



CHAPTER 3

APPLICATION AREA

AND COMPARISON

3.1 Overview

Consider this scenario:

" You are a Managing Director of a company which consists of 100 branches all over the countries. Everyday, your concern is to monitor the businesses in many locations. It is impossible for you to travel from one branch to another branch everyday in order to monitor these businesses or employees. But it is possible to achieve this objective with the aid of the Remote Monitoring System. With just a click of a button, you would be able to watch the report or situation that you want. Remote monitoring system is a powerful tool for organisations to go beyond traditional business, which is only limited to the local market and further achieve the target of globalisation.

The application of Remote Monitoring System is very, very wide. *"Remote Monitoring System allows user to visually "check in" on remote operations to monitor the operational safety and security, track inventory and review customer service and transactions from home, office or anywhere else"* (www.hanlon.com/remote.html). For example, Burger King restaurants in the United



Kingdom are currently implementing the real time remote monitoring system to monitor the business in different branches. Paul Bobo, the manager checks up on his Burger King restaurant from the comfort home computer 30 minutes away in Tallahassee ([The Wall Street Journal-August 30, 2001](#)).

Another example is Aquila, a Canberra Company, an ISO 9001-certified supplier of Safeguards products to the International Atomic Energy Agency (IAEA) and to CEC Euratom (CEC). Currently, this company is using remote monitoring system to reduce the cost of operations and achieve more efficiency. With the assistance of remote monitoring system, the company is able to minimize the following cost: ([www.nn-site.com/about.html](#)).

- ❑ The number of on-site inspections,
- ❑ Worker radiation exposure, and
- ❑ Intrusion to facility operations.

This shows that the advantages and benefits of RMS is increasing and becoming a basic requirement to ensure that businesses operate smoothly.

Chief Insp. Mike Brooks is a member of the Torbay's police force. According to him, remote-monitoring system has helped them to monitor the activity in various places. This has been able to reduce the crime rate by about 30 percent, giving Torbay recognition as one of the safest places in the world. ([http://www.thisisplymouth.co.uk](#)).



3.2 Application area of remote monitoring system

With the increasing power and usage of technology, electronic gadgets have become more affordable. Many organisations have intensified their use of CCTV, especially in their efforts to fight crime.

The CCTV is normally installed in the following areas:

- Control centre – When individual access to the computer server is restricted, meaning only authorised personnel is granted entry to the room. With the presence of CCTV in the room, unauthorised personnel would less likely even attempt forced entry unto the room.
- ATM / Machine Bank - Remote Monitoring system is installed in Banks for security purposes. This helps to keep continuous track records, which is easily retrievable in the event of robbery.
- Shopping centre - Theft is very common in shopping centres. With a proper CCTV system set-up, the management will be able to record all the crime incidents and later trace back the train of the events that led to it. In future, any suspicious activity will be stopped to prevent theft.
- Cash payment area – Some organisation set up the CCTV system in order to monitor employees' behaviour and activities especially where money is concerned; for example cash counters in banks.



- Home - Concerned parents who want to monitor their children and the care workers. (*See figure 3.1*)

- Subway, railway and traffic control – The usage of Remote Video monitoring with the aid of a web browser, allows convenient viewing of information captured by the camera when checking highway traffic congestion.

- Tourism spot visuals / Weather information - The web browser also allows convenient video viewing of the weather and the traffic status. This information captured by the camera helps tourists plan their trips as though as with a visual progress report.

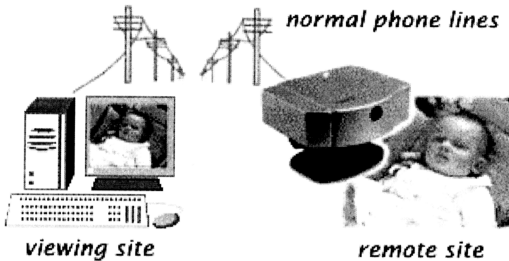


Figure 3.1 CCTV is used at home as a security system

3.3 Advantages of the Remote Monitoring System

No longer are companies looking at video surveillance and monitoring as an expensive, non-revenue-producing venture. In fact with the whole electronics industry becoming more affordable, businesses are now viewing this as a form of investment to further reduce untimely losses. Among its advantages are:

- ❑ Reduce operations cost and save time

Remote monitoring system allows user to monitor their business operation in another places or country. Users can reduce the cost and time of travelling. Burger King in United Kingdom is one of the companies that have already implemented this new business concept.



□ Improve business efficiency

Remote monitoring system allows you to monitor remote business sites at a lower cost. By tracking the inventory movement, you are better able to monitor customer service and identify areas for improvement, all to enhance the business. Tracking actually helps to identify potential risk and problems and act on it beforehand. This is not merely as a means of protection but it helps to raise-your-bottom line as well. This is possible through the consistent monitoring of factory production lines to improve output, avert accidents and identify potential hazards.

□ Reduce the cost of manpower

A complete RMS set is able to replace security guards therefore reducing the number of security guards. To install a CCTV at every floor of a building would mean a reduced the number of the patrolling times. The security guard just needs to monitor the building situation via the CCTV in the security room.



□ Reduce the rate of crime or theft

It is difficult to prevent employee and customer theft. However, a properly setup camera system, would enable us to catch them on the spot and help us to recover what is rightfully ours therefore, help us determine where our money is going. Examples of the surveillance system can be found in supermarkets and banks.

□ Reduce workmen compensation costs

Employees' safety and security is one of the issues that concern most companies, because on the job injuries are one of the most costly elements of business. A properly set-up camera system is able to record unsafe work habits and potential pitfalls. Upon detecting these, the implementation of safety training and strategies will be able to prevent future accidents. Surveillance costs for the system may be claimed immediately from our insurance providers. An example of such surveillance system is commonly found in manufacturing factory.

□ Poor Use of Time on the Job

There are many employees who do not concentrate on work during the working hours. They may be engaged on the phone for a long time or sleep in the office. As the result, they are unable to complete the job on time and stay back and claim over time. This is an invisible cost to the company. Poor time use is as costly as theft. Surveillance systems are



now commonly found in the office or factory to monitor the employees' action and behaviours.

❑ **Armed Robbery and Break-in Costs**

With a video record of the past crime events, the company would be able to assist in the efforts of crime solving therefore recover the losses much faster. It can provide concrete evidence for police to take action against theft. Once again, insurance providers look favourably on this method of protection. Examples of such surveillance systems can be found in jewellery shops and banks.

Asides from all these, remote monitoring system enables senior citizens to continue to stay in their own community while their caregivers still have the insured form of good care and safety. It even reduces the total care cost by 90%, by delaying the need for an expensive long care facility (assisted living or skilled nursing home cost - \$3,000+ / month). Thus, it provides the caregiver's with visual contact from work to home, therefore reducing the caregiver's burnout resulting from worry. On a long-term standing, video monitoring provides an extra layer of safety by reducing and even eliminating incidents of neglect or abuse (See Figure 3.2). Users who are working in office can still care for their children or parents, at home.

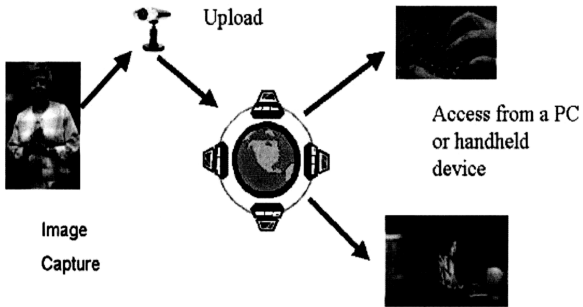


Figure 3.2: Remote Monitoring System (<http://www.eyesonelders.com/remote/about.html>)

3.4 Disadvantage of Remote Monitoring System

Below are some of the disadvantages of using Remote monitoring system:

- **Security Person's Poor Performance Affect Security Level:** Research was carried out by the Sandia National Laboratories, for the U.S. Department of Energy, 20 years ago, to test the effectiveness of an individual whose task was to sit in front of a video monitor(s) for several hours a day and watch for particular events. These studies demonstrated that most of the individual's performance would drop and the effectiveness reduced after some time. After only 20 minutes of watching and



evaluating monitor screens, the attention of most individuals degenerated to below acceptable levels, as monitoring video screen is boring. (<http://www.ncjrs.org/school/toc.html>). As a result, the security person when faced with a crime event may not be able to implement the necessary action, for he may not be even aware of its happening. There is no intellectually engaging stimuli, such as when watching a television program. This is particularly true if a staff member is asked to watch multiple monitors, with scenes of people milling about in various hallways see figure 3.3 below:

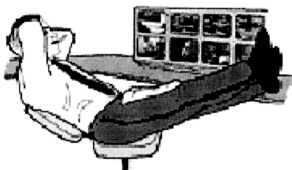


Figure 3.3 The security guard may not concentrate on the job

- CCTV systems are expensive. Installation can also be expensive. The maintenance cost will be another burden to company. Sometimes, the cost of employing security person is lower than the cost of setting up a Remote Monitoring System.



- ❑ Choosing the correct camera equipment requires some technical knowledge. Poor choice of camera makes monitoring the situation quite difficult.
- ❑ A single camera can effectively view only a small area than would be intuitively expected, hence many applications can require more cameras, equipment, and expense than was originally expected.
- ❑ Ongoing maintenance and operational support is required.
- ❑ Insiders with full knowledge of the installed video system's capabilities can possibly circumvent the system to their advantage.
- ❑ Some areas do not warrant the use of camera such as places that are very hot or wet, for example the outdoors.
- ❑ Some communities or individuals will challenge the legality of using cameras. They may sue the company for interfering in their personal privacy, for example some users set up the camera at home to monitor the actions of their maid. The maid may sue the boss for interfering in her personal privacy.
- ❑ Cameras can be stolen or vandalised. As the result, company may need to employ security person to monitor the equipment and this will create another cost to company. (<http://www.ncjrs.org/school/toc.html>)



3.5 Comparison - Remote Monitoring System VS Traditional CCTV

Remote video monitoring provides some benefits over the traditional CCTV.

These include: -

- **Distance of Monitoring**

Remote video monitoring provides real time video capturing from all remote video cameras and provides viewing access to other computers anywhere in the world. Traditional CCTV allows for monitoring within internal building or with another building, whereby the CCTV is connected by the coaxial cable. The distance is shorter compared to remote monitoring system.

- **Application Area**

By using the web browser, video information captured by the camera can be easily viewed by tourists so that they can plan trips with a literal visual progress report of the whether or to monitor the condition of traffic, as it allows, direct public access. Traditional CCTV is normally installed for security purposes. However, the application area of remote monitoring system is wider than traditional CCTV.

- **Location of Data Stored**

Remote monitoring system stores the data in computer disks while traditional CCTV stores data in videocassette recorders (VCR).



□ Data Transmission Speed

The data transmission speed of remote monitoring system relatively is slower than the traditional CCTV. Basically, the data transmission speed is 56K to 100M through telephone lines or networks. Besides that, it needs a specific software to interpret and analyse data and convert it into readable data. On the other hand, the traditional CCTV captures the data directly from the camera and sends it to the screen for monitoring through coaxial cable. The transmission speed is from 50m to 100m (over 400m potential).

□ Accessibility

The remote monitoring system allows different persons around the world to monitor a particular event at the same time; such as using the Internet to browse the weather in a country. But CCTV does not allow for multiple users from different location to access the system.