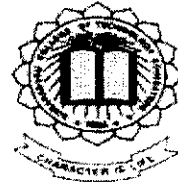
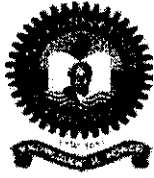


P-2772



**A STUDY ON MARKET POTENTIAL FOR UNDER VEHICLE  
SURVEILLANCE SYSTEMS (UVSS) IN BANGALORE CITY**

A PROJECT REPORT  
Submitted by

**NIDHIN VIJAYAN**  
**Reg. No. 0720400024**



In partial fulfilment of the requirements  
for the award of the degree

Of

**MASTER OF BUSINESS ADMINISTRATION**

**April, 2009**

KCT Business School  
Department of Management Studies  
**Kumaraguru College of Technology**  
(An autonomous institution affiliated to Anna University, Coimbatore)  
Coimbatore – 641 006

## PROJECT COMPLETION CERTIFICATE

This is to certify that Mr.NIDHIN VIJAYAN, Roll No. 07MBA24,a student of KCT Business School, Kumaraguru College of Technology, Coimbatore had undergone a project entitled "A STUDY ON MARKET POTENTIAL FOR UNDER VEHICLE SYSTEMS ( UVSS ) IN BANGALORE CITY" for COMMPORT Technologies Inc between 19th January 2009 to 17th April 2009.

During the tenure, his performance was Very Good.

Organisational Guide's

Name and Designation: Mr.S.SRINATH  
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Signature



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***BONAFIDE CERTIFICATE***

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**DEPARTMENT OF MANAGEMENT STUDIES  
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COIMBATORE**

**BONAFIDE CERTIFICATE**

Certified that this project report titled “A STUDY ON MARKET POTENTIAL FOR UNDER VEHICLE SURVIELLANCE SYSTEMS (UVSS) IN BANGALORE CITY” is the bonafide work of **Mr. NIDHIN VIJAYAN (Reg. No: 0720400024)** who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

**Faculty Guide  
(C. GANESH MURTHY)**

**Director  
(Dr.S.V.DEVANATHAN)**

Evaluated and Viva-Voce conducted on .....05/05/09.....

**Examiner I**

**Examiner II**

**KCT BUSINESS SCHOOL  
KUMARAGURU COLLEGE OF TECHNOLOGY  
COIMBATORE - 641 006**

*DECLARATION*

---

**DECLARATION**

I hereby declare that the dissertation entitled "**A STUDY ON MARKET POTENTIAL FOR UNDER VEHICLE SURVEILLANCE SYSTEMS (UVSS) IN BANGALORE CITY**" submitted for the Master of Business Administration degree is my original work and the dissertation has not formed the basis reward of any degree, associate ship, fellowship or any other similar titles.



**Signature of the Candidate  
(NIDHIN VIJAYAN)**

*ACKNOWLEDGEMENT*

---

## **ACKNOWLEDGEMENT**

I extend my heartfelt thanks to our Director **Dr.S.V.Devanathan**, KCT Business School, Kumaraguru College of Technology, for provided facilities to do this project.

In great honour and with indebt gratitude to my inspiring guide **C Ganesh Murthy** Sr. Lecturer who has taken great interest in helping me on and often in the successful pursuit of my project.

I express my heartfelt gratitude to **Mr. S SREENATH, Vice President**, CommPort Technologies Inc., for giving me an opportunity for doing the project in their esteemed organization and encouraged me with this expert counselling and guidance for successful completion of my research study.

Above all, I thank **Almighty God and My Parents** for giving me the grace and constant support in successfully completing this project to the best of my ability.



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## **ABSTRACT**

Surveillance is the art of monitoring the activities of persons or groups without them knowing they are being monitored. Surveillance has been an intrinsic part of human history. Sun Tzu's The Art of War, written 2,500 years ago, discusses how spies should be used against a person's enemies. But modern electronic and computer technology have given surveillance a whole new means of operation. No longer must it be practiced by agents, it can be automated using computers. No longer do people have to be watched- their own activities create records that describe their activities.

The greatest impact of surveillance is the numbers of organizations involved in surveillance operations:

- The state and security services still have the most powerful surveillance systems, because they are enabled under the law. But today levels of state surveillance has increased, and using computers they are now able to draw together many different information sources to produce profiles of persons or groups in society.
- Many large corporations now use various form of 'passive' surveillance. This is primarily a means of monitoring the activities of staff and for controlling public relations, but some large corporations actively use various forms of surveillance to monitor the activities of activists and campaign groups who may impact their operations.

This study concentrates on market potential of Under Vehicle Surveillance System (UVSS) in Bangalore City. This study also infers the analysis with the responses given by clients, along with a few suggestions for further enhancing the marketing strategy of the product.

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 ABOUT THE STUDY**

We live in a surveillance society. It is pointless to talk about surveillance society in the future tense. In all the rich countries of the world everyday life is suffused with surveillance encounters, not merely from dawn to dusk but 24/7. Some encounters obtrude into the routine, like when we get a ticket for running a red light when no one was around but the camera. But the majority is now just part of the fabric of daily life. Unremarkable.

To think in terms of surveillance society is to choose an angle of vision, a way of seeing our contemporary world. It is to throw into sharp relief not only the daily encounters, but the massive surveillance systems that now underpin modern existence. It is not just that CCTV may capture our image several hundred times a day that check-out clerks want to see our loyalty cards in the supermarket or that we need a coded access card to get into the office in the morning. It is that these systems represent a basic, complex infrastructure which assumes that gathering and processing personal data is vital to contemporary living.

Conventionally, to speak of surveillance society is to invoke something sinister, smacking of dictators and totalitarianism. We will come to Big Brother in a moment but the surveillance society is better thought of as the outcome of modern organizational practices, businesses, government and the military than as a covert conspiracy. Surveillance may be viewed as progress towards efficient administration, in Max Weber's view, a benefit for the development of Western capitalism and the modern nation-state.

Some forms of surveillance have always existed as people watch over each other for mutual care, for moral caution and to discover information covertly. However, from about 400 hundred years ago, 'rational' methods began to be applied to organizational practices, that steadily did away with the informal social networks and controls on which everyday business and governing previously relied. People's ordinary social ties were

made irrelevant so that family connections and personal identities would not interfere with the smooth running of these new organizations. But the good news was that by this means citizens and eventually workers could expect that their rights would be respected because they were protected by accurate records as well as by law.

When the nation-state was in its heyday, and departments proliferated, after World War Two, systems started to creak and even crumble under pressure. But help was at hand in the shape of new computer systems that reduced labour intensively and increased the reliability and volume of work that could be accomplished. In time, with new communications systems, now known together as 'information technology' (IT), bureaucratic administration could work not only between departments of the same organization, but between different organizations and, eventually, internationally. Something very similar is also true of businesses, first keeping records, then networking, and then going global, courtesy of IT. Yet even such 'joined-up' activities relate to technical and modern desires for efficiency, speed, control and coordination.

Impersonal and rule-centered practices spawned surveillance. Essential to bureaucracy is the oversight of subordinates and creation of records within the system. Business practices of double-entry book-keeping and of trying to cut costs and increase profit accelerated and reinforced such surveillance, which had an impact on working life and consumption. And the growth of military and police departments in the twentieth century, bolstered by rapidly developing new technologies, improved intelligence-gathering, identification and tracking techniques. But the main message is that surveillance grows as a part of just being modern.

## **1.2 ABOUT THE INDUSTRY**

Today, world events and organizational demands have made security for enterprises, worldwide, a major priority. Need for rapid and effective development of security systems has hastened search for better, advanced and more cost effective security applications.



### **Industrial Activities**

- Upgrading the interfacing to existing systems with advanced security technologies and solutions.
- Security access control, CCTV, Perimeter Intrusion Detection, Fire alarm and building automation systems to one integrated management command and control system.
- From local control centers to remote, regional and up to national center.
- Predefined process for management and escalation of events, based on up-to-date, security disciplines and security standards.

### **Industrial Portfolio**

- Video Surveillance Solutions
- Access Control Solutions
- Xray Screening Solutions
- Perimeter Intrusion Detection
- Fire Alarm and Detection Systems

## **1.3 ABOUT THE COMPANY**

COMM PORT Technologies Inc. is a US based organization that specializes in the Security and Safety industry. Commport provide state of the art, technology-based solutions for their clients' world wide in the areas of Security and Surveillance. Whether you are protecting your workplace from terrorism, loss prevention or sabotage, our integrated Physical Security solutions that ranges from CCTV, intrusion detection, access control, material handling, X-ray systems, to perimeter protection, you can always be rest assured that your assets and premises will be protected. They are steeped in the past performance that uniquely qualifies us to support you & your needs.

As a systems integrator, COMM PORT provides consultative and needs assessment, a wide selection of equipment, and worldwide coverage. Our staff possesses expertise across a spectrum of disciplines including: project management, systems engineering,

installation, testing, and maintenance, and maintains technological expertise through rigorous proactive training and certification programs.

The management and technical team of our organization is made up of industry veterans who go back in the security business for more than two decades of experience from different parts of the world with different types of background. Our unique expertise to assess a threat level by our experts from different backgrounds and different cultures makes us even a stronger corporation to handle security needs worldwide.

The management team comes from different areas of the industry from an analytical and operational sector, communication back ground to field service and installation group, all from the security and integration side of the industry. So besides having a strong forte on the analytical side we also possess the expertise of being out there in the middle of the field and get the job done right the first time

## COMM-PORT-INDIA

### Business Objective

- Develop core competency with niche products in market segments of business concern
- Working to expand and achieve recognition as integrated solutions providers

### Key Issues

- Strong focus on growth and core competencies
- Need to develop a skilled & focused team of professionals
- Planned approach towards each market segment

### Market Summary:(Market: Past, Present &Future)

Review those changes in market share. Leadership, players, market shifts, costs, pricing or competition that provide the opportunity for your company's success.

Initial market focus:

Western, southern &northern region: (Maharashtra, Bangalore, Chennai, Gujarat &Delhi)

### Key Focus/Strategy in:

- Petroleum
- Defense & government institutions
- IT &Telecom
- Banking & Financial Institutions
- Focus on vendor Empanelment /Registrations/Pre-qualification with key consultants/End users
- Conduct product orientation program to key officials from each market segment

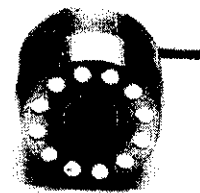
### 1.3.1 **PRODUCTS AND SERVICES**

#### UVSS and License Plate Reader (LPR)

- Go with heavy-duty performance
- If your premises are worth securing, it's worth looking into the Under Vehicle Surveillance System (UVSS) from CommPort. The CommPort UVSS solution is designed to scan, monitor, and digitally record crisp, clear

digital video images of the entire width of a vehicle's undersides—all with one permanent or portable system.

- Careful integration of components makes the UVSS system a cost-effective and convenient solution for checking passenger vehicles, vans, buses, semitractor truck and trailers, and more. It's an ideal solution for governmental, military, corporate, and transportation facilities—wherever complete vehicle monitoring is required.
- Advanced digital camera imaging and LED illumination provide clear, high-resolution video of the vehicle's underside to help detect attached packages, explosives, and other objects.
- For monitoring, images are processed by the first Digital Video Recorder (DVR) capable of recording 4-channels simultaneously and then displaying moving images in quad screen format. The UVSS DVR delivers the full picture of a vehicle's entire width for a fraction of the cost of less capable systems.
- Look for a total solution from a single source
- To simplify installation, the CommPort UVSS system includes a complete array of integrated and tested components and accessories: Rugged Inspection Ramp: Constructed from heavy-duty galvanized steel to withstand up to 48 tons from stationary or mobile vehicles. Steel-ramp and shoulder sections can be added easily for wider roads or multiple lanes. Configuration: Ramps can be permanently mounted with a permanent control cabling system or with a portable control system for portable applications.
- Long-life Cameras: Each UVSS ramp contains high-resolution, waterproof, colour video cameras. Each camera incorporates a scratch-resistant sapphire-crystal lens in waterproof life time warranty corrosion proof housing. Cameras can be individually angled. Specially designed proprietary lens operates as per the height and depth of any size vehicle – no adjustment is required for maximum depth of field.



- Advanced digital monitoring system can simultaneously output real time video per channel – no limitations on number of channels of video. An advanced codec algorithm delivers high-resolution, NTSC or PAL Video. Images can be stored on a local or network hard drive. Events can be stamped by time and date or by ANPR (Automatic License Plate Recognition).

## RGB PROFESSIONAL VIDEO

### Take the Next Step in Video

Step up to Digital RGB Fiber modem from Comm Port. It's the one digital fiber solution that gives you more capabilities over less fiber.

Fiber gives you greater signal integrity over longer distances - up to 2000m over multimode fiber and 20km over single-mode fiber. While analog transmission, principally using intensity modulation, is still common, analog signals are more prone to distortion and degradation than digital signals.

Multi fiber approaches are susceptible to synchronization and transmission latency deficiencies - small variations that degrade picture fidelity through problems with color convergence, shifting, smearing, and ghosting.

In contrast, Digital RGB Fiber modems use a single fiber provide precise color management, whether used directly or through a video matrix switch - plus CD-quality audio and keyboard and mouse functions.

### **Transmit RGB, Audio, Keyboard, Mouse - All On One Fiber**

Most high-resolution video solutions require three or more fibers to carry the color and sync information. Additional fibers are required for



mouse and keyboard signals, bringing the total fiber count up to five.

The Digital RGB Fiber modem carries video, audio, keyboard, and mouse on a single fiber. Compatible with all common RGB techniques, including RGBHV, RGsB, and RsGsBs, the modem allows great flexibility in achieving high-resolution video and broadcast-quality audio.

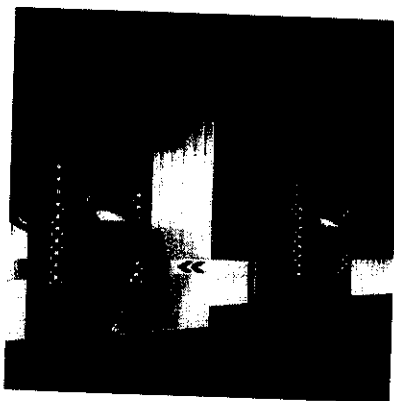
**Features:**

- Combine video, audio, mouse, and keyboard over one fiber
- Experience high-resolution video up to 1600x1200 @75Hz
- Slash the number of fibers per connection
- Simplify your cabling infrastructure
- Save space in equipment rooms
- Prevent signal degradation of audio and video
- Reduce installation and maintenance requirements
- Achieve maximum flexibility in placing video source and destination
- Works over standard single-mode fiber for up to 10,000 meters
- Works over standard multi-mode fiber for up to 1,000 meters
- Broadcast quality, 24 bit stereo digital audio transmission
- Supports standard PS/2 keyboard and mouse
- Supports bi-directional RS-232, up to 115K
- Supports all software platforms
- Status LEDs show integrity of fiber link
- Built-in diagnostics and front panel diagnostic lights
- Small form factor
- 12..24V AC/DC Power Supply

## EXPLOSIVE DETECTION

Comm Port offers a comprehensive suite of security solutions for combating explosive threats. Our customized security architecture uses innovative products and technologies implemented by subject matter experts.

Comm Port products and services offer solutions for guest screening, vehicle and package screening, canine detection, and command & control center operations.



## **XPRO KIOSK**

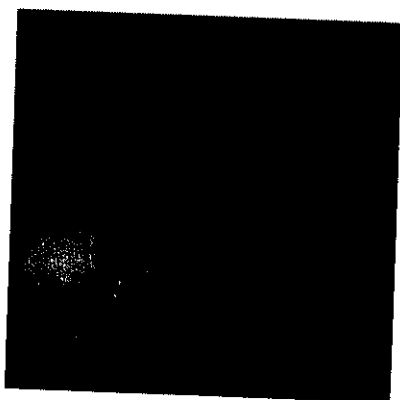
RedX's XPro Kiosk is an entertaining, noninvasive visitor screening system that meets the unique security needs of amusement parks, large sporting arenas, federal buildings, national monuments and parks, private facilities, and large events.

A high-throughput distributed network of XPro Kiosks, positioned outside the portal of entry (into parking lots and waiting areas), extends the envelope of detection and allows security personnel the time and space needed for scalable security responses. The user-activated XPro is able to screen individuals for the explosive trace residues indicative of terrorist bomb-making or explosives-handling activities, while also performing behavior assessment of the visitor's interaction with the kiosk. The system has an open architecture and can be

extended to deploy any number of other security sensors (such as radiological or biometric systems) as threats and new technologies emerge.

TheXPro Kiosk operates seamlessly with RedEXPERT, RedX's decision support software. Together, they provide a distributed, scalable, protective shield for your site.

The RedX system is the only system that provides both a pragmatic security solution for today and a lasting investment for the future.



## **RED EXPERT**

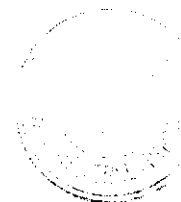
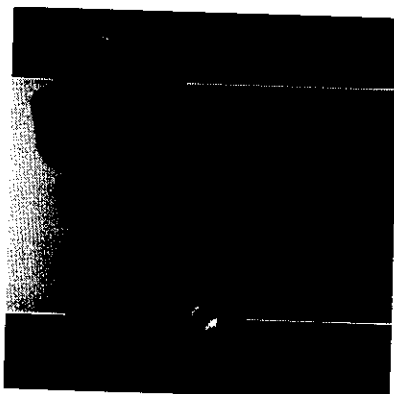
Focused on the needs of security personnel, RedEXPERT allows a layered command and control architecture that enables management to view their site globally using the dashboard view or locally at the level of individual alarms. It is a decision support system with an open architecture that enables integration of various security inputs as well as data from theXPro Kiosks. Much more than a real-time sensor display, the software is unique in its ability to enhance security operations from beginning to end.

RedEXPERT can help to manage threat levels, update procedures, share information with local emergency centers, resolve alarms, train, exercise, reduce paperwork, among other functions. Importantly, the system offers complete user-



authenticated data archiving for incident reporting. These combined features mean that RedEXpert can help you to be better prepared and to react more effectively during alerts, right when it matters the most.

A single act of terrorism can devastate a business... Your job is to prevent it.



**XPAK**

Designed to support applications where reliability, cost, portability, and ease of use are paramount, the XPAK portable explosives detection system is well-suited for widespread screening of people, bags, and packages at entrances, check points, and mailrooms.

At a price you can afford, the XPAK offers several advantages: It is less than 10 lbs., operates on standard AA batteries, requires no warm-up time, and is easily re-supplied in the field. The optical detection system is instantaneous, requires no sensitive electronics, and minimizes training requirements because results are intuitive.

Explosives screening has never been this affordable. This robust. This easy.

## ROAD BLOCKERS

Comm Port offers a comprehensive suite of security solutions for vehicle access control. Their purpose is to prevent unrestricted vehicle access and to thwart any attempt to use a vehicle to breach the perimeter security. In their closed position they block the roadway, enabling security personnel to examine the vehicle and passengers before granting access. In their open position they allow vehicles to pass through unrestricted.

These barriers differ from conventional access restriction gates (such as used in parking garages) in that they will stop and destroy most any vehicle that attempts to breach the barrier, including an explosive-laden truck traveling at high speed.

There are several different types or styles of vehicle barriers. Learn more about the different solutions below or contact us to help you learn which option is right for you.

### **The Arrestor**



The Arrestor is a unique vehicle access control barrier. It is a breakthrough design combining superb aesthetics with very high vehicle stopping power. The Arrestor is certified by the U.S. State Department to its highest vehicle stopping power rating (K12).

### **The Lightfoot**



A shallow-mount version of the Arrestor barrier. The LightFoot requires an excavation depth of about 12 inches. In addition, the LightFoot can be mounted "forward or backward" and is available in over 250 colors. The LightFoot is a good-looking, aesthetic vehicle access control barrier. The only difference is the lightfoot is rated K4, while the Arrestor is certified K12.

### **The Gater**



The Gater is our newest certified anti-terrorism vehicle barrier. The Gater (the name is a word play on both gate and alligator) is an all-electric vehicle barrier that has the U.S. State Department's highest crash test rating (K12). The Gater is available in various widths, and can span one or more traffic lanes.

### **B-Cube**



The B<sup>3</sup> (pronounced "B-Cube" and standing for "Basic Bollard Barrier") The B-Cube Bollard Assembly is a low cost, yet aesthetic perimeter security system that can be installed in phases as budget and security requirements evolve.

*MAIN THEME OF THE PROJECT*

---

## **CHAPTER 2**

### **2.1 OBJECTIVES OF THE STUDY**

- To discover the level of awareness and acceptability for UVSS among the potential prospects in southern India(Bangalore)
- To review the possibility of product and usage adaptability of UVSS in south India(Bangalore)
- To examine the market feasibility of UVSS in India (Bangalore)
- To evaluate the significant influence of UVSS product with market segment.
- To propose viable strategies for marketing UVSS in Bangalore
- To offer valid suggestion from the study results.

### **2.2 SCOPE OF THE STUDY**

The scope of the study is confined to corporate offices, government institutions, shopping malls, hotels and highly alert areas in Bangalore. The research is primarily emphasized to analyze the market potential for under vehicle surveillance systems in Bangalore city. Sample sizes of 50 institutions were taken into account for this purpose.

### **LIMITATIONS OF THE STUDY**

- Corporate offices don't reveal their security concerns.
- Indian companies are not viable for automation.
- Area of study was restricted to Bangalore city .Hence caution needs to be exercised in generalizing the results of the study.

### **2.3 RESEARCH METHODOLOGIES**

The study on market potential for UVSS in Bangalore city is descriptive and analytical in nature. The study is based on primary and secondary data. Primary data was collected through questionnaire and unstructured interview schedule. The secondary data was obtained from Commport, publications, magazines, websites and their old records and history.

Discussions were held with various team members of Commport to make a thorough study on the marketing strategies and to have better understanding of the entire operations of Commport.

#### **RESEARCH INSTRUMENTS**

A structured questionnaire and unstructured interview were adopted for collection of primary data. This type of questionnaire proves more reliable. This questionnaire reduces the chances of the interviewer to be confused over different phrasing of questions and answers. The interviewer is given the choices, he has to answer for a particular question and it is easily understandable and predictable.

#### **SAMPLE DESIGN**

This study is an investigation of market potential of UVSS products. Sampling is that part of statistical practice concerned with the selection of individual observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inference. For this study stratified random sampling technique is applied and interview from 50 places.

#### **STATISTICAL TOOL USED**

The following are the statistical tools applied for the study,

- Simple Percentage Analysis
- Likert's Scaling Technique
- Average Score Analysis
- Chi-square Analysis

## **2.4 REVIEW OF LITERATURE**

**Benjamin Coifman, David Beymer, Philip McLauchlan and Jitendra Malik**<sup>1</sup> has made a survey on Increasing congestion on freeways and problems associated with existing detectors have spawned an interest in new vehicle detection technologies such as video image processing. Existing commercial image processing systems work well in free-flowing traffic, but the systems have difficulties with congestion, shadows and lighting transitions. These problems stem from vehicles partially occluding one another and the fact that vehicles appear differently under various lighting conditions. We are developing a feature-based tracking system for detecting vehicles under these challenging conditions. Instead of tracking entire vehicles, vehicle features are tracked to make the system robust to partial occlusion. The system is fully functional under changing lighting conditions because the most salient features at the given moment are tracked. After the features exit the tracking region, they are grouped into discrete vehicles using a common motion constraint. The groups represent individual vehicle trajectories which can be used to measure traditional traffic parameters as well as new metrics suitable for improved automated surveillance. This paper describes the issues associated with feature based tracking, presents the real-time implementation of a prototype system, and the performance of the system on a large data set.

**Xiaojing Yuan Zehang Sun Varol, Y. Bebis, G**<sup>2</sup> has made a survey on distributed vision-based surveillance system. The system acquires and processes grey level images through one or multiple camera units monitoring certain area(s) via a local area network (LAN) and is capable of combining information from multiple camera units to obtain a consensus decision. It can be trained to detect certain type of intrusions, for example pedestrians, a group of pedestrians, vehicles, pets, etc., and minimizes false alerts due to other non-interested intrusions. As a case study, we aim to detect pedestrian/vehicle in an observation area. Our vision-based intrusion detection approach consists of two main steps: background subtraction based hypothesis generation (HG) and

appearance-based hypothesis verification (HV). HG hypothesizes possible threats (intrusions), and HV verifies those hypotheses using a Gabor filter for feature extraction and support vector machines (SVMs) for classification. The system has been tested in an unconstrained outdoor environment, illustrating good performance.

**Lipton, A.J. Fujiyoshi, H. Patil, R.S**<sup>3</sup> has made a survey on end-to-end method for extracting moving targets from a real-time video stream, classifying them into predefined categories according to image-based properties, and then robustly tracking them. Moving targets are detected using the pixel wise difference between consecutive image frames. A classification metric is applied these targets with a temporal consistency constraint to classify them into three categories: human, vehicle or background clutter. Once classified targets are tracked by a combination of temporal differencing and template matching. The resulting system robustly identifies targets of interest, rejects background clutter and continually tracks over large distances and periods of time despite occlusions, appearance changes and cessation of target motion.

**Dieter Koller, Joseph Weber and Jitendra Malik**<sup>4</sup> has made a survey of occlusion in tracking multiple 3D objects in a known environment. For that purpose we employ a contour tracker based on intensity and motion boundaries. The motion of a contour enclosing the image of a vehicle is assumed to be well describable by an affine motion model with a translation and a change in scale. Contours are represented by closed cubic splines the position and motion of which are estimated along the image sequence. In order to employ linear Kalman Filters we decompose the estimation process in two filters: one for estimating the affine motion parameters and one for estimating the shape of the contours of the vehicles. Occlusion detection is performed by intersecting the depth ordered regions associated to the objects. The intersection part is then excluded in the motion and shape estimation. Occlusion reasoning also improves the shape estimation in case of adjacent objects where shape estimates can be corrupted by image data of other objects. In this way we obtain robust motion estimates



and trajectories for vehicles even in the case of occlusions, as we show in some experiments with real world traffic scenes.

**G. Michalopoulos, Richard A. Fundakowski, Meletios Geokezas, Robert C. Fitch**<sup>5</sup> has made a study on vehicle detection system for providing data characteristic of traffic conditions includes a camera overlooking a roadway section for providing video signals representative of the field (traffic scene), and a digitizer for digitizing these signals and providing successive arrays of pixels (picture elements) characteristic of the field at successive points in space and time. A video monitor coupled to the camera provides a visual image of the field of view. Through use of a terminal and in conjunction with the monitor, an operator controls a formatter so as to select a subarray of pixels corresponding to specific sections in the field of view. A microprocessor then processes the intensity values representative of the selected portion of the field of view in accordance with spatial and/or temporal processing methods to generate data characteristic of the presence and passage of vehicles. This data can be utilized for real-time traffic surveillance and control.

**IOmar Javed and Mubarak Shah**<sup>6</sup> has made a study on the issues that need to be resolved before fully automated outdoor surveillance systems can be developed, and present solutions to some of these problems. Any outdoor surveillance system must be able to track objects moving in its field of view, classify these objects and detect some of their activities. We have developed a method to track and classify these objects in realistic scenarios. Object tracking in a single camera is performed using background subtraction, followed by region correspondence. This takes into account multiple cues including velocities, sizes and distances of bounding boxes. Objects can be classified based on the type of their motion. This property may be used to label objects as a single person, vehicle or group of persons. Our proposed method to classify objects is based upon detecting recurrent motion for each tracked object. We develop a specific feature vector called a 'Recurrent Motion Image' (RMI) to calculate repeated motion of objects. Different types of objects yield very different RMI's and

therefore can easily be classified into different categories on the basis of their RMI. The proposed approach is very efficient both in terms of computational and space criteria. RMI's are further used to detect carried objects. We present results on a large number of real world sequences including the PETS 2001 sequences. Our surveillance system works in real time at approximately 15Hz for 320x240 resolution color images on a 1.7 GHz pentium-4 PC.

**Mi-Ae Ko Young-Mo Kim<sup>7</sup>** has made a survey on a simple and robust algorithm for vehicle's license plate recognition system. Based on template matching, this algorithm can be applied for real time recognition of license plates for vehicle surveillance system. The working principle is weight feature based hierarchical template evaluation

**.Carlos Sun, Stephen G. Ritchie Kevin Tsai and R. Jayakrishnan<sup>8</sup>** has made a study on The vehicle reidentification problem is the task of matching a vehicle detected at one location with the same vehicle detected at another location from a feasible set of candidate vehicles detected at the other location. This paper formulates and solves the vehicle reidentification problem as a lexicographic optimization problem. Lexicographic optimization is a preemptive multi-objective formulation, and this lexicographic optimization formulation combines lexicographic goal programming, classification, and Bayesian analysis techniques. The solution of the vehicle reidentification problem has the potential to yield reliable section measures such as travel times and densities, and enables the measurement of partial dynamic origin/destination demands. Implementation of this approach using conventional surveillance infrastructure permits the development of new algorithms for ATMIS (Advanced Transportation Management and Information Systems). Freeway inductive loop data from SR-24 in Lafayette, California, demonstrates that robust results can be obtained under different traffic flow conditions.

**Valera, M. Velastin, S.A**<sup>9</sup> has made a survey on describes the current state-of-the-art in the development of automated visual surveillance systems so as to provide researchers in the field with a summary of progress achieved to date and to identify areas where further research is needed. The ability to recognise objects and humans, to describe their actions and interactions from information acquired by sensors is essential for automated visual surveillance. The increasing need for intelligent visual surveillance in commercial, law enforcement and military applications makes automated visual surveillance systems one of the main current application domains in computer vision. The emphasis of this review is on discussion of the creation of intelligent distributed automated surveillance systems. The survey concludes with a discussion of possible future directions

**Weiming Hu Tieniu Tan Liang Wang S. Maybank**<sup>10</sup> has made a study on an end-to-end method for extracting moving targets from a real-time video stream, classifying them into predefined categories according to image-based properties, and then robustly tracking them. Moving targets are detected using the pixel wise difference between consecutive image frames. A classification metric is applied these targets with a temporal consistency constraint to classify them into three categories: human, vehicle or background clutter. Once classified targets are tracked by a combination of temporal differencing and template matching. The resulting system robustly identifies targets of interest, rejects background clutter and continually tracks over large distances and periods of time despite occlusions, appearance changes and cessation of target motion.

**Weiming Hu Tieniu Tan Liang Wang S. Maybank**<sup>11</sup> has made a study on in dynamic scenes, especially for humans and vehicles, is currently one of the most active research topics in computer vision. It has a wide spectrum of promising applications, including access control in special areas, human identification at a distance, crowd flux statistics and congestion analysis, detection of anomalous behaviors, and interactive surveillance using multiple cameras, etc. In general, the processing framework of visual surveillance in dynamic scenes includes the following stages: modeling of environments,

detection of motion, classification of moving objects, tracking, understanding and description of behaviors, human identification, and fusion of data from multiple cameras. We review recent developments and general strategies of all these stages. Finally, we analyze possible research directions, e.g., occlusion handling, a combination of two and three-dimensional tracking, a combination of motion analysis and biometrics, anomaly detection and behavior prediction, content-based retrieval of surveillance videos, behavior understanding and natural language description, fusion of information from multiple sensors, and remote surveillance.

**CHAPTER 3**  
**ANALYSIS AND INTERPRETATION**

Table 1: The following table shows the nature of the place wise distribution of the respondents.

Nature of Place	No. of Respondents	Percentage
Organization	9	18
Shopping Mall	15	30
Govt. Institution	18	36
Others	8	16
Total	50	100

Interpretation:

From the above table it is inferred that 36% of the respondents are Government institutions, 30% of the respondents are shopping mall, 18% of the respondents are organizations and 16% of the respondents are others category.

Hence, 36% of the respondents are belongs to Government institution.

Chart 1: Nature of Place

# Nature of Place

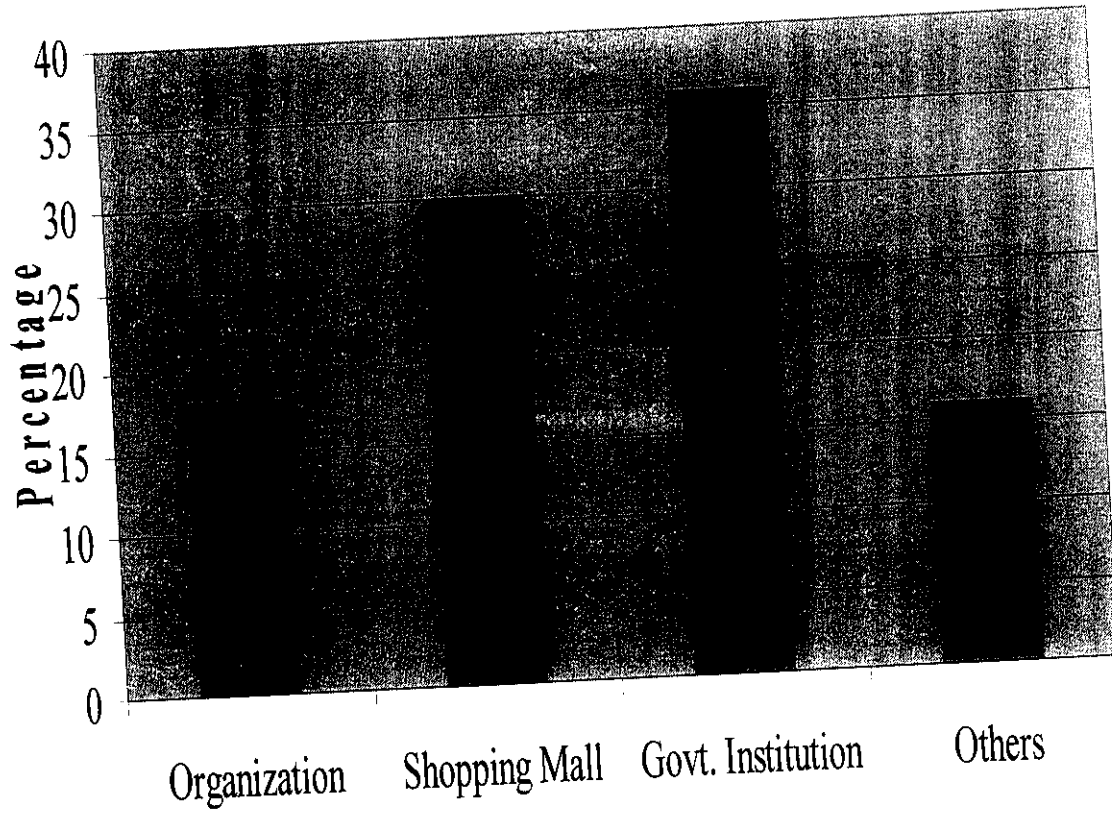


Table 2: The following table represents the understanding of line of security responsibilities amongst staff and management

Response	Number of Respondents	Percentage
Yes	18	36
No	32	64
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies say that the staff and management have not clearly understood the lines of security responsibility. About 36% of the respondents have answered that the line of security responsibilities are clearly understood by their staff and management and 64% of the respondents have answered no.

Chart 2: Understanding of Line of Security Responsibilities by Staff and Management

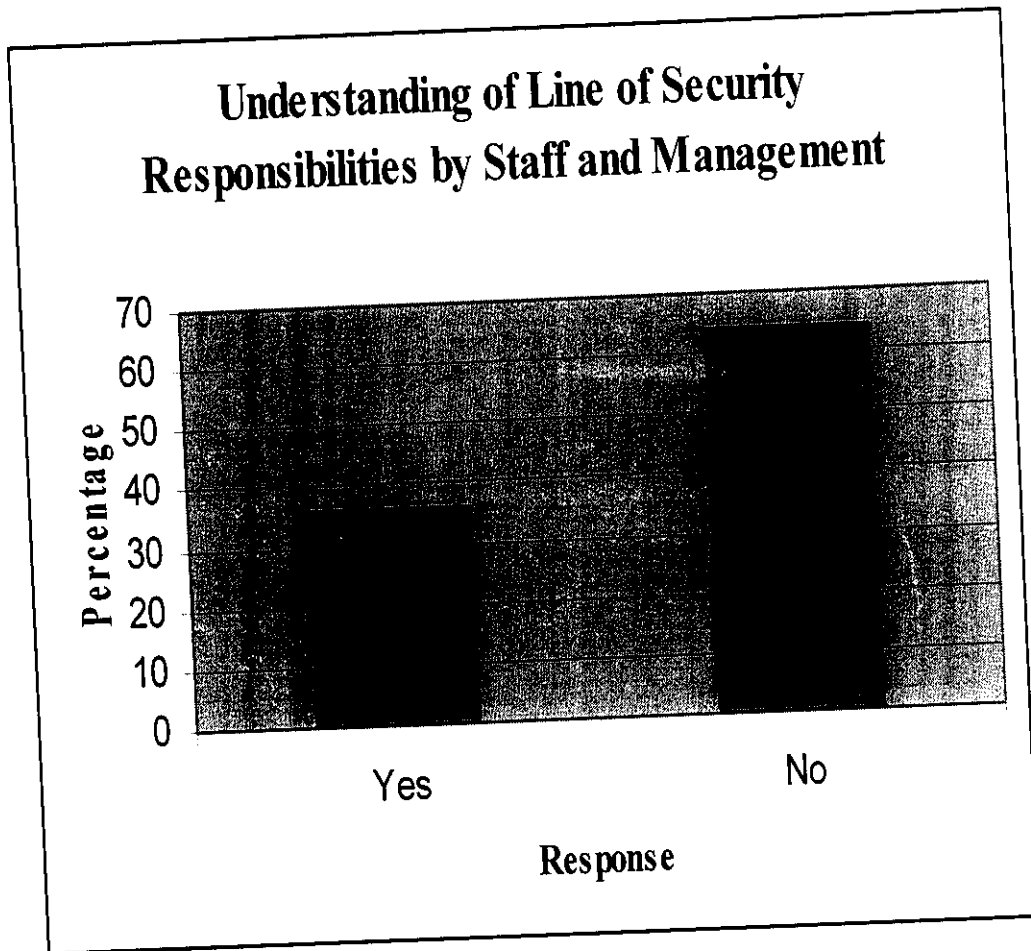




Table 3: The following table represents whether the business had conducted security surveys.

Response	Number of Respondents	Percentage
Yes	27	54
No	23	46
Total	50	100

**Interpretation:**

From the above table it is inferred that most of the companies have conducted security surveys in their companies. About 54% of the respondents have answered that they have conducted security surveys for their business and 23% of the respondents have answered no.

Chart 3: Has your business conducted security surveys

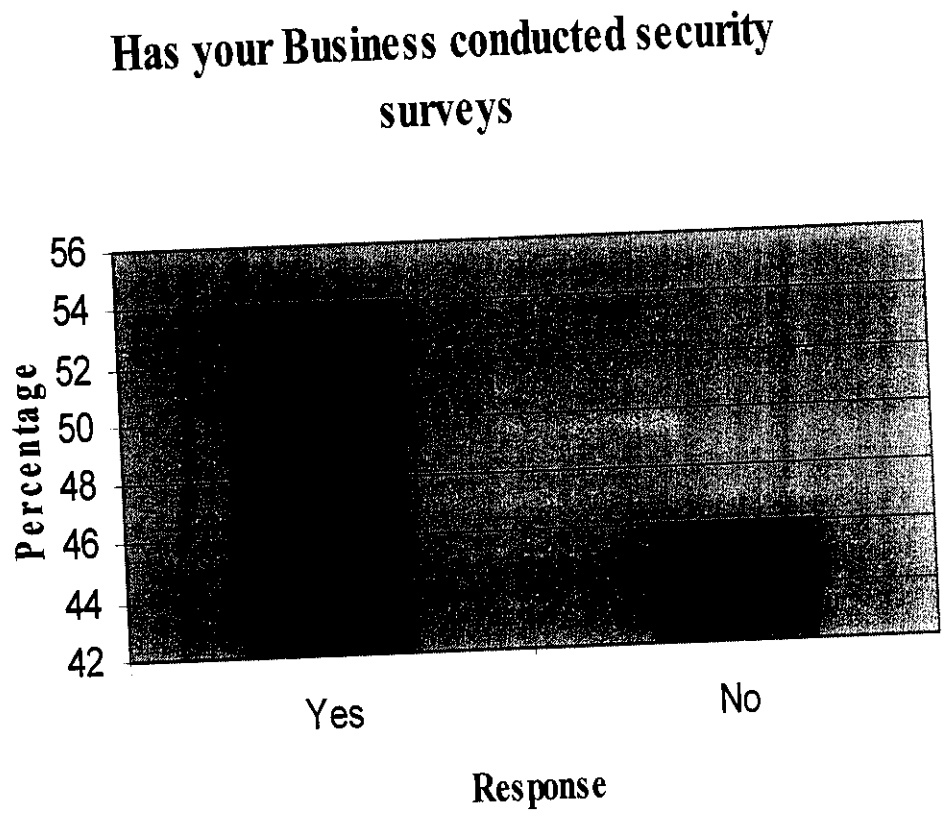


Table 4: The following table shows whether the business had conducted seminars on security and security awareness programs.

Response	Number of Respondents	Percentage
Yes	10	20
No	40	80
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies have not conducted seminars on security and security awareness programs. About 20% of the respondents have answered that they have conducted seminars on security and security awareness programs and 80% of the respondents have answered no.

Chart 4: Has your business conducted seminars on security and security awareness programs.

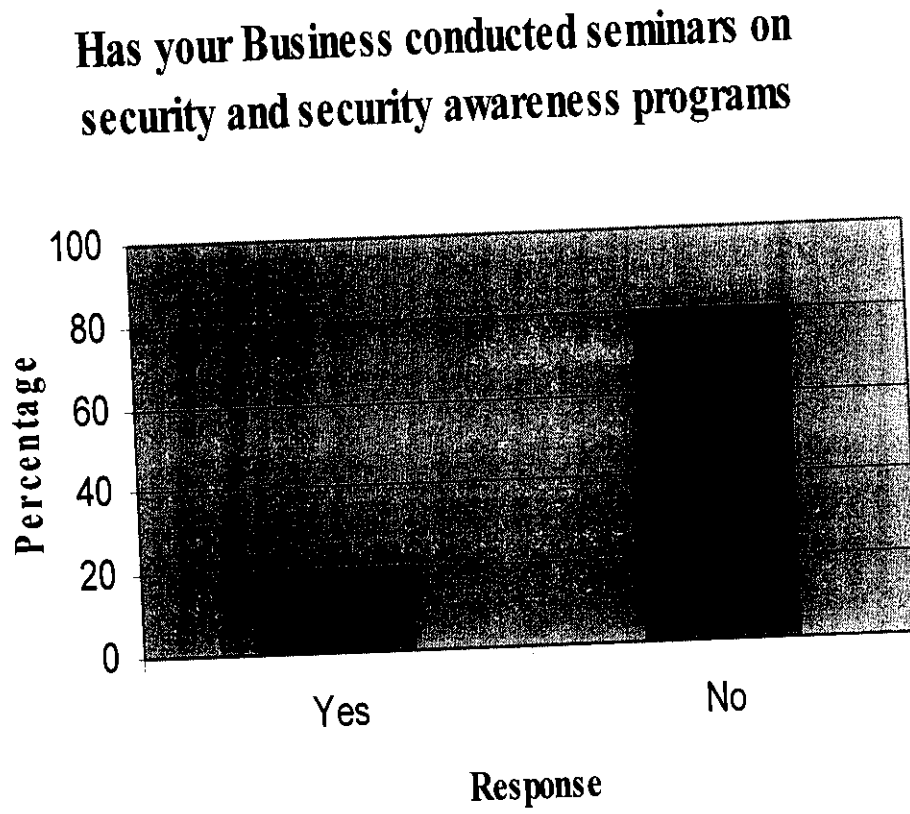


Table 5: The below table indicates if the business has developed a Security Plan and emergency security procedure.

Response	Number of Respondents	Percentage
Yes	16	32
No	34	68
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies have not yet developed a security plan and emergency security procedure. About 32% of the respondents have answered that they have developed a security plan and emergency security procedure and 34% of the respondents have answered no.

Chart 5: Has your business developed a Security Plan and emergency security procedure

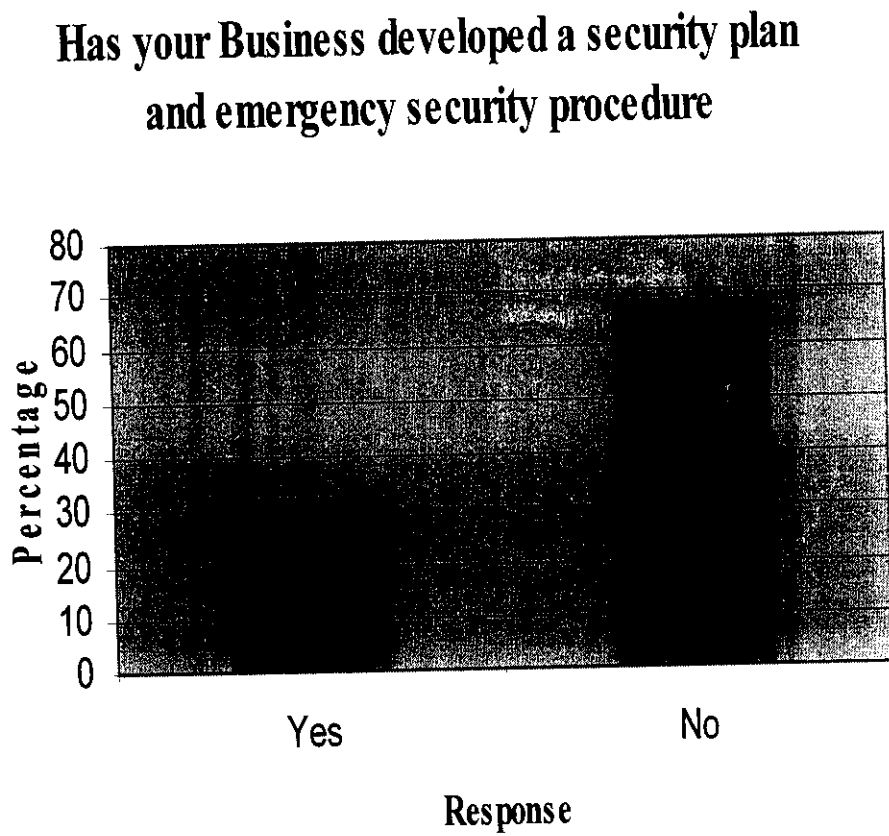


Table 6: Below table shows the security measures implemented in a business.

Response	Number of Respondents	Percentage
Security incident reporting and response procedures	28	56
Security risk assessment	32	64
Emergency response plans	22	44
Installation of electronic access control	7	14
Additional security locks and keys	28	56
Purchase of safes/construction of strong rooms	38	76
Installation of steel grills/reinforced doors or facility hardening	45	90
Enhanced vehicle security (e.g. satellite tracking/UVSS)	2	4
Stand-alone security alarm system	43	86
Monitored security alarm system	45	90
Closed circuit television system (CCTV)	10	20
Security Guards	50	100
Security training	21	42

**Interpretation:**

From the above table it is inferred that the businesses are exposed to various security measures in varying percentages. About 56% of the respondents have answered that they have implemented security incident reporting and response procedures, around 64% of respondents have answered that their business have security risk assessment, about 44% of respondents have emergency response plans, about 14% of business have implemented electronic access control, around 56% with security controls and locks, about 76% have enhanced security with purchase of locks and stronger rooms, about 90% with steel and grill doors, about 4% with enhanced vehicle security, 86% with stand alone security alarm system, 90% with monitored security alarm system, 20% with closed circuit television system, 100% with security guards and 42% with security training.



Chart 6: Security measures implemented in your business.

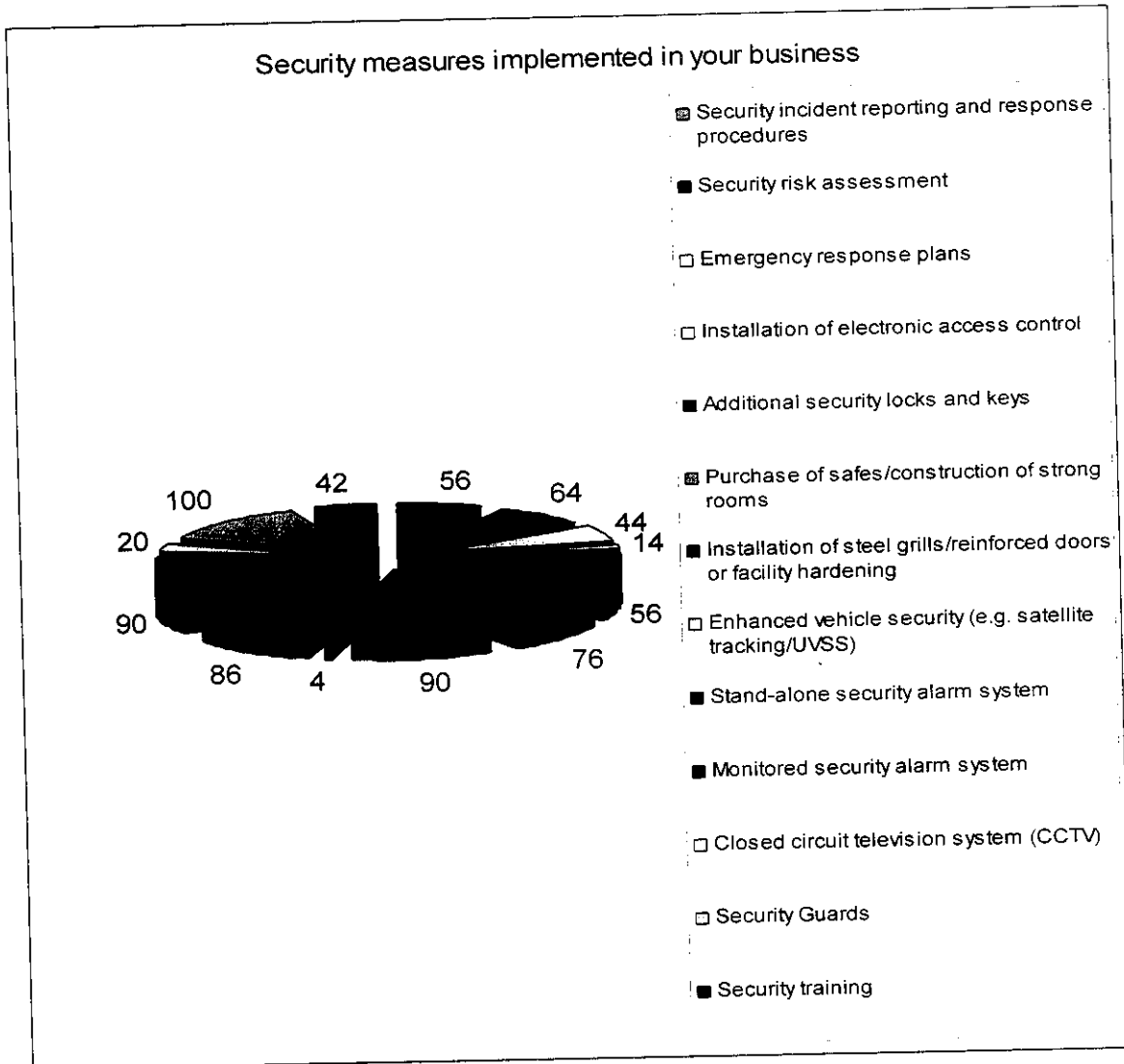


Table 7: The following table shows the level of satisfaction towards the present security measures.

Level of Satisfaction	No. of Respondents	Percentage
Highly Satisfied	15	30
Satisfied	20	40
Dissatisfied	12	24
Highly Dissatisfied	3	6
Total	50	100

**Interpretation:**

From the table it is understood that 40% of the respondents are satisfied, 30% of the respondents are highly satisfied, 24% of the respondents are dissatisfied and 6% of the respondents are highly dissatisfied.

Hence, 40% of the respondents are satisfied with the present security system in their premises.

Chart 7: Satisfaction towards security measures undertaken for the safety of staffs.

## Satisfaction towards security measures undertaken for the safety of staffs

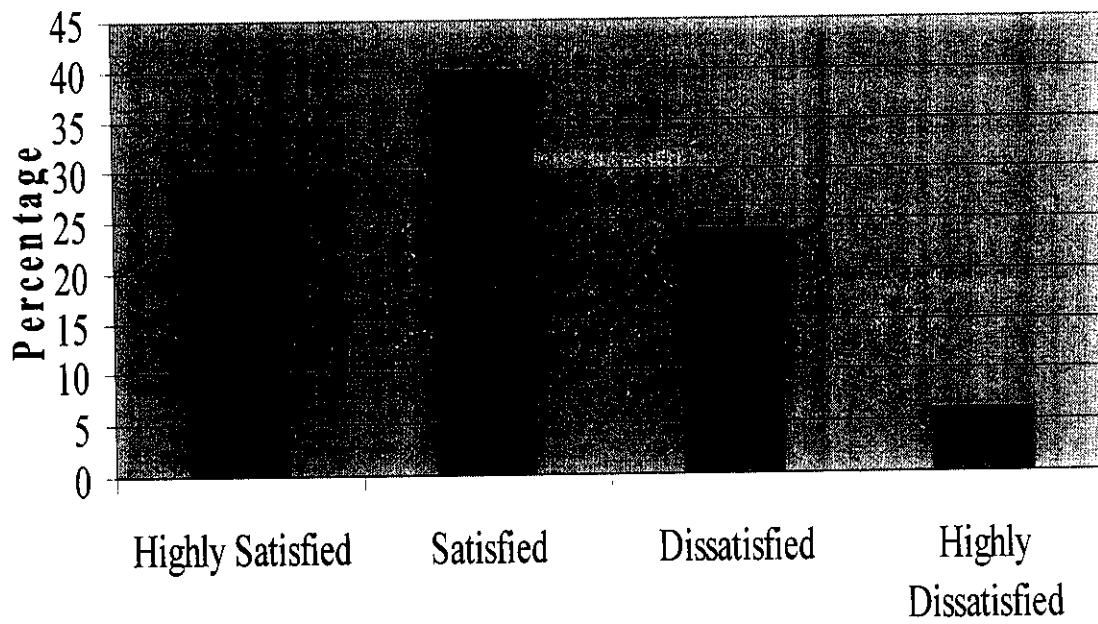


Table 8: The below table indicated the awareness of UVSS and its importance.

Response	Number of Respondents	Percentage
Yes	8	16
No	42	84
Total	50	100

**Interpretation:**

From the above table it is inferred that most of the companies are not aware of UVSS and its importance. About 16% of the respondents have answered that they are aware of UVSS and its importance and 84% of the respondents are unaware of the importance of UVSS.

Chart 8: Awareness of UVSS and its importance

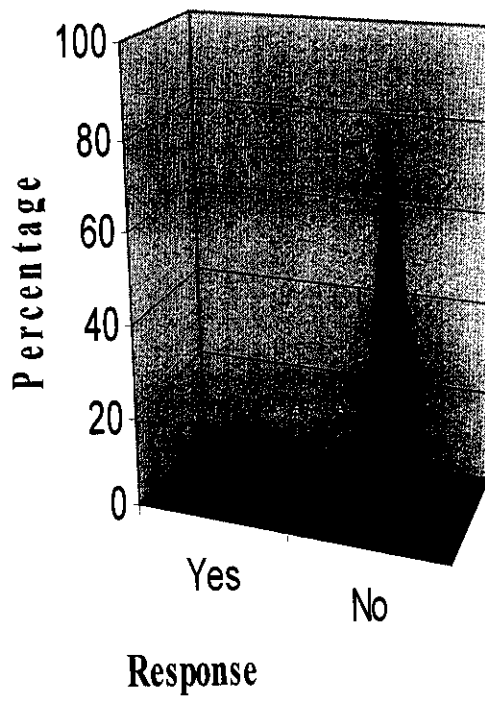
**Awareness of UVSS and its importance**

Table 9: Following table shows the interest level of Companies in knowing and understanding more about UVSS.

Response	Number of Respondents	Percentage
Yes	37	74
No	13	26
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies are interested in knowing and understanding more about UVSS and its significance as a security measure. About 74% of the respondents have answered that they are interested in knowing and understanding more about UVSS and 26% of the respondents are not interested to know more about UVSS.

Chart 9: Interest in knowing more about UVSS and its security features.

### Interest in knowing more about UVSS and its security features

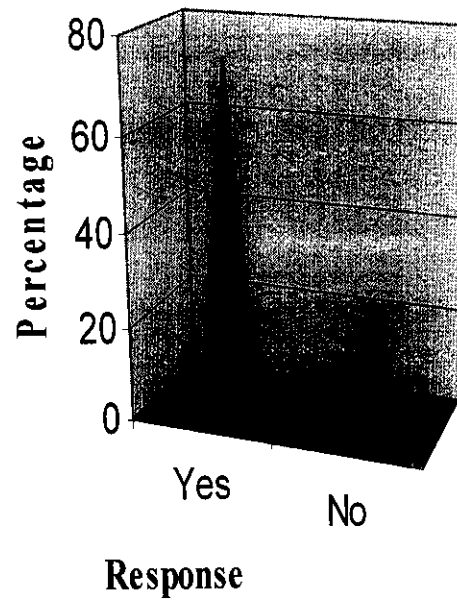


Table 10: The below table represents whether UVSS would make a work place a safer place.

Response	Number of Respondents	Percentage
Yes	20	40
No	30	60
Total	50	100

**Interpretation:**

From the above table it is inferred that most of the companies do not believe that UVSS would make their work place a safer one. About 40% of respondents believe using UVSS is safer in their work place and 60% do not believe that UVSS can offer safety at their work place.



Chart 10: Belief on that UVSS will enhance security at work place.

**Belief on that UVSS will enhance security at work place**

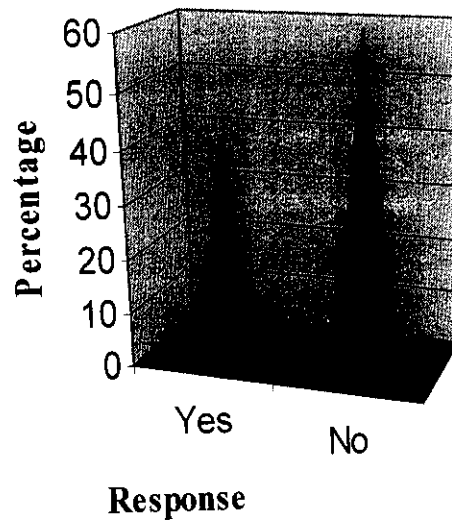


Table 11: The following table shows UVSS as a extravagance rather than a necessity.

Response	Number of Respondents	Percentage
Yes	10	20
No	40	80
Total	50	100

**Interpretation:**

From the above table it is inferred that most of the companies do not consider UVSS to be an extravaganza rather than a necessity. About 20% of respondents consider UVSS to be an extravaganza and 80% respondents consider UVSS as a necessity.

Chart 11: UVSS as an extravaganza or facility

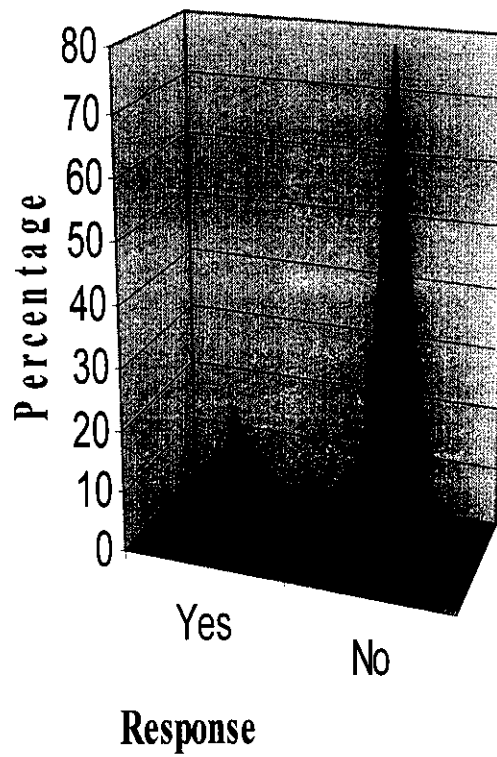
**UVSS as an extravaganza or facility**

Table 12: The below table shows the amount reserved for security purposes in a company's budget.

Response	Number of Respondents	Percentage
2500000-3500000	43	86
3600000-4500000	5	10
4600000-5500000	2	4
Above all	0	0
Total	50	100

Interpretation:

From the above table it is inferred that 86% of respondents have reserved an approximate amount for security in the range 2500000-3500000 and 10% of respondents in the range 3600000-4500000 and 4% of respondents in the range 4600000-5500000 and 0% above all.

Chart 12: Approximate amount reserved for security in company's budget

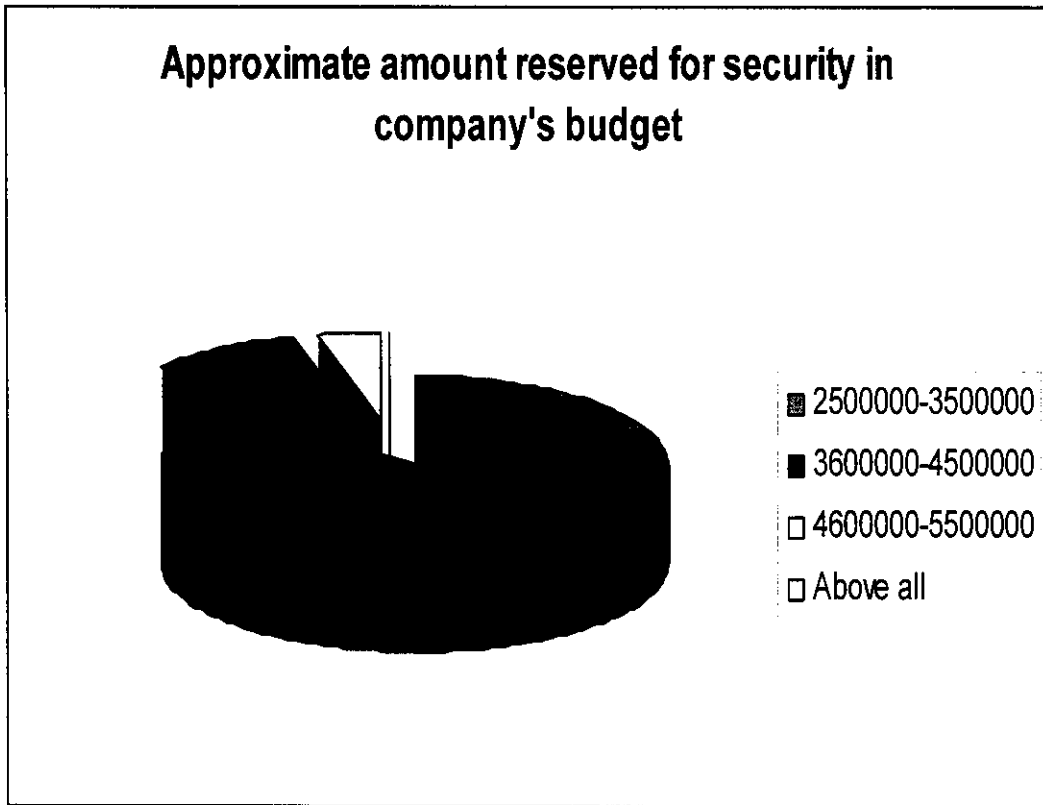


Table 13: The following table shows the affordable rate at which a UVSS can be installed in an organization.

Response	Number of Respondents	Percentage
1000000	3	6
Above 1000000	2	4
Below 1000000	45	90
Total	50	100

**Interpretation:**

From the above table it is inferred that 90% of respondents feel the affordable rate they can offer for UVSS is below 1000000, 6% of respondents 1000000 and 4% of respondents above 1000000.

Chart 13: Affordable rate for using UVSS.

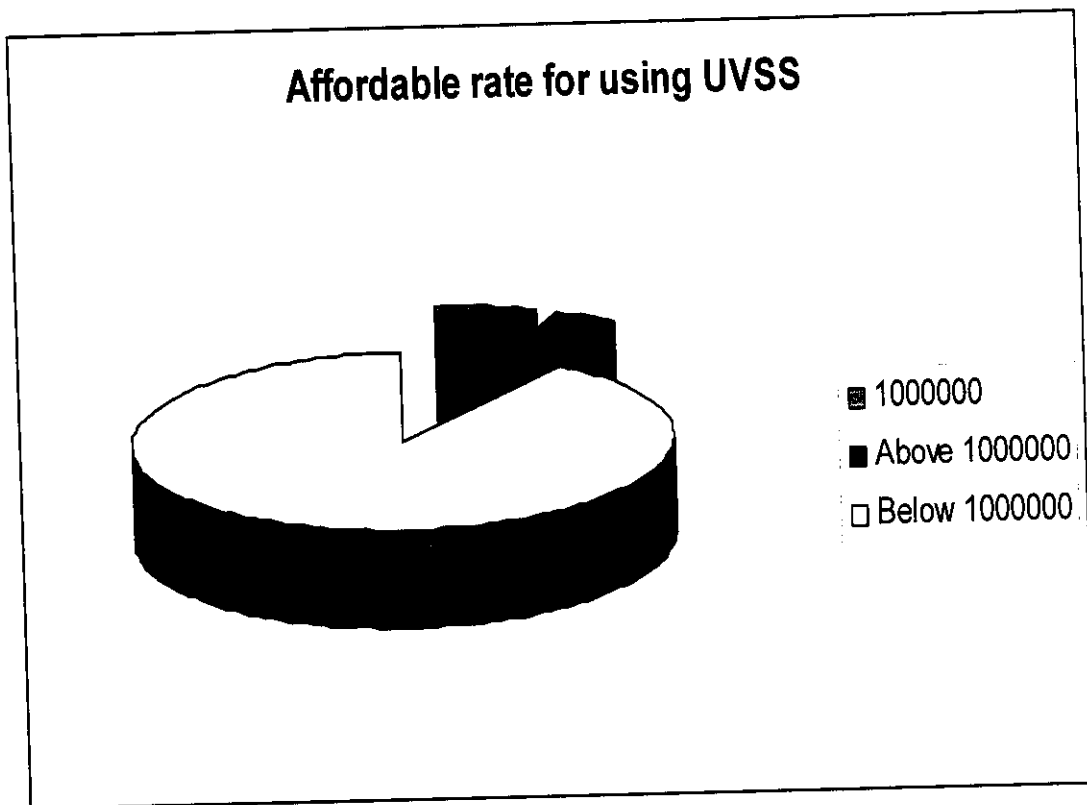


Table 14: The below table shows the company's choice in choosing between a semi-portable and non-portable product.

Response	Number of Respondents	Percentage
Yes	42	84
No	8	16
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies say yes to semi portable security product rather than non-portable. About 84% of respondents are ready to avail semi portable security product rather than non-portable and 16% of the respondents say no.



Chart 14: Use of semi portable security products rather than non- portable

### Use of semi portable products rather than non-portable

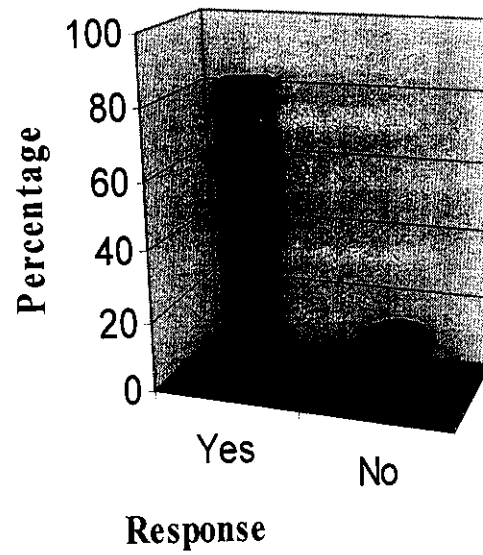


Table 15: The following table throws light on whether the company would be open to a presentation on UVSS.

Response	Number of Respondents	Percentage
Yes	37	74
No	13	26
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies say yes for a presentation on UVSS. About 74% of respondents are ready for a presentation on UVSS and 26% of respondents are not ready for a presentation on UVSS.

Chart 15: Interest for UVSS presentation

### Interest for UVSS presentation

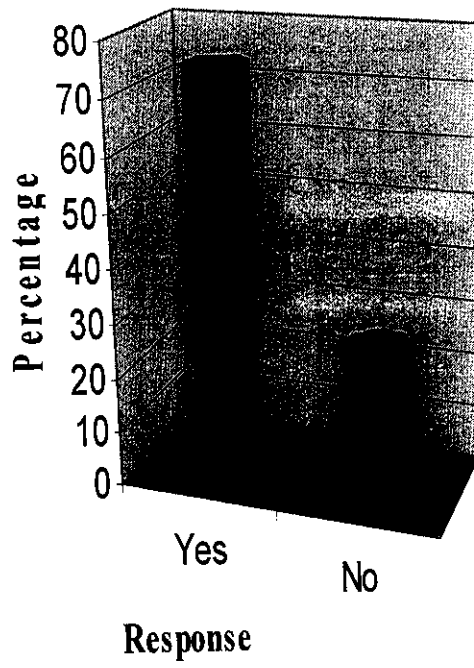


Table 16: The below table shows whether the sale of UVSS would increase if there were financing schemes for the product.

Response	Number of Respondents	Percentage
Yes	41	74
No	9	26
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies say that UVSS would be used more often if there were financing schemes. About 74% of respondents say yes for financing schemes for UVSS and 26% of respondents say no.

Chart 16: Support for finance schemes for buying UVSS

### Support for finance schemes for buying UVSS

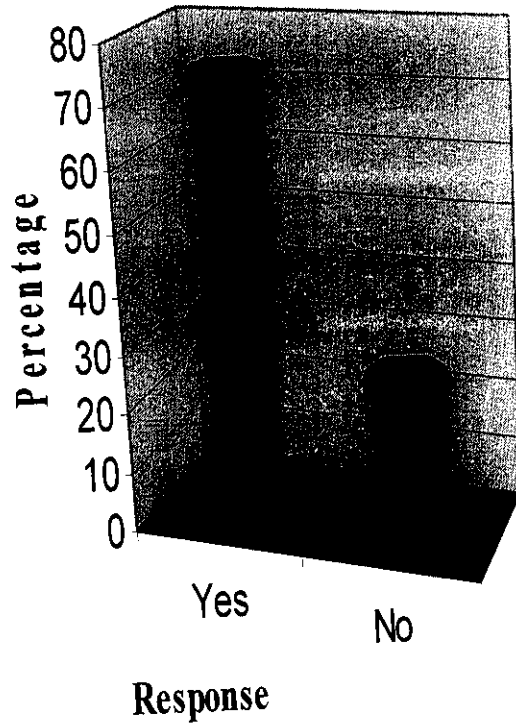


Table 17: The below table shows if companies would prefer a systems expert's advice to evaluate the cost efficiency of UVSS.

Response	Number of Respondents	Percentage
Yes	20	40
No	30	60
Total	50	100

Interpretation:

From the above table it is inferred that most of the companies say no for an advice from the systems expert to evaluate UVSS. About 40% of respondents say yes and 60% of respondents say no.

Chart 17: Expert's advise to evaluate UVSS

### Expert's advise to evaluate UVSS

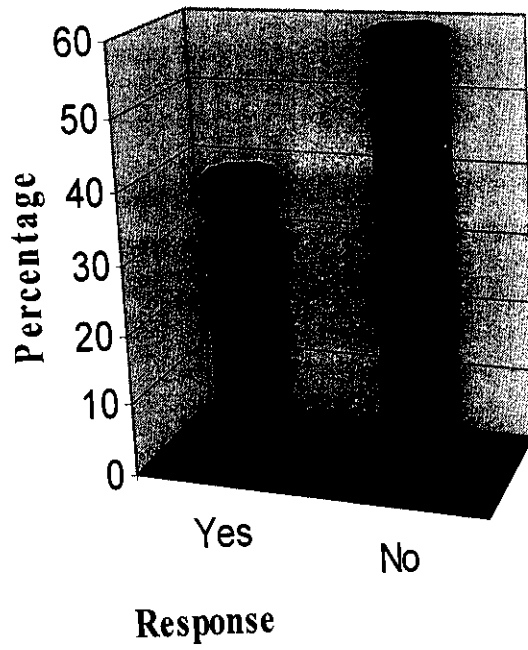


Table 18: The following table shows the level of agreeability towards the acceptance of UVSS product by the respondents.

LEVEL OF AGREEABILITY	SA	A	N	DA	SDA
Suitability of UVSS	8	13	15	11	3
Affordable price of the product	7	4	11	23	5
Enhances the Security	13	19	12	5	1
Investment increase the reputation	10	15	12	11	2
Necessary in Future	9	12	17	8	4

#### Interpretation:

From the table it is inferred that maximum of 26% of the respondents strongly agreed with UVSS will enhance the existing security, 20% of them strongly agreed with investment in UVSS will increase the reputation of the company/organization. According to suitability of UVSS factor, 42% of the respondents agreed, 30% of the respondents are neutral and 28% of the respondents are disagreed. With reference to affordability of the product, 56% of the respondents are disagreed and 22% of the respondents are neutral & agreed. According to UVSS enhances the existing security factor, 64% of the respondents are agreed, 24% of the respondents are neutral and 12% of the respondents are disagreed. According to investment in UVSS increases the reputation factor 50% of the respondents are agreed, 26% of the respondents are disagreed and 24% of the respondents are in neutral. According to UVSS is a necessary product factor 42% of the respondents are agreed, 34% of the respondents are neutral and 24% of the respondents are disagreed.

Hence, Overall 44% of the respondents are agreed the UVSS related factors, 26.8% of the respondents are in neutral and 29.2% of the respondents are disagreed.



## AVERAGE SCORE ANALYSIS

The following table shows the average score analysis between nature of place and the level of agreeability towards the UVSS.

**Table 19: Average Score – Nature of Place and Level of Agreeability**

Level of Agreeability \ Nature of Place	Organization	Shopping Mall	Govt. Institution	Others
	Suitability of UVSS	3.22	3.07	3.50
Affordable price of the product	2.89	2.87	2.78	2.00
Enhances the Security	3.67	3.93	3.67	3.75
Investment increase the reputation	3.44	3.20	3.56	3.38
Necessary in Future	3.33	3.07	3.28	3.63

### Interpretation:

From the table it is inferred that the organization believes UVSS system will enhance the existing security, and about other factors the respondents are neutral. According to shopping mall, the respondents agreed the UVSS will enhance the existing security. According to the Government institution, the respondents are agreed with UVSS is suitable for them, it enhances the security and the investment increase the reputation. The others category respondents agreed with the UVSS enhance the existing security and they feel UVSS is a necessary product for future.

Hence, the Government institutions type of respondents are more agreed than other type of respondents.

## CHI-SQUARE ANALYSIS

Hypothesis: The nature of place has no significant influence on the level of satisfaction in the present security system.

The following table shows chi-square analysis between nature of the place and level of satisfaction of present security system.

**Table 20: Chi-Square – Nature of Place vs Level of Satisfaction**

Crosstab

Count		Level of Satisfaction				Total
		Highly Satisfied	Satisfied	Dissatisfied	Highly Dissatisfied	
Nature of Place	Organization	3	4	2		9
	Shopping Mall	6	5	3	1	15
	Govt. Institution	4	6	6	2	18
	Others	2	5	1		8
Total		15	20	12	3	50

### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.407 <sup>a</sup>	9	.797
Likelihood Ratio	6.160	9	.724
Linear-by-Linear Association	.333	1	.564
N of Valid Cases	50		

a. 13 cells (81.3%) have expected count less than 5. The minimum expected count is .48.

### Interpretation:

From the above table it is inferred that 70% of the respondents are satisfied with the present security system and majority 36% of the respondents are from Government institution. The chi-square value is 5.407, degree of freedom is 9 and p value is 0.797. The chi-square analysis is tested at 5% level of significance. The sig. value is greater than the level of significance, hence the hypothesis is accepted.

Hence, the nature of place has no significant influence on the level of satisfaction in the present security system

Hypothesis: The nature of place has no significant influence on amount reserved for security system.

The following table shows the chi-square analysis between nature of place and amount reserved for security system.

**Table 21: Chi-Square – Nature of Place vs Amount Reserved for Security**

Crosstab

Count		Amount Reserved for Security			Total
		Rs.25 lac - Rs.35 lac	Rs.36 lac - Rs.45 lac	Rs.46 lac - Rs.55 lac	
Nature of Place	Organization	9			9
	Shopping Mall	12	3		15
	Govt. Institution	15	1	2	18
	Others	7	1		8
Total		43	5	2	50

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.646 <sup>a</sup>	6	.355
Likelihood Ratio	7.792	6	.254
Linear-by-Linear Association	.579	1	.447
N of Valid Cases	50		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .32.

Interpretation:

From the above table it is inferred that 86% of the respondents are reserved Rs.25 lac to Rs.35 lac. The chi-square value is 6.646, degree of freedom is 6 and sig. is 0.355. The sig. value is greater than the level of significance 0.05, hence the hypothesis is accepted.

Hence, the nature of place has no significant influence on amount reserved for security system.

Hypothesis: The nature of place has no significant influence on the opinion regarding the affordability of UVSS.

The following table shows the chi-square analysis between nature of place and affordability of UVSS.

**Table 22: Chi-Square – Nature of Place vs Affordability of UVSS**

**Nature of Place \* Affordable for UVSS Crosstabulation**

Count		Affordable for UVSS			Total
		Below Rs.10 lac	Rs. 10 lac - Rs.15 lac	Above Rs.15 lac	
Nature of Place	Organization	8	1		9
	Shopping Mall	15			15
	Govt. Institution	16	1	1	18
	Others	6		2	8
Total		45	2	3	50

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.796 <sup>a</sup>	6	.035
Likelihood Ratio	8.632	6	.025
Linear-by-Linear Association	2.982	1	.084
N of Valid Cases	50		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .32.

**Interpretation:**

From the above table it is inferred that 90% of the respondents are opined as they are affordable below Rs.10 lac. The chi-square value is 38.796, degree of freedom is 6 and sig. value is 0.035. The sig. value is less than the level of significance 0.05, hence the hypothesis is rejected.

Hence, the nature of place has significant influence on the affordability of UVSS system.

## **CHAPTER 4**

### **FINDINGS, SUGGESTIONS AND CONCLUSION**

#### **FINDINGS:**

1. From the study it was found that 36% of the respondents belong to government institutions.
2. It was found that most of the companies say that the staff and management have not clearly understood the lines of security responsibility.
3. Most of the companies has conducted security surveys in their companies.
4. Most of the companies has not conducted seminars on security and security awareness programs.
5. Most of the companies have not yet developed a security plan and emergency security procedures.
6. Businesses are exposed to various security measures in varying percentages.
7. 40% of the respondents are satisfies with the present security systems in the premises.
8. Most of the companies are not aware of UVSS and its importance.
9. Most of the companies are interested in knowing and understanding more about UVSS.
10. Most of the companies do not believe that UVSS would make their work place a safer one.
11. Most of the companies do not consider UVSS to be a extravaganza rather than a necessity.
12. The amount reserved for security purposes by most companies lies between 25lakhs – 35lakhs.
13. Most of the companies feel that an affordable price of an UVSS should be below 10 lakhs.
14. Most of the companies say yes to semi portable security product rather than a non-portable.

15. Most of the companies say yes for a presentation on UVSS.
16. Most of the companies say that UVSS would be used more often there were financing schemes.
17. Most of the companies say no for an advice forma system's expert to evaluate UVSS.
18. Overall 44% respondents agreed the UVSS related factors, 26.8% are in neutral and 29% disagree.
19. Government institutions agree more to UVSS when compared to other institutions.
20. Nature of place has no significant influence on the level of satisfaction in the present security system.
21. Nature of place has no significant influence on amount reserved for security system.
22. Nature of place has significant influence on the affordability if UVSS systems.

#### **SUGGESTIONS:**

1. From the above said analysis on under vehicle surveillance system and its utilization among its customers the suggestions are, the line of security is not clearly understood by all the companies hence an awareness of the same has to be given to many companies and its professionals.
2. Every company should carry out security surveys in their company to understand the security issues they have to face and the importance of building security.
3. Security awareness programmes, seminars and security procedures and plans are to be framed and followed by all the companies so that the company is in a position to withstand security issues at the time of security crisis.
4. Few companies have already gone into different security measures at varying levels, but still they are posed with security problems, so it is

necessary for the companies to make a wise decision on going with the right security measure.

5. From the analysis it is clear that most of the companies are not aware of the under vehicle surveillance system, hence it is necessary for the company to give an awareness programme for their product and to conduct campaigns in marketing their product highlighting on its features and importance.
6. It is also understood from the analysis that the companies are not ready to invest huge amounts on the security systems hence the product should be marketed with a competitive rate.
7. From the analysis it is understood that most of the companies opt for semi-portable security products and this shows their interest in building a security system for their business, therefore these companies can be approached for marketing the product of UVSS.
8. Most of the companies have shown their willingness to look for a presentation of UVSS, these companies can be approached and a presentation of the product and its highlights and some attractive benefits and reduction in cost can enhance the sales of the product along with an additional benefit of financial supports.
9. From the analysis it is understood that the basic awareness is created, which is reflected through the feedback from respondents as UVSS will enhance the existing security system. So, the company should take more initiatives on awareness to promote the product.
10. As per the chi-square result, the nature of place has significant influence on selection of UVSS product. It is suggested to find out which segment is more influencing and push the product. Need to create more awareness of the product and price of the product should be aligned to Indian market.

**CONCLUSION:**

The study on market potential for Under Vehicle Surveillance Systems (UVSS) in Bangalore City portrays the importance of UVSS as a security measure in an organization. The study also touches upon the existing security measure prevailing in an organization and how they find UVSS in making their work place a safer place.

Especially in this current world situation where there numerous terrorist activities and India as a nation being one of the main target or hot spot for such terrorist activities it calls for more security upgradation as well for more sophisticated technologies for the safety of mankind.

If the market positioning of UVSS is conducted in the right manner along with proper awareness of the product in the form seminars and trainings, there will be more usage of UVSS in most of the organizations in the coming years.

This study reveals that the Government segment is given more response on UVSS and among different type of respondents many of them feels the price of the product is not affordable by them. From this study, we could identify an enough market potential is there in Bengaluru and two things must be considered in this market, which is needed more awareness of the product and price of the product should be aligned to Indian market.



## APPENDIX

### UNDER VEHICLE SURVEILLANCE SYSTEMS

#### Security Questionnaire

This questionnaire is designed primarily

- To discover the level of awareness and acceptability for UVSS among the potential prospects in Southern India
- To identify appropriate market bases for UVSS in South India
- To review the possibility of product and usage adaptability of UVSS in south India,
- To examine the market feasibility of UVSS in India and to propose viable strategies for marketing UVSS in South India.

All information provided in the questionnaire will be treated confidentially.

All questionnaires will be stored securely and will be disposed of securely at the conclusion of the project.

#### (I) General Security questions

1) Who is responsible for security at your facility?

☞ -----

2) Nature of Place

- |                   |                          |               |                          |
|-------------------|--------------------------|---------------|--------------------------|
| Organization      | <input type="checkbox"/> | Shopping Mall | <input type="checkbox"/> |
| Govt. Institution | <input type="checkbox"/> | Others        | <input type="checkbox"/> |

3) Are lines of security responsibility clearly understood by staff and management?

Y  N

4) Has your business:

(A) Conducted security surveys?

Y  N

(B) Conducted seminars on security and security awareness program?

Y  N

(C) Developed a Security Plan and emergency security procedure?

Y  N

5) Please indicate what security measures your business has implemented:

- (A) Security incident reporting and response procedures
- (B) Security risk assessment
- (C) Emergency response plans
- (D) Installation of electronic access control
- (E) Additional security locks and keys
- (F) Purchase of safes/construction of strong rooms
- (G) Installation of steel grills/reinforced doors or facility hardening
- (H) Enhanced vehicle security (e.g. satellite tracking/UVSS)
- (I) Stand-alone security alarm system
- (J) Monitored security alarm system
- (K) Closed circuit television system (CCTV)
- (L) Security Guards
- (M) Security training

Please provide a brief description of any security training provided (initial and recurrent)

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Please describe any other security measures undertaken:

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6).Are you satisfied with the measures your business has undertaken to protect the security and the safety of staff?

Highly Satisfied  Satisfied  Dissatisfied  Highly Dissatisfied

## (II) UNDER VEHICLE SURVEILLANCE SYSTEMS

1) Are you aware of UVSS and its importance?

Y  N

2) Would you be interested in knowing and understanding more about UVSS and its significance as a security measure?

Y  N

3) Do you believe that UVSS would make your work place a safer place?

Y  N

4) Do you consider UVSS to be an extravagance rather than a necessity?

Y  N

5) What is the approximate amount reserved for security in your company's budget?

2500000-3500000  3600000-4500000  4600000-5500000  above

all

6) How much would be an affordable rate at which your company would like UVSS to be installed at your workplace?

1000000  above 1000000  below 1000000

7) Would a semi portable security product be of more avail to your company rather than one non- portable?

Y  N

8) Would your company be open to a presentation on UVSS?

Y  N

9) Do you think that UVSS would be used more often if there were financing schemes for the product?

Y  N

10) Would you like a security systems expert's advise to evaluate the cost efficiency of the UVSS?

Y  N

11) Please state your level of agreeability towards the UVSS product.

<b>LEVEL OF AGREEABILITY</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>DA</b>	<b>SDA</b>
Suitability of UVSS					
Affordable price of the product					
Enhances the Security					
Investment increase the reputation					
Necessary in Future					

Signed on behalf of [Company Name][company sector] by [Name and Title]:

\_\_\_\_\_ (Signature)

\_\_\_/\_\_\_/\_\_\_ (Date)

Contact Information

If you have any queries in relation to this questionnaire please contact

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