.

In addition, 28 considered that using the latest advancements in IT was essential to the libraries, confirming Rehman and Ramzy, (2004) that

“In recent decades, libraries have been employing new technologies and introducing electronic resources and services to satisfy user needs”.

This is perhaps significant, as there are studies that have addressed that which hinders the academic libraries development most, that is, the continuous reduction, as mentioned, in governmental funding, and the drop in oil revenues (Zehery, 1997; AlQudsi-Ghabra, 1999). However, the second interviewee added another opinion, which was that there was no effective management of IT applications in the libraries and information sector.

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This problem is not only in the libraries and information domain. A recent study by Marouf and Rehman, (2004) illustrated that IT applications and the information management in the State of Kuwaiti companies are suffering from a lack of appropriate IT personnel, and both authors pointed out that the main barrier is that there is "no effective and efficient management of IT and information applications" ( Marouf and Rehman, 2004).

### **6.5 Human Resources**

Marouf and Rehman (2004) also noted that "The most vital factor for IT and information management in any organization is the availability and preparedness of its human resource".

Abdul-Hadi (1999, quoted by Kandeel, 2001) described the main obstacle reducing the efficiency of any types of libraries and information centres, is the absence of a sufficient IT background among the staff, which causes a weaknesses in the skills available for the use of IT applications and a lack of a clear understanding of the importance of the use of them.

23 of the informants to the questionnaire survey believed that there was no need for librarians to be experts in computer applications. However, almost, one third of the respondents felt that a librarian should have a high level of computer skills in order to use automated library systems. One of the major libraries had adopted its own strategy to overcome these deficiencies in personnel training:

"The NSTIC is trying to avoid all the IT difficulties in the State of Kuwait by employing professionals in this area as well by as expending a great effort to keep up to date in order to follow developed countries' libraries and information centres and to gain, as a result, the best services for KISR researchers." (Interviewee H)

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There was more agreement about the impact of staff shortages. All the interviewees agreed that there is a great shortage of staff who had studied librarianship and information science, and that this was inhibiting the development in their libraries. One stated that

“There are several services that PAAET libraries have stopped providing to its patrons, as well as some libraries being closed, because of the extreme shortage of librarians at these academic libraries. Although ... I have requested 20 librarians in order to overcome this dilemma ..., all that I have received are 2 librarians out of the 20.” (Interviewee D)

This situation is exacerbated by the fact that

“There is a clear indication that the absence and dissatisfaction of librarians in Kuwait University libraries, as well as in other academic libraries in the nation, is caused by the absence of financial inducements to encourage people to take up the profession, and is due to the fact that librarians in Kuwait receive the minimum income, without any financial compensation compared with other jobs in the state.” (Interviewee C)

The survey respondents overall felt that the introduction of IT based methods would be beneficial in terms of their current status. Nevertheless, there were some concerns about the impact on the librarian’s workload. Almost half (19) of the librarians believed that their workload would decrease after developing library services, while 14 of the respondents believed it would increase their workload. This perhaps reflects a concern that has been felt in Kuwait since the end of the first Gulf War, when political restrictions on the employment of expatriates from countries judged to have been unsupportive of Kuwait, severely reduced the workforce and placed greater pressure on those who remained (Aman, 1992; Al-Hassan and Meadows, 1994).

## **6.6 Conclusions**

Overall, there are several barriers that are inhibiting the development of the concerned Kuwaiti libraries services, and particularly the ILL service. In Kuwait, there is zeal and a strong desire for the activation of the concept of resource sharing between libraries and information centres, because of the continuously increasing demands of their library users for information. However, what hinders the emergence of this concept is the fuzzy understanding of the importance of it among the people who are working in these libraries. This fuzzy understanding also causes several obstacles connected with bringing in what has evolved from recent IT to enhance the services in these libraries, which as a result, causes apathy towards the importance of the library services and, likewise, towards the ILL service.

Managers who wish to overcome these barriers and who understand the value and importance of time have to take serious initiative in organizing staff development programmes. In addition, senior managers need to take advantage of what has evolved from recent technology, through looking around them and taking previous experiences from the libraries and information centres of developed countries as good examples. Likewise, senior managers should consolidate the concept of resource sharing with other libraries in the state and in the countries around Kuwait and in addition look to the all complexities that hinder the development of these academic libraries and try to find effective solutions.

On the other hand, the libraries need to keep up with and follow the latest advancement in recent IT, specifically the technologies that aid in activating the concept of resource sharing and which are avoided by librarians in these academic libraries. All the evidence points to the fact that in order to take advantage of recent technology people who work in the libraries and information centres need to have familiarity with and confidence in using IT.



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This can be developed in many ways, clearly the staffing point is from both schools of librarianship in the State of Kuwait, but there is also a need for intensive IT courses for librarians who are already working and for individuals to take some responsibility for organizing their own skills.

It is worth mentioning to say that expertise and professionals from different fields, particularly in IT, should realise the importance and the need for developing a good information environment through giving support and encouragement as well as in not having friction between people who work in the libraries and information centres, in order to share knowledge and to build and to facilitate information sharing.

It can be concluded that the main hindrance to the academic libraries in Kuwait to raising the level of their services and developing its procedures are the major shortages and the absence of staff. Thus, it is important for these academic establishments to cooperate with other governmental establishments to find serious solutions to overcome this dilemma in order continuously to fulfil their patrons' demands.

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**(Appendix – 1)**

Dear Librarians

Between your hands is a questionnaire, the aim of which is to discover the librarians' perceptions, opinions and attitudes towards the Inter-Library Loan service and the development of it through the use of electronic document delivery, in order to develop the academic libraries service for facilitating electronic information transmission between them. The questionnaire is part of a Master's Degree dissertation at the Robert Gordon University, Aberdeen Business School, Scotland, United Kingdom. The researcher would be thankful for the time that you going to spare in filling out this questionnaire. The answers that will be gathered will be treated confidentially and the information will be used for the purpose of this research. Please, mark carefully the answers that represent your opinions and which you think it are the most appropriate. Your answers will aid the researcher in achieving the best for his research aims. Thank you for your kind co-operation.

Meshal Shehab Al-Fadhli  
The Robert Gordon University  
Aberdeen Business School  
Scotland  
United Kingdom

## Questionnaire

### (Appendix – 1)

Please note that the original questionnaire was in the Arabic language. The following is the author's translation:

**1. Recent IT has provided several tools, which can be utilized to improve the quality of service in the libraries and information centers.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**2. Developing library services and procedures decreases the librarian's role in the library.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**3. Despite some of the work processes being able to be performed by using technological facilities, some librarians would prefer to perform their work manually.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**4. All relevant technological products must be used in order to develop information center services and to save time, efforts, and costs.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**5. There are difficulties, whether with manual or electronic work processes, hence the outcome will be equal.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**6. There are still problems with technology product development, which makes the process of implementing it difficult and rather expensive.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**7. It is not necessary for a librarian to be a professional or to have very high computer skills in order to use any software or systems connected to the libraries domain.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**8. If librarians depend on recent technology to provide a library service, problems would arise as a result.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**9. Developing library services, will negatively affect the rest of the services in the library, as well as negatively affecting the library users.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**10. Developing one of the library services will decrease the librarian's workload.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**11. There are several techniques that can be used to develop the library services without the need to implement any software or systems that have been provided from recent technology.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

**12. The ILL service is one of the essential library services, whereas utilizing the technology to improve it does not affect the information center.**

- Disagree Strongly
- Disagree
- No Opinion
- Agree
- Agree Strongly

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**(Appendix - 2 Interviewees table)**

<b>Sequence</b>	<b>Job Title</b>	<b>Experience</b>
<b>A</b>	Teacher Assistant, Department of Libraries and Information Science, PAAET	7 Years
<b>B</b>	Information consultant at the Interior Ministry, also mandatory as teacher assistant in the department of Libraries and Information Science, in Kuwait University and PAAET	7 Years
<b>C</b>	Assistant Dean for the libraries administration, head of the Education library, Kuwait University	Over 15 Years
<b>D</b>	Professor at the department of libraries and information science, and the dean of the Education Resource Department at PAAET	Over 21 Years
<b>E</b>	Librarian, Engineering & Petroleum Library, Kuwait University	14 Years
<b>F</b>	Head of librarians at NISTC division in KISR	Over 12 years
<b>G</b>	Head of the cataloging section at the Information Resources Department, PAAET	9 to 10 Years
<b>H</b>	Librarian in NISTC, KISR	Over 7 Years



## Interview

### (Appendix - 3)

**Name:**.....

**Job Description:**.....

**Qualification:**.....

**Organization:**.....

(Open Questions)

1. **How long have you been working in the libraries domain?**
2. **In what kind of areas you are interested in the libraries field?**
3. **What kinds of responsibilities or duties do you have at work?**
4. **Is the annual budget that comes to your administration from your organization sufficient? And how much is it?**
5. **On what, mostly, does your administration spend this budget?**
6. **How do you update yourself in the area of libraries and information science?**
7. **What is an adequate definition of the ILL service?**
8. **Would you explain the procedures in your library for providing the ILL service?**
9. **Are there any acts, legislations or policies that your libraries have to follow for providing the ILL service between libraries, whether in Kuwait or internationally?**
10. **In your organization is there an IT department to support the libraries and librarians?**
11. **What is the relationship between the IT department and the libraries administration, particularly with the libraries and librarians?**

- 12. Does your organization offer for its librarians training courses in the field of technology, or IT courses for librarians?**
- 13. Since you are the head manager, do the librarians, especially the ILL service managers, have the essential skills for using computers?**
- 14. Have any of your ILL managers created projects or invented solutions to develop the ILL service? If not, why not?**
- 15. If one of the librarians created an innovation or project to develop the services in the libraries, especially to save time and costs, what would be the organization's role and reaction toward this project or innovation?**
- 16. Have you ever heard of the software system called Ariel or Projects like ESTAR or Prospero?**
- 17. Would you explain, please, why until now the ILL service is not developed yet in your libraries, especially for sending and receiving documents?**
- 18. Has your administration or the IT department ever made a project or found a solution for developing the ILL service, especially one for facilitating the delivery of hard copy, whether for sending or receiving documents between the libraries?**
- 19. In your opinion, what would be the advantages and disadvantages, if your organization implemented software to facilitate the transmission of the documents via Electronic delivery?**