

## **Impact of ICT on Privacy and Personal Data Protection in Two Malaysian Academic Libraries**

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### **ABSTRACT**

The rapid advance of information and communication technologies (ICT) has permitted the creation of digital libraries. However, the development of the digital library has created certain threats in some aspects especially in terms of privacy and personal data protection which is generally regarded as confidential between the library and the individual. This study aims to investigate the policies, preparedness and awareness of two Malaysian public academic libraries i.e. International Islamic University Malaysia (IIUM) and Universiti Putra Malaysia (UPM) on the issues of privacy and data protection. This study also attempts to discover the library users' perceptions with regard to the collection and use of their personal data and to examine the policies and practices adopted by libraries in relation to users' privacy. The methods of the study were interview and questionnaires. The library staffs in charged personal data collection from the two public academic libraries were interviewed. Questionnaires

were distributed randomly to the library users from the two public academic libraries. The findings showed that the majority of library personnel were aware and observe the privacy and data protection policies in their libraries even though there were no official written statements concerning this subject. They also realized that these issues were still pending in term of implementation at their parent organizations (university) as well as in their libraries. The finding also shows that library users were aware about their privacy and personal data protection and they realize that their privacy and personal data protection were threatened.

### ***Aim of the Study***

The paper aims to investigate the policies, preparedness and awareness of two Malaysian public academic libraries i.e. International Islamic University Malaysia (IIUM) and Universiti Putra Malaysia (UPM) on the issues of privacy and data protection. This study also attempts to discover the library users' perceptions with regard to the collection and use of their personal data and to examine the policies and practices adopted by libraries in relation to users' privacy.

### ***Research Questions***

This study aims to answer the following questions:

1. How library users utilize the internet in accessing the information provided by digital library?
2. Are library users' personal data protected in our digital library environment?
3. What is the level of awareness concerning data protection among the library users?
4. What are the users' perception concerning the collection and usage of their personal data by the library?
5. What is the level of awareness among library staff concerning their responsibilities in protecting their clients' privacy?
6. What type of user personal data that librarians collected in digital form?
7. At what level the digital library has performed data protection policy in maintaining users' personal data?
8. Do digital libraries in Malaysia practice or implement data protection policy?

### ***Method***

The methods of the study were interview and questionnaires. The library staffs in charged personal data collection from the two public academic libraries were interviewed. Questionnaires were distributed randomly to the library users from the two public academic libraries.

### ***Findings***

The findings showed that the majority of library personnel were aware and observe the privacy and data protection policies in their libraries even though there were no official written statements concerning this subject. They also realized that these issues were still pending in term of implementation at their parent organizations (university) as well as in their libraries. The finding also shows that library users were aware about their privacy and personal data protection and they realize that their privacy and personal data protection were threatened.

***Keywords*** ICT, Privacy, Digital library, Security, Data Protection

## **INTRODUCTION**

The library plays the role as the central organ of institutions which provides many types of materials delivering information to the users such as politics, economics, psychology, social sciences etc. Seeking information is very important in human life. It is the basic step to improve the human lifespan. A library can be defined as an organized collection of items of various formats (books, journals, videos, CD-ROMs, etc.) along with the services required to make them available to a given user group or groups (Tennant, 1999).

The digital form of information resources and services in the library keep growing year by year and permitted the creation of digital libraries. This innovation depends on two important communities; they are information professionals and computer science researchers (Arms, 2000). Basically, it shows that the main component for success in developing the information and communication technologies is the computer. The outcome of the process is the development of the digital library environment which is all based on computer use.

The existence of the digital library has moved access to the information needed electronically and made it more attractive. Applications of interactive multimedia in libraries will allow users to explore the information needed effortlessly. However,

according to Sturges, Illife and Dearnley (2001), the advent of digital technology has posed some threats in some aspects especially in terms of personal privacy. In relation to privacy, the library should have a privacy policy to show the concern of library management.

Thus, it is important to have a professional code of ethics and conducts as a guideline. One of the sources of the professional code of ethics and conducts states clearly about confidentiality between users and the libraries is:

“We protect each library user’s right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired, or transmitted”.

(Code of Ethics, The American Library Association (ALA), 1995)

In fact, data protection is really needed in any library environment especially in the digital library. It helps library management to be aware of and concerned about the protection of users’ personal data. Access control helps maintaining data security and the authenticity of the information in the library system.

In the United Kingdom and US several research studies on privacy and data protection in the digital libraries environment have been undertaken (Davies, 1997; Sturges et al., 2003; Warren, 2002; The Association of Research Libraries (ARL), 2003). However, in Malaysia, there are no reported studies in this particular area.

### ***Definitions of Digital Library***

There are many definitions related to digital library, among them are: digital library, electronic library, virtual library, paperless library, library without walls, online library and so on. According to Lesk (1997: 1), digital library means “a collection of information that is both digitized and organized”. Watstein, Calarco and Ghaphery (1999) mentioned that whatever the term used, it shows the development of library and information science. The description of the library is according to the term used such as paperless library determined by their collections, and print materials are distinguished from non-print materials.

However, the terms used for the new developments in libraries as agreed on by the Association of Research Libraries (ARL), are ‘digital library’, ‘electronic library’ and ‘virtual library’ which are often used interchangeably. A review of the literature indicates that most definitions used in defining the meaning of digital library is brought out from the Association of Research Libraries (ARL), 1995 (Allard, 2000; Watstein et al., 1999; Fox and Urs, 2002): (a) the digital library is not a single entity, (b) the digital library

requires a technological link to the various resources, (c) the linkages between the digital libraries and information services are transparent to the end users, (d) universal access to digital libraries and information services is a goal, (e) Digital library collections are not limited to document surrogates: they extend to digital artifacts that cannot be represented or distributed in printed formats.

### ***Features and Characteristics of the Digital Library***

In term of features and characteristics of the digital library, according to Lesk (1997) the requirements for building digital library are that the digital library must have content and the content must be found. The material must be digital and converted into digital form if not. The retrieval systems are needed to find the stored and wanted information more easily and quickly. The transition of the traditional library to the digital library has changed the social system by which information is collected and transferred. The major changes are the way of distributing and storing information and the way it is used in society. The use of digital technology has resulted in advantages for digital libraries. It makes it easier to write books, save their content and everything being written. The ability to find information also increases. It is cheaper and easier for the library to store electronic rather than printed information.

Fecko (1997) stated in planning for the digital library, the features that should be considered for the audience are browsing, searching, the ability to customize and printing capability. Catenazzi and Sommaruga (1995: 128-131) asserted that there are five interface designs for digital libraries: plain text interface, image-based interface, hypertext-based interface, book-like interface and lastly mixed strategy which is a combination of the previous interfaces. The conversion of traditional to digital libraries involves all parties in the library. The librarians and supporting staff play important roles.

According to Sharma and Vishwanathan (2001), all the staff need to attend adequate training and have guidelines to execute a smooth transition from traditional to digital. Digital libraries depend on internet and intranet connections. The roles of librarians and staff are to prepare for the transformation from traditional management into the computer based system. Virus attacks can occur through the connection. Thus, it is also important to keep printed information in order to avoid interrupted functioning. Safeguarding the functioning system is crucial. Common laws and procedures provided by government are very important to eliminate the misuse and theft of information.

In short, to build the digital library is not an easy matter. It involves a combination of man power and computer based systems which needs a high cost to

allocate. The previous literature did not touch on the privacy and data protection issues especially in the digital library environment. The following discussion will focus on the issue of privacy and data protection in the digital world generally and then more towards the digital library environment specifically.

### ***Privacy and Data Protection***

In Western countries, privacy and data protection are important issues affecting libraries and library users. According to The Calcutt Committee, United Kingdom privacy can be defined as:

The right of the individual to be protected against intrusion into his personal life or affairs, or those of his family, by direct physical means or by publication of information.

(As cited in Abu Bakar and Siti Hajar, 2002: 3)

Abu Bakar and Siti Hajar (2002) state that it is not so easy to bring together the relationship between privacy and data protection because data protection is a technical term relating to specific information management practices. In contrast, privacy can be considered as a fundamental human right and accorded specific protection under human rights conventions or constitutions. Therefore, they need each other, in order to have well-prepared information management practices as well as the protection of human rights. Until now, there are three international bodies governing data protection: (a) the Council of Europe Convention for the Protection of Individuals with regards to the Processing of Personal Data 1981, (b) the Organization for Economic Cooperation and Development (OECD) Guidelines governing the Protection of Privacy and Transborder Flows of Personal Data 1980, (c) the Europe Community Directive on the Protection of Individuals with regard to the Processing of Personal Data and on the Free Movement of Such Data 1995.

According to Brophy (2001), the data protection legislation has been enforced in the UK since 1984. The legislation focused on the use of individuals' personal information in certain circumstances and for legitimate purposes. The organization is responsible to ensure the confidentiality of information collected. The key elements of information in the legislation that is held by organizations or individuals should; (a) only be obtained fairly and legally, (b) be held only for purposes declared by the organization, (c) be used or disclosed to others only in accordance with the organization's declaration, (d) be limited to data that is adequate for, relevant to and not excessive for the declared purposes, (e) be accurate and be kept up to date, (f) be

kept no longer than necessary, (g) be copied to the subject of the data on request and (h) be properly protected against unauthorized disclosure.

It is very important to the library to make sure that the data submitted will not be misused. Libraries as 'trusted intermediaries' should maintain the highest standards of care in ensuring that personal data is not passed on, even inadvertently, to other parties. Ticher (2001) explained the users' rights under the United Kingdom Data Protection Act 1998. He stated that, the user has the right to:

- Have information about who is using their data and for what
- Withhold consent to the use made of their data in some cases
- Opt out of direct marketing and tele-marketing
- Restrict automated decision-making
- Apply for subject access
- Ask the Data Protection Commissioner to make an 'Assessment' of whether an organization or person is complying with the Act.

### ***The Malaysian Scenario on Privacy And Data Protection Issues***

According to Datuk Dr. Rais Yatim (2003), the then Minister in the Prime Minister's Department, this law regulates the collection, possession, processing and use of personal data by individuals or organizations. It will protect the individual's personal data and safeguard the privacy of an individual (National ICT Security and Emergency Response Centre (NISER), Bernama, Oct 9, 2003).

The proposed law, called the Personal Data Protection Act, covers the threats to privacy in terms of the capacity of information technology to collect, analyze and disseminate information, new developments in medical research and health-care, communications, advanced transportation systems and financial transfers and lastly, networks and processing systems creating a comprehensive dossier on a person. The meaning of personal data in the Malaysian draft legislation is:

“...any information recorded in a document in which it can practically be processed wholly or partly by any automatic means or otherwise which relates directly or indirectly to a living individual who is identified or identifiable from that information or from other information in the possession of the data user, including any expression of opinion about the individual and any indication of the intentions of the user in respect of that individual”.

(Abu Bakar and Siti Hajar, 2002: 174)

The purpose and objectives of the proposed law is to provide a secure electronic environment in line with the objectives of the Multimedia Super Corridor (MSC) objectives; to create confidence among consumers and users of both network and non-network industries, and to accelerate the uptake of e-based transactions.

Others objectives are:

- Communications and e-commerce hub where the national adoption of e-based transaction is
- A premier investment centre for the communication and multimedia industry
- A premier test-bed for applications of information and communication technologies
- A preferred trading partner that provides international standards of personal data protection

(Ministry Of Energy, Communications and Multimedia, June 2002)

As mentioned by Abu Bakar and Siti Hajar (2002), the enforcement of data protection principles depends on three ways to set up the proposed law. Firstly, compulsory registration of all data users supervised by the Commissioner and backed up by criminal law. Secondly, on receipt of a complaint by a data subject to the Commissioner alleging the contravention of the principles. Lastly, by providing data subjects with rights arising out of some of the principles. The nine Data Protection principles are:

Principle 1: The personal data shall be collected fairly and lawfully

Principle 2: Purposes of collection of personal data

Principle 3: Use of personal data

Principle 4: Disclosure of personal data

Principle 5: Accuracy of personal data

Principle 6: Duration of retention of personal data

Principle 7: Access to and correction of personal data

Principle 8: Security of personal data

Principle 9: Information to be generally available



(Abu Bakar and Siti Hajar, 2002: 189-205)

However, Malaysia has implemented the Communication and Multimedia Act 1998 (CMA) which has ten policy objectives: creating a global hub, building a new civil society, nurturing local content and culture, giving priority to people, nurturing users' confidence in the new sector, promoting access and equity, growing applications service markets, allocating resources efficiently, developing sector capabilities and lastly, providing secure and safe networking (Suriah Abdul Rahman, 2003).

### ***Implementation of Privacy and Data Protection in The Digital Library Environment***

The online and computer network application in the digital library also require privacy and data protection. This privacy and data protection should be included in the library policy. It will generate the information management practices more efficiently and protect privacy as a part of users' rights. Digital libraries depend on the Internet and Intranet connections. Sharma and Vishwanathan (2001) mentioned that the points that should be considered in changing from the traditional to the computer based system are:

- Anticipated traffic to flow over the network
- Origin and destination of that traffic
- Types of applications that will be made available on the network and
- Set procedures if part of or the whole network fails

The restriction of access will help the library to safeguard the privacy of library users. The different methods of authentication have different implications for user privacy. Each method has trade-offs between ease-of-use, privacy, manageability, and security.

One of the authentication mechanisms is client authentication. Client authentication means making users prove that they are who they say they are before allowing them access to a particular area (Guenther, March 2001: 54). It is the second step from two steps. The first step is a login or user name and the second is asking user to prove who he is with a password, a signature, or biometric identifications (using a physical attribute to prove identity, e.g. retinal scan or thumb print). She also mentioned some of the basic methods in authentication that can be chosen are user

name and password authentication, cookie file authentication, encryption and authentication, digital certificates and smart cards.

Thus, it depends on the library management to choose the best way to protect privacy and keep data safely in order to win users' confidence.

## **OBJECTIVES OF THE STUDY**

The objectives of the study were; (i) to investigate the level of library staff and users' awareness of data protection in public academic libraries in Malaysia, (ii) to determine the preparedness and readiness of the academic digital libraries in implementing their data protection policy, (iii) to find out library users' perceptions with regard to the collection and use of their personal data, (iv) to find out the policies and practices adopted by libraries in relation to user privacy, (v) to discover the utilization of the Internet as a medium for accessing information in the digital library environment.

## **LITERATURE REVIEWS**

There were several studies conducted on privacy and data protection in the digital libraries environment. Firstly, the study carried out by Sturges et al. in 2003 had used several research methods, including sending postal questionnaires to libraries, administering questionnaires for users and telephone interviews with software system suppliers. The findings suggested that users had low levels of anxiety about privacy when using libraries because they expected that libraries would not pass on personal data to other bodies. Meanwhile, the librarians respected privacy as a professional value in principle and did not give it a high rating against other values.

Sturges, Teng & Illife (2001) believed that privacy is strongly considered to be a human right, and it is stated in the United Nations' Universal Declaration of Human Rights, adopted in 1948. The confidentiality of the transaction between the user and the library is explicitly protected in all the most prominent statements of the ethics of the librarian. There are various types of resources which discuss ethical guidance in professional codes of ethics and conduct. One of them, the American Library Association (ALA)'s Code of Ethics states;

"We protect each library user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired or transmitted".  
(ALA, 1995)

This code covers various types of codes which have similar professional ethics and conducts from other information-related organizations.

In a research conducted by Davies (1997) on data protection issues in managerial and philosophical for academic library managers, he described the situation in a segment of academic information and library services in the UK. He also examined the ethical, legal and social context of academic library management with particular reference to the general treatment of personal information through data protection. He was drawing on the results of a British Library Research and Innovation Centre-funded impact survey of university libraries undertaken in 1995.

The survey took the form of a questionnaire administered by mail to university library managers. He examined in detail current data protection policy practices and levels of awareness. He found that the management of data protection in university libraries is satisfactory, and also there is a real need for raising awareness and enhancing knowledge through information dissemination, publicity, training, discussion and exchange of experience throughout the profession.

In line with the data protection issues in the digital environment, Warren (2002) has contributed an effort in this research field. He investigated and analyzed the extent to which individual privacy is being protected by recent legislation in the UK and the legal challenges facing public organizations. The research comprised three methods: questionnaire survey, expert interviews and case studies. The questionnaire was divided into four parts; compliance and staffing issues, employee records, monitoring of employees, and considered awareness and opinion of the DPA 1998 and the HRA 1998 in particular. In the interview, three issues were brought up; the law, government, and politics.

The last part in the case study, the criteria of compliance asked about were staff awareness and training, raising public awareness, the status of the data protection function in the organization, data protection policy, monitoring of compliance and subject access request. Yet, in the meeting with two local authority librarians, both of them emphasized staff training and the issues surrounding data protection due to the digital environment. Libraries made clear to their members that their personal data would only be used for membership purposes. The researcher mentioned the professional guidance that led the American Library Association (ALA) to publish a policy on the confidentiality of library users' personal data (ALA, 1991) and of library records (ALA, 1986). He stressed that the role of employer and employee bodies is fundamental to building a bridge to the law. Policy making is part of the roles of professional bodies in ensuring the data protection system is effective.

Library services also play an important part in maintaining user privacy such as digital reference services. Neuhaus (2003) viewed that there are six types of digital reference records derived from digital reference services. They are chat reference, e-mail, web forms, librarians and computer researchers with automated reference tools, Frequently Asked Questions (FAQs) and transaction logs. He suggested the digital reference policy must be a part of the library policy because it is a good mechanism for safeguarding user privacy. He stated that the good privacy policies can address ethical issues regarding user confidentiality which are not covered by statutes.

He also emphasized the criteria of good policy which must consist of; an explanation of what information is collected, who has access to library records, addressing the use of encryption, addressing the use of cookies, library users have the right to view, correct, or remove their own records, records may be used to conduct ordinary library business and to compile statistical reports, records may be evaluated to assess internal library processes, authorized individuals may utilize records for research and publication, no personally identifiable information will be publicly released, the library will not give, share, sell, or transfer any personal information to a third party and lastly, library records will be released to law enforcement agencies bearing a court order or subpoena according to state law. He suggested two actions that can be taken by librarians. Firstly, they can work with state officials to make sure that digital reference and other computerized library records are protected by state confidentiality laws. Another action is to lobby federal government representatives on bills that will affect libraries and library privacy issues.

On the other hand, in the year 2003, a survey was conducted in the US by the Association of Research Libraries (ARL) pertaining to library patron privacy. Fifty-eight of the 124 ARL member libraries (47%) responded to this survey. The survey method employed in this study was the questionnaire.

The survey was divided into three major areas: general statements on the privacy of patron data, a review of the treatment of specific patron transaction data records, and privacy policy development. The survey covered the treatment of specific types of patron data records; circulation: record of checked out items, billing records, database search logs, archives/special collections, Document Delivery/Interlibrary Loan, remote access proxy server logs, web server log files and caching/statistical/filtering proxy server log files, chat logs for electronic reference, media reservation form, database personalization features, "My Library" portal systems, catches on microcomputers, hardware repair/disposal, and disposal of paper, magnetic tape, or other media containing patron records.

The survey allowed the respondents to list other types of patron-specific data stored by their institution. Respondents listed policies and practices for sign-up sheets, guest logins, renewal logs, e-mail reference and e-journal use. The findings of the survey showed that the absence of policies or public statements for records, or reliance on general statements. It is important to have guidelines for various types of records. The policies, procedures, and public statements may be so general and have little use to understanding the disposition of specific types of records. Besides that, the lack of awareness of what happens to records held on back-up media when the main location of records is eliminated.

Bernstein (2007) explained her experience when she need to encounter a hard time when policeman came to her library knocking the door in search of information that's contained in library's customer records. Undoubtedly the situation created havoc in the library since all staff didn't know how to handle it. Do we as a professional has a right to disclose customer's information in this case? Thus a clear-cut policy and training to the staff should be developed upon this matter. She suggested that library directors need to educate themselves on the laws protecting the confidentiality of library customers. Next, every staff should aware about the policy and procedures to follow in case outsider request for confidential information from library records. Library members or public need to be educated about their right to privacy related to library records. The police in the other hand must understand the library law regarding privacy, and lastly the municipal or institutional officials need to be explained as well in order to give them a clear picture on how library handle any related issue that might arise.

Thompson (2006) explaining the privacy issue from different view. Normally, a hacker will hack the computer system to gain access to unauthorized information. However other hacker is able to gain access to unauthorized information even without getting into the system technically. This can be done through social engineering. He identified that information in library records also could be stolen via social engineering; the use of non-technical means to gain unauthorized access to information or computer systems. This method is widely identified as major security threat to computer industry, but little has been address in library field. The social engineer (also known as social hacker) commonly uses a simple method to gain information such as via telephone or email. Then the social engineer uses trickery, persuasion, impersonation, emotional manipulation and abuse of trust to gain information through human interface.

Another study explored the importance of Information Security to be included into LIS curricula. Based on the survey done, out of 56 ALA-accredited LIS programs,

only 4 schools had specialized courses in privacy or security. It shows that information security is not being widely addressed in LIS education. However, it was a minor study where the word "security" and "privacy" were investigated through course listing only, without going deeper into the course syllabus. A further study should be done to study the explicit mentions of "security", "privacy" or "information security" in the syllabus as well as in the research interests of faculty in LIS programs. Survey to faculty members or students, or other more in-depth research may be employed as appropriate.

Davies (1997) in his paper examined the ethical, legal and social context of academic library management upon the treatment of personal information through data protection. New information technology offers new way of exchanging personal data, thus increasing the opportunity of violating individual data privacy. The future of data protection is bound to the development IT, in a way more people using IT, together with the development the system itself, thus the mechanism for data protection also increase. Legally, library manager referring to Data Protection Act 1984 and the European Union Directive 1995, as a basis in implementing data protection. However, there is a need for greater awareness and knowledge among academic library management regarding data protection.

Beaumont-Gay, Eustice and Reiher (2007) proposed new data protection strategies in order to face the increasing number of confidential data leaking. They suggested *Data Tethers*, a new paradigm which uses policies based on environmental factors to determine when sensitive data may be stored on a machine and when it must be encrypted or removed from a machine entirely. They gave examples of how important data could be stolen in simple ways; like laptop theft where someone uses the laptop at work, copying sensitive data onto it. Then he goes for break where someone else comes over to steal the data. Consider another scenario when a worker copies some important files to a USB flash drive so he can work at home. If he later loses the flash drive, so he has compromising the sensitive data. A crucial important component of *Data Tethers* is the system that gathers environmental information. They consider particular implementations in making it difficult for an attacker to wrongly convince the system either that it is in a secure environment (allowing access to data) or that it is in a insecure environment (causing a denial of service). The existing data security protection systems, such as traditional access-control systems and full-disk encryption, are insufficient in many real-world cases.

Wong (2007) produced paper with the aim to review the criterion of 'sensitive data' under Article 8 of the Data Protection Directive 95/46/EC (DPD) in the online environment. Article 8 explains sensitive data as 'personal data revealing racial origin,

political opinions or religious or philosophical beliefs, trade union membership, and the processing of data concerning health or sex life'. There is a question whether any image/photograph of the data subject uploaded on the internet falls within Art. 8 of the DPD because it reveals some of the characteristics that may be regarded as sensitive data. The paper calls for a change in how sensitive data is assessed. It considers the purpose-based and contextualized approach to sensitive personal data in the online environment.

Samuelson (1995) bring the issue of copyright and digital library in the sense that it is difficult to deal with copyright issue when it comes to online environment as compare to the conventional library due to the inherent nature of digital data. Most of the time, a single digital copy of library material can be accessible to multiple individuals in an almost simultaneous manner owing to the advances of technology. The author explains the historical perspective of copyright where there was no copyright law before the invention of the printing press. Copying process occurred in traditional method when someone makes handwritten copies of the text or manuscript. Access to the manuscript also is very limited depending to the owner's permission. In the early days after the invention of printing machine, like in England the copyright license only been given to a very small number of printing firm. While the author only entitle for honoraria or compensation for the printing of the book. Over time, opposition arose to this arrangement. In 1710, the English Parliament passed the first copyright statute, known as Statute of Anne. It provides new system to the copyright issue in many ways; such as it granted rights to authors-not printers- to control the printing of their works and sue for infringement. While the grant to authors was designed to achieve a specific economic purpose, that is to encourage "learned men to compose and write useful books". Nowadays the copyright has been extended to a broader range of creative works, while the author have right to control reproduction of their work in copies, not just the printing of books. However to ensure that enforcement of copyright will not unduly impede public access to knowledge, there have emerged some countervailing limitations on the scope of copyright, such as the fair use doctrine. A core principle of today's copyright laws around the world is that they still focus on controlling the manufacture and sale of physical artifacts- not on the controlling all uses of the intangible contents embodied in them. The nature of library services in digital world are different in the sense digital library collection can be borrowed without infringing copyright, and the library is willing to make its digital copy available to others through inter library loan. Moreover, library may provide downloading facilities to the

digital collection. All these will obviate the need for individual purchases of the text from the author or publisher of the work.

In short, the literature review has revealed that only a small number of research studies have been done in this area of study. Almost all of them were conducted in the Western countries especially, the United Kingdom and the USA. Meanwhile, research in this area has not yet been carried out in Malaysia. Therefore, this study attempts to fill the gap.

## **METHODOLOGY**

### ***Research design***

The study was conducted in two public academic libraries i.e. the International Islamic University Malaysia (IIUM) Library and Universiti Putra Malaysia (UPM) Library. The population comprised library personnel and library users in those libraries. The respondents covered library personnel and users such as students, academic and non-academic staff.

The total number of the sample was 170 respondents which comprised 85 respondents from each academic library. Out of this, 160 respondents were surveyed through questionnaires, and 10 respondents (library personnel) were interviewed. The library personnel comprised of 8 librarians and 2 supporting staff, they were from the Department of Technical Application Services and Collection Development Division in the IIUM library, and the System and Information Technology Division and Circulation and Promotion Division in the UPM library.

In this study, questionnaires were distributed personally to the library users and interviews were conducted on library personnel. The questionnaires distributed for each library (IIUM/UPM) were 80 sets, which were then divided equally for each level and the sample was selected randomly. This is due to the availability and convenience of the respondents in answering the questions as well as the cost of conducting the survey. This study is limited to 170 respondents (10 library personnel, 160 library users) due only to the costs and time frame in completing the research. The interviewed respondents included 8 top library officer and 2 supporting staff.

### ***Data analysis strategy***

The data collected were analyzed using statistical analysis software –the Statistical Package for Social Sciences (SPSS). The descriptive analysis was employed to explain the results of the questionnaires. The results were presented using percentages and numbers and also presented in table form. As for the



qualitative study, the interview results were analyzed by working with the gathered data, organizing it, breaking it into measurable units, discovering what is important and coming up with the similar and specific terms to be used and presented.

## FINDINGS

### ***Library Personnel and Users' Awareness Concerning Privacy and Data Protection***

The results of the study show that library personnel were alert pertaining to the issues of privacy and data protection surrounding them because they realized that these issues were still under development at their parent organizations (university) as well as in their libraries. According to them, their libraries were practicing data privacy such as providing passwords to access the Internet. This has been discussed mostly during consultation with technical advisors and in management and staff meetings. Meanwhile, library users responded that they were concerned about the threats to their personal privacy whether from official bodies or commercial organizations.

The study shows that library users have greater awareness concerning privacy and data protection and about the threats to their personal privacy (see Table 1). Simultaneously, the libraries were practicing the safeguarding of users' data privacy. It shows that library personnel and users need each other to maintain the value of the organization (library) and moreover, to keep the trust of library users.

Table 1: Library Users' Concerns about Threats to Personal Privacy

Concerns	No. of Respondents	Percentage %
Yes	87	80.6
No	15	13.9
Not sure	6	5.6

However, the results of the study contrast with Sturges et al. (2003) who found that users had low levels of anxiety about privacy when using libraries because they expected that libraries would not pass on personal data to other bodies. The low level of concern can be seen as a basic statement of trust in the library as a respecter of privacy.

As Chmara (2001) stated the disclosing of the information used by the users will inhibit them from using the library. Users will be reluctant to borrow materials on controversial subjects or research sensitive topics on the Internet if they believe that their research and reading choices can be divulged by library personnel to third parties.

Table 2 showed the library users' perceptions of library passing on user information to official or commercial organizations.

Table 2: Library Users' Perceptions of Library Passing On User Information to Official Organizations and Commercial Organizations

Perceptions	Official Organizations		Commercial Organizations	
	N	%	N	%
Agree strongly	12	11.1	13	12
Agree somewhat	21	19.4	18	16.7
Neither agree/disagree	16	14.8	10	9.3
Disagree somewhat	32	29.6	23	21.3
Disagree strongly	25	25	44	40.7

On the other hand, library users refused to disclose some of their personal information in online activities such as newspaper sites, newsletters, alert services, downloads and software updates. However, there was some information that they were willing to disclose especially their hobbies and interests, e-mail address and the shops regularly visited. The respondents did not mind sharing this with others in order to get faster and latest information.

Table 3: The Level of Comfortability of Providing Personal Information through the Internet

Personal Information	Most Frequent Answer	No. Of Respondents	Percentage %
Full Name	Rarely	32	29.6
Postal Address	Rarely	32	29.6
E-mail Address	Usually	37	34.3
Phone No.	Never	48	44.4
Comp. H/ware & S/ware	Rarely	37	34.3
Age	Rarely	39	36.1
Medical History	Never	32	29.6
Shop Visited Regularly	Usually	30	27.8
Interests & Hobbies	Usually	42	38.9
Annual Income	Never /Not applicable	31	28.7
Credit Card Details	Not applicable	47	43.5

Meanwhile, according to Hurriyyah (2003), some of the Malaysian netizens'<sup>1</sup> attitudes when they were asked to supply personal information when participating in any e-commerce activities were that they refused to disclose their personal information or gave falsified information about themselves because of non-disclosure about the purpose of data collection and how the data was going to be used. Furthermore, the information asked is particularly sensitive and they are concerned that the information will be intercepted / stolen.

This study and a previous study by Hurriyyah (2003) have slight differences. This study shows the willingness of Internet users to share their personal information with others, in contrast Hurriyyah's finding indicated users were not willing to share their personal information with others.

***Library personnel and users' perceptions of library policies and practices concerning privacy and data protection.***

In terms of the library policies and practices, most of the library personnel interviewed mentioned that the library observed privacy and data protection even though there was no official written statement or policy concerning it. Table 4 shows the library personnel's experiences in answering enquiries about third parties' personal data which they were not entertained at all.

Table 4: Other Users Asking Third Party Personal Data

Asking For Third Party Personal Data	No. Of Respondents	Percentage %
Not allow	10	100
Other	-	-

It is noted that Malaysia does not yet implement any personal data protection bills regarding these matters to support the existing data protection laws in the Communication and Multimedia Act (CMA) 1998.

Both libraries surveyed (IIUM and UPM) emphasized the facilities and services provided to the users. The most frequently used were borrowing books, reference and photocopying (see Table 5). Libraries generate electronic files to help them to input and access the library users' records. All particulars about users are keyed into the system in the library. The library personnel knew that they should not sell or pass on the personal information to a third party which is strongly opposed by library users. Therefore, as record keepers, they must maintain the records in the right order and

<sup>1</sup> Netizen is a user of the Internet, especially a habitual or keen one

ensure that they are not be accessed by a third party. The results showed that those libraries were not ready yet to implement the privacy and data protection policies in the library.

Table 5: Use of Library Services

Library Services	No. Of Respondents	Percentage %
Borrowing books	93	86.1
Reference	90	83.3
Newspapers	77	71.3
Internet access	77	71.3
E-mail	23	21.3
Interlibrary loans (ILL)	11	10.2
E-journal	44	40.7
Print journals	24	22.2
Photocopying	79	73.1

Although users were concerned about threats to their personal privacy, they did allow the library personnel to monitor the use of electronic facilities in the library to prevent their misuse and to help the library to improve their services and facilities as shown in Table 6.

Table 6: Library Users' Perceptions of Libraries Monitoring Use of Electronic Services

Perceptions	No. Of Respondents	Percentage %
Agree strongly	35	32.4
Agree somewhat	32	29.6
Neither agree/disagree	20	18.5
Disagree somewhat	12	11.1
Disagree strongly	9	8.3

This is in accordance with Estabrook (1996), who mentioned that librarians should retain and use patron data collected, including circulation records, in order to develop and improve library services. The development of automated systems in the library world increasingly allows the librarians to do so.

On the other hand, the answers to questions 15 & 16 in the interview session have slight differences. Table 7 shows the result of question 15 asked about the library personnel's perceptions of the degree of importance of library services/facilities which

almost of the library personnel (80%) stressed on safe guarding users details as the most important library services.

Table 7: Perceptions of Library Personnel the Degree of Importance on Library Services/Facilities

Items	Very Important		Important		Less Important		Unimportant	
	N	%	N	%	N	%	N	%
Accurate catalog	7	70	3	30	-	-	-	-
Digital resources	6	60	4	40	-	-	-	-
Secure environment	6	60	3	30	1	10	-	-
Safeguarding users' details	8	80	2	20	-	-	-	-
Current awareness	6	60	4	40	-	-	-	-

While, Table 8 indicates the results of question 16 on the degree of important factors that matter to library personnel which more than half of the library personnel agreed that the most important factors that matter to them was service to clientele (70%).

Table 8: The Degree of Important Factors That Matter To Library Personnel

Factors	Very Important		Important		Less Important	
	N	%	N	%	N	%
Copyright	2	20	2	20	2	20
Intellectual freedom	-	-	1	10	1	10
Information literacy	1	10	4	40	2	20
Confidentiality/privacy	-	-	3	30	4	40
Service to clientele	7	70	2	20	-	-
Others	-	-	-	-	1	10

The respondents believed that their library would place safeguarding users' details as the most important, but instead of that, service to clientele is very important

for themselves. This shows that, for the first question, they tried to please the researcher. Whilst, the response for the second question indicated that library personnel were confused and unsure about performing their duties and responsibilities.

## **CONCLUSIONS**

In short, digital online information can be accessed from any places at anytime as long as the users have the means to do it. The new technologies also have some drawbacks which the users should be aware of and be able to overcome them. The drawback in this case is the infringement of users' privacy and data protection arising from the use and disclose of personal digital information to the third parties. This study also found that one Malaysian public academic library (UPM) was developing a policy on privacy and data protection.

The end-users were very careful about disclosing their personal information to the third parties. This fact acts as a reminder to library personnel that any information or data concerning their library patrons should be treated as confidential and not disclosed to any unauthorized personnel. It is therefore very important that libraries have written policies regarding privacy and data protection in order to protect the library users' privacy and rights. The findings of this study can be used as a guideline in the planning and development of privacy and data protection policies in the academic libraries in Malaysia.

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