ELECTRONIC SECURITY SYSTEM: A PANACEA TO SECURITY RISKS IN ACADEMIC LIBRARIES IN NIGERIA.

By

[1]Salisu Dahiru, Ali Garba[2] and Hamza Mohammed[3]

[1]Department of Library and Information Science, Faculty of Education, Ahmadu Bello University Zaria.Email: salisudahiru4@gmail.com Phone: +2348067041558.

[2]Kashim Ibrahim Library, Ahmadu Bello University Zaria. Email: karayeunque@gmail.com +2348153837977

[3]Library and Information Services Division, Institute of Education Ahmadu Bello University, Zaria.Email:hazayakawada@yahoo.com +2348039684396

Abstract

For effective teaching and learning to take place in the academic institutions of Nigeria particularly in this digital era, there should be a functional library with adequate security measures put in place to secure and protect library's resources, system and services against the consequences of risks. The paper examined the concept of security risks and security risks management. It also highlighted the applications of electronic security systems such as electronic theft detection system, electronic access control system and explosive detection system in security risk management in academic libraries in Nigeria. The paper identified the advantages of each security system to the academic libraries in Nigeria. Barriers to the use of electronic security system in academic libraries such as erratic power supply, inadequate expert to manage the systems were also highlighted. Recommendations were also made based on the barriers identified such as provision of alternative sources of electric power supply such as solar panels, stand-by generators, inverters, accumulators, wind electricity, etc; space provision in the architectural design of the libraries; training and retraining of library staff/security managers on how to manage the systems among others.

.Key words: **Electronic Security System, Security Risks, Academic libraries, Nigeria.**

Introduction

Automation of 21st century libraries is very crucial if not necessary. This involves the use of computer to control process and replace human operators (Aswal, 2006).Information technology systems are used in a variety of ways including data processing, storage, and transmission. The protection of these information systems from different security attacks is a constant challenge that many organizations face (Karyda, et al., 2005).It is believed that security of library materials and users is equally important especially in this period of insurgency which is causing a lot of security threats to the Nigerian academic libraries

resources, system and services. Therefore, the adoption of electronic security systems in Nigerian academic Libraries such as surveillance cameras/Close Circuit Television (CCTV), Radio Frequency Identification Device (RFID), Computer Ternography x-ray (CTX), biometric scanner, etc. can facilitate the work of Librarians and security personnel and make it more effective and efficient.

Electronic security systems are devices that are used with the aid of electrical apparatus to secure library materials. They help libraries to control, minimize or avoid library material theft and unethical losses (Rajendran and Rathinasabapathy, 2007). Examples of electronic security systems installed in libraries are electronic surveillance camera (CCTV), 3M electronic security systems (electronic security gates), Radio Frequency Identification (RFID) system, perimeter alarm system, etc.According to Jadhav and Kulkarni (2014), installation of electronic security system in libraries not only enhances security of the library material but also encourages the library staff for more vigilance.

Security Risks in Libraries

Security risks in libraries are all crimes committed by the library users/staff, which can deprive other library users from achieving their information needs can also lead to the destruction of library buildings or equipment and in some cases lead to the loss of properties or lives of library patrons/staff. Huska (2008) divided the security risks in libraries into three(3): the crime against library collections such as theft of books and material vandalism; crime against physical structures of the libraries such as vandalism of building, vandalism of equipment; and crime against people inside the library such as threats, violence against both staff and patrons.

Bell (2012) identified every day theft, violence, sexual harassment and assault as some of the security risks in many libraries of the world.

Security Risks Management in Academic Libraries

Academic Libraries use professional effort or security risk management to combat security risk threatening them. Umar (2014) stated that security risk management in universities libraries involves planning, coordinating and directing the risk control and risk financial activities in a library. Valsamakis, et al. (2005) described risk management as managerial function aim at protecting an organization, its people, assets and profit against the physical and financial consequences of risk. Ajegbomogun (2004) described collection security management as a process designed to protect library collections against unauthorized removal or loss.

Different majors have been put in place by different libraries to manage security risks. Survey conducted by Abioye and Adeowu (2014) revealed that academic libraries in Osun state, Nigeria adopted checking in and out of libraries users and personnel, deploying security personnel at the main entrance of the libraries as commonest majors for combating security risks. Umar (2014) suggested the concerted effort among all cadres of library staff to effectively manage risks in university libraries

Adoption of Electronic Security Systems for Security Risks Management in Nigerian Academic Libraries

It is obvious that all the above security measures taken by academic libraries fail to provide a tight security require in the libraries. To provide more effective and efficient security measures in academic libraries, many scholars' such as Akinfolarin, (1992), Covington (1996), Lorenzen (1997), and Chadwick (1998), advocated the application of Electronic security system in libraries.Contemporary libraries employ different technologies

to ensure the security and safety of their resources, system and services. Shahid (2005) identified Radio Frequency Identification Device (RFID) as one of the electronic security device that can be used by the 21st century libraries to safeguard their print resource such as books, serials, manuscripts etc. Maidabino (2010) identified electronic security system such as alarm and surveillance cameras as devices use to manage security risk in Malaysia Academic libraries. Missouri State Policy Library (2014) disclosed that Missouri State Policy Library employed telephone for managing risk related to bomb threats in the library. In a digital library, electronic security systems can be categorized into three (3): Electronic Detection System, Electronic Access Control System, and Explosive Detection System.

Electronic Theft Detection System

These are the systems use in libraries to prevent theft of print resources. The system can also be used to prevent mutilation of library collections. Among the family of electronic theft detection system are Radio Frequency Identification Device (RFID), Electromagnetic Gate, sensitizer/desensitizer, Close Circuit Television (CCTV), etc.

Radio Frequency Identification Device (RFID) and Security Risks Management in Libraries

(RFID) technology as according to Article Based (2009) is made up of a circuit that resonance peak anywhere from1.75 MHZ to 9.5 MHZ. The technology helps libraries to reduce valuable time of staff in scanning barcode while charging and discharging items (Shahid, 2005). RFID is also made up of tags, which is electronically programmed with unique information; readers or sensors to query the tags; antenna, which provides radio signal to activate the tag and write data on it; and the server, which serves as the communication gateway among the various components (Boss, 2004). RFID system as according to Shahid (2005) is very effective and easier way of

detecting book theft in libraries. The research conducted by Shahid revealed that RFID can provide up to 100% detection of books theft.

Electromagnetic Gate and Security Risks Management in Libraries

This is a gate with sensors that detects the magnetic strip inserted in books e.g. tag of RFID, to prevent unauthorized exist of library materials. According to Jadhav and Kulkarni (2014) electromagnetic gate is installed at the entrance of a library as an electromagnetic – based surveillance system for checking pilferage of books.

Sensitizer/De-Sensitizer and Security Risks Management in Libraries

In a fully automated library, magnetic strips are inserted in books, journals or magazines. These are active enough to communicate with the sensors in an electromagnetic gate, to prevent unauthorized exist of the library material. During the process of charging and discharging of library materials, circulation section of the library de-sensitizes each book to be issued out, to enable the library user passes through the electromagnetic gate undetected. On return, each book is re-sensitized to make the magnetic strips more active (Boss, 2003).

Close Circuit Television (CCTV) and Security Risks Management in Libraries

This is the technology use in libraries to view and monitor all activities of library patrons and staff, while in the library premises. This technology as according to Dean (2004) is made up of cameras, viewing monitors, signal transmission line and recording devices. The system records all events taking place in a library (in motion) i.e provides a point of reference when a criminal claims to be innocent. CCTV system detects not only security risks related to theft or mutilation of print resources, but also monitors other malpractices in the library e.g noise making, use of mobile phone and eating/drinking.

Electronic Access Control Systems

Access to library building, collections or equipment need to be controlled, so as to minimize the number of unauthorized people getting to the library and accessing both the electronic and non-electronic resources of the library. Electronic access control system, as according to Dean (2004) enhances safety and protects valuable library assets. Electronic access control involves the use of hardware and software such as plastic access card, biometric scanner, username/password etc.

Plastic Access Card (PAC) and Security Risks Management in Libraries

Plastic Access Card (PAC) made with plastic material issue to library staff and users to enable them get access to restricted area of the library. Doors in such restricted areas of the library are programmed with software that allows the automatic unlocking of doors. When plastic card is slotted in slot of the doors, the doors are capable of reading the card and recording the time, date and location of authorized and unauthorized access attempt (Dean, 2014). Hence, access card serves as temporary key for both the library clientele and employees. PAC helps in preservation of library equipments and collections by limiting the access to only authorize people and also monitors staff attendance and punctuality.

Biometric Scanner and Security Risks Management in Libraries

Another technology use to control access to library collections, building or equipment is biometric scanner. This technology according to MLS (2014) is used not only is place of traditional plastic identification card (I.D Card) and password, but also to eradicate the problem associated with card sharing and lost.

Biometric technology involves automated recognition of a person base on his/her physiological or behavioral characteristic e.g. finger print. Finger print is among the best tool for

individual identification, as it remains constant from once birth to death. During registration exercise of library users or staff, their finger prints or other physiological characteristics are scanned and saved. Whenever the registered member wants to get access to library electronic resources, building or equipment, his/her finger print is scanned to determine whether the pattern of ridges and valleys matches with those of pre-scanned image. This determines whether the library user or staff can get access to material or not (Heritage, 2014). Advantages of Biometric Scanner to libraries security can not be overemphasize. MLS (2014) stated that with biometric scanner, the issues of forgetting card, password compromise and cards misplacement are no longer problem to libraries.

Password/Username and Security Risks in Libraries

This is another electronic access control technology use to get access to electronic resource in many libraries to ensure that only authorized library users get access to electronic resources of the library. According to Free Dictionary (2003) password is a secret word, phrase or sequence of characters that must be presented in order to gain access or admittance. Password/username can be change by the library or library clientele when need arises, to ensure the security of electronic resources and that of user account.

Explosive Detection Device

Nowadays, some libraries (e.g. academic libraries in Northern Nigeria) are threaten by bomb blast and gun shoot attacks. In such libraries therefore, security, measures should not be restricted to library collections, building or equipment, but should include the security of lives of library users and employees.

Explosives such as bomb can be detected using different methods ranging from the use of trained dogs, sniffers spectrometric technique to Computer Ternography X-ray (CTX). Hoyle

(2003) described CTX as the best method of detecting explosive threats, as it is made up of X-ray analyses by sophisticated computer program. Magherb, et al. (2010) disclosed that Computer Ternography X-ray is an explosive detective device, a family of X-ray devices that uses CAT scan and sophisticated image processing software. These automatically screen check baggage for explosives. The survey conducted by Magherb, et al. (2010) revealed that CTX can detect over 90% of explosive that can be kept in bags of library users, without any contact with the baggage.

Barriers to the use of Electronic Security System in AcademicLibraries in Nigeria

Despite the huge benefits of using electronic security systems for security risks management in this digital era, there are many barriers hindering their adoption in most of Nigerian academic libraries. Abifarin (1997) however cautions that some technologies that have worked effectively in some countries fail to work in others, because of such factors as unreliable public electricity supply, poor maintenance regimes and sabotage. In short, the following are the major barriers to the adoption of electronic security systems in Nigerian academic libraries:

1. Electronic security systems are very expensive for many libraries due to its maintenance cost.
2. Lack of space provision for installation of security system e.g. CCTV, in the architectural design of library buildings.
3. Inadequate experts to manage the system
4. The use of some security devices such as surveillance came is against the personal privacy.

5. Lack of steady power supply: Electronic security systems depend entirely upon the power supply, but electricity supply in developing countries like Nigeria is not reliable.

Recommendations

Based on the barriers identified above, the following recommendations are made

1. Government and academic institutions (where libraries are located) should allocate more fund to libraries to enable them afford and maintain electronic security system.
2. Libraries should employ the services of competent engineers or send their personnel for specialize training on how to manage the electronic system.
3. Spaces should be provided in the architectural design of any new library building for the installation of security system e.g. CCTV.
4. Libraries should put all measures in place to balance the security benefit of using the technology and privacy risk of an individual clientele.
5. Alternative sources ofelectric power supply such as solar panels, stand-by generators, inverters, accumulators, wind elecricity etc. should be provided by the libraries to provided uninterrupted power supply.

Conclusion

For long, physical security measures have been taken by academic libraries in Nigeria. Though, these measures are cheaper then the electronic security measures, they do not provide a tight and effective security require to safeguarding the library collections, equipment and patrons against the consequences of risk. In this digital age therefore, the adoption of electronic security systems in libraries such as theft detection system electronic access control system and explosive detection system would make the security services more efficient and more reliable. The systems could also reduce the burden on the security personnel and encourage them to be more vigilant.

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