

## Library Security through Networking of CCTV

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### Abstract

In the new era digital technological revaluation is the challenge for the Library Information science not only in India but also abroad. The security of materials and information in a library is quite essential. This paper discusses the use of CCTV cameras for surveillance in libraries to safe guard its possession of books and information. This paper presents the CCTV cameras, CCTV Systems, Evolution and Types of CCTV, Library Security, Advantages and Disadvantages.

**Keywords:** CCTV Camera, library security.

### Introduction

Library is a 'temple of learning' which plays a tremendous role in the development of society. But it is a universal fact that libraries are not safe and secure. Akinfolarin (1992) observed that one of the serious issues that have bothered librarians from the earliest times to the present is how to ensure the security of library materials, especially against their theft and mutilation.

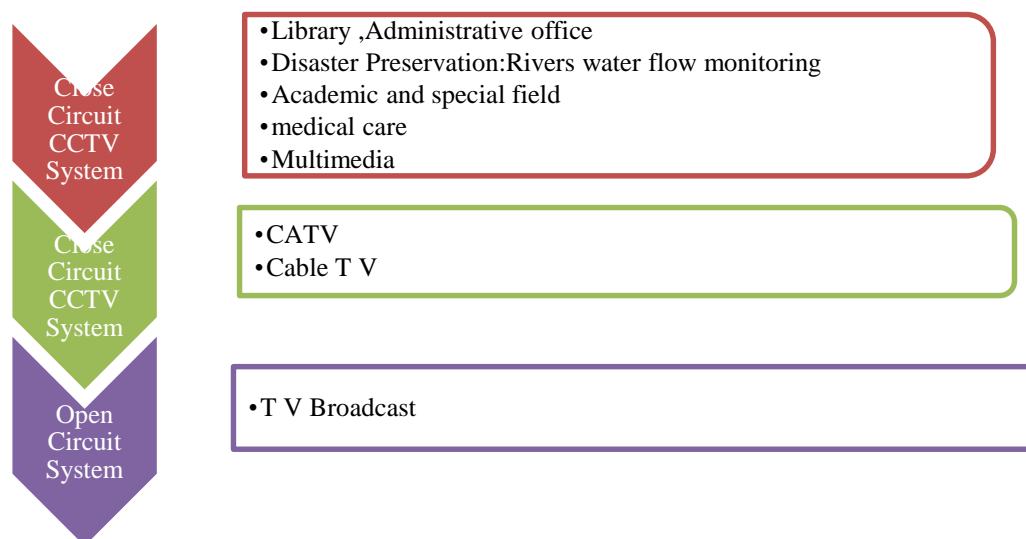
In the explosion of publication age, most of the libraries especially academic libraries follow open access system which allows its users directly to stake to ensure optimum utilization of the knowledge resources available in the library. Academic libraries are the "heart" of the learning community, providing a place for students and faculty to do their research and advance their knowledge (Simmonds, 2001), so that, one major issue to academic libraries has been need to secure the valuable resources collected over time. This is an electronic age and it has more impact on library management. Electronic security systems are devices that are used with the aid of electrical and electronic apparatus to secure library materials. They help libraries to control, minimize or avoid library material theft and unethical losses (Rajendran & 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.

### What is CCTV?

Closed Circuit Television (CCTV) uses a video camera to transmit a signal to a specific or limited set of monitors. It is used for surveillance in areas like - Banks, Airports, Railway stations and City centers, etc. where strict security is of utmost importance. Traditionally VCR, CCTV pictures are sent via CCTV cameras to a closed area like a CCTV monitor. In the earlier days, the CCTV cameras used in public places were crude and have low definition black & white systems. They lacked the ability to zoom. The modern CCTV cameras use small high-definition color cameras that can focus to record minute details by linking the control of the cameras to a computer and the objects can be tracked semi-automatically. Modern digital CCTV systems can be remotely operated through a Personal Computer or a mobile phone.

### CCTV Systems

In the last few years, Closed Circuit Televisions (CCTV) has undergone tremendous growth with the development of new technologies, products and concepts. The complex analogue CCTV has become even harder to understand with the introduction of digital compression techniques and networking. Television systems are now one of the most indispensable information and communication means in our daily life. They can be broadly classified as shown in Figure 1, and are used in a wide range of applications, including standard television broadcasts.



**Figure 1: CCTV Systems**

An open-circuit system refers to a system that is targeted at an indefinite number of people, as in television broadcasts. Closed-circuit systems, on the other hand, are designed to provide video to specified viewers. One closed-circuit system that is primarily designed for surveillance purposes is generally called a closed-circuit television or CCTV system. CCTV is used in a wide variety of applications which include security, disaster prevention, energy and manpower saving, sales promotion and information services, production management, industrial measurement, medical care, education and military fields.



**Figure 2: CCTV camera**

### Evolution and Types of CCTV

The human beings have used surveillance for centuries, and will also continue with it. Surveillance has been used in many ways in different countries over the years. But it has almost always been used to guard objects of value or to prevent certain things from happening. The first CCTV system was used in 1942 at test stand VII in Peenemunde, for the purpose of viewing the launching of V2-Rockets. As a result, CCTVs came into use in Rocket launching sites to film and records the scenes of rocket launching. At present, CCTV has become an indispensable accessory in organizational management in modern age. It provides digital or video recording of crime, violence, theft, antisocial behavior, etc. There are three types of cameras: (1) Dome camera (Fig. 2) - These are usually placed inside a dark dome and cannot be seen from outside. (2) Wall cameras – These are big visible units having many options like, waterproof, bulletproof, infrared light or zoom. (3) Hidden cameras- These are small and hidden inside other objects and are not easily detectable.

### Importance of CCTV

The use of CCTV is necessary in the following activities:

- In chemical process industries, where the processes take place under dangerous conditions, CCTV should be installed to supervise and control accidents and disasters.
- Coalmines are one of the important places where CCTV is essential.
- The use of CCTV in places like Banks, Airports, Railway stations, city centers and other busy locations will not only provide security but also help in planning the traffic control during rush periods. The use of biometric systems is in progress for locking and unlocking of cars, office rooms and residences. Along with this system, if CCTV can be installed in car parking areas which can reduce car thefts to a great extent.
- In educational institutions, instead of inspecting the various departments and sections periodically, video surveillance and remote monitoring can be used for an effective management.
- The use of CCTV in warehouses, constructionists, gas stations, hospitals, shopping complexes, libraries, museums, archives, supermarkets, departmental stores and jewelry shops are quite successful.
- If railway stations and busy town centers of all the cities use CCTV, the crime can be reduced and traffic control will become easy.
- CCTV can be used in academic libraries to monitor the student activities and their behavior in the library. The common mischievous activities in the libraries like tearing of the pages from the books, hiding the books, sitting in corners and gossiping and book theft can be reduced to a great extent.

### **Library Security**

Security systems are integrated systems made up of different types of equipment and devices, the combined operation of which helps protect human lives, property, the environment and information. Crime prevention literally represents preventing violation of the law and public interests and disturbances to social order through acts of crime, which should be punished by law. Crime prevention facilities and equipment are classified as long-distance picture transmission systems and surveillance camera systems are encompassed within CCTV systems designed for crime prevention. The aims of the installation of crime prevention facilities are to let criminals know the risks of crime and function as a deterrent of crime or keep constant watch over potential criminal acts. When criminal act is detected, the facility's sensors or Emergency warning switches are operated to soundmanalarm and ideally cause criminals to go elsewhere.

Thereafter, information is sent to related departments or personnel for taking appropriate measures to avoid loss. Library security is a continuous process including several factors, which should follow a logical progression. Maximum traditional libraries have a security team headed by library security officer (LSO) who should meet regularly to discuss and deal with such matters as a security responsibility (Ramamurthy, 2001). The main motto of library security is to provide sufficient level of the security to most of the book collection, which is highly susceptible to theft and mutilation. Theft and mutilation of library materials is not a new problem not only in India but all over the world. Therefore, it is important to provide a safe and secure environment for resources and equipment. In this regard, the CCTV cameras are really a boon for the library staff.

### **Advantages and Disadvantages of Using Security Cameras**

#### **1. Deter Crime**

This is the biggest and the most obvious benefit of installing security cameras. Once they are placed, you will be able to see their effect on people almost immediately. Even if they are placed discreetly, you will start feeling a sense of security, which is priceless.

#### **2. Monitor Scenarios and Activities**

It is extremely easy to work with security camera systems as they can be placed anywhere as long as there is a power source close by. They come in all shapes and sizes; some are tiny enough to be hidden in plants, pictures, photo frames, etc. Depending on your needs you can buy either hidden cameras or mountable ones.

#### **3. Gather Evidence**

Having cameras installed in strategic places comes in handy when you need to monitor actions and words of people or during an event. Modern security cameras are not only equipped with high-quality video capabilities, but audio as well. The clear images coupled with flawless sound makes them more efficient than ever at recording a series of happenings.

#### **4. Arrive at the Right Decisions**

Footage from security cameras can help you make correct and fair decisions when settling disputes, both in domestic as well as professional scenarios. Whether it is dealing with a situation involving disagreements within your family, among your employees, or between a customer and your service staff, your doubts can be laid to rest with the help of your camera.

#### **5. Maintain Records**

Whether it is a crime or a minor tiff, your camera chronicles it, thereby making it easy for you to investigate the actual happenings.

### **Disadvantages**

#### **1. Privacy Is an Issue**

There have been a few instances in the past where security cameras have stirred up controversies, especially in professional setups. There have been cases where employees have objected to being under constant surveillance without their permission and citing the 'invasion of privacy' as the reason. A few have also resorted to taking legal action against their employers in relation to this.

#### **2. It can be a Costly Affair**

While dummy cameras may not be expensive, the real one's costs hundreds, even thousands of dollars depending on the features and the number of cameras and monitoring systems you buy. Getting them installed and their maintenance means added costs. If you're thinking of installing them yourself, lay that idea to rest unless you have good knowledge of wiring systems or you may end up damaging the cameras.

#### **3. They can be Vulnerable**

When we, as users of security cameras, try to keep ourselves updated on the latest in security systems, we should not forget that intruders and criminals are doing the same too. A clever trespasser will probably know all about them and may have figured out a way to go undetected.

#### **4. Can't Stop Theft**

Cameras enable users to record footage for later viewing, and to help nab criminals, and receive justice from the law. They cannot, however, stop a crime when it is in progress. They do not alert neighbors or the police like an alarm system would. This means that you will incur losses even as you run to the court, make insurance claims and reorder stolen inventory, which may no longer make you feel absolutely safe and even cause you to lose faith in them.

### **Conclusion**

Library is the heart of any academic institution as it provides its users with literature and information in the form of books, journals and other electronic media. While providing such facilities, libraries are also facing the problems of document theft and mutilation. To overcome the security problem, library has installed the CCTV cameras for user level security. There are various types of cameras available in the market such as - Coax cable-based CCTV camera, UTP cable-based CCTV cameras, IP based CCTV cameras, etc. The library has selected coax cable-based CCTV and IP based camera system solution and redirected the output to TV tuner card to digitally record video on computer network.

The personal computers of the future might include a fingerprint scanner, where one could place the index finger for the computer to assess the authenticity the user. The computer would analyze the fingerprint to determine whether the user is authorized to access the data or not. At present many libraries are using bar-coding system, for data retrieval but with the increasing technology, we hope that it may not take very long time to go for biometric systems coupled with CCTV for better management of the libraries.

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