

USE OF TECHNOLOGY IN CRIMINAL INVESTIGATION BY POLICE

Written by *Leena Pawar**, *Dr. Anita Taneja*** & *Dr. Bhim Singh****

**Assistant Professor*

***Associate Professor*

****Assistant Professor*

ABSTRACT

Social norms are well defined for every society for the better development of humanity. It is well established under the norms that what is well-being and what is harmful for the society. As, the society develop, so the crime. For maintaining the law, order and social norms in the society, it is essential that one who breaks it and do not follow these should be punished. And for maintaining the law, order and social norms of the society, the society must have a well-established process of detention, investigation and conviction. Police is to investigate; judiciary is to convict the criminals. The purpose of writing this paper is to analyse the use of technology by the police in the investigation process.

INTRODUCTION

The technologies are complex and contradictory; technological advances do not always produce straightforward improvements in communication, cooperation, productivity, while a multisite study of the social, organizational, and behavioural aspects of implementing policing technology job satisfaction, or officer's effectiveness in reducing crime and serving citizens. Desired effects from technology, such as improving clearance rates and reducing crime, may take considerable time to materialize as agencies adapt to new technologies and refine their uses over time. Technology can enhance many aspects of police functioning and performance.¹ Technological helps the modern police investigation system to perform their function effectively. Recent technological advancement like information technology, DNA technology, bullet-resistant vests, mobile data terminal (MDT), Video surveillance system, Drone system, etc. While technological change is a fundamental force in policing that hold a great promise for enhancing the effectiveness, fairness and even legitimacy of police, relatively little research has been done on the impacts of technology in policing beyond technical, efficiency or process evaluations.²

Dr. A.P.J. Abdul Kalam, former President of India, a technocrat also had stated that, *“a technology is definitely an essential element of change in all spheres of life. The human element involved also is an important factor. If technology is properly used, it can bring about tremendous changes for the betterment of life. Any change we contemplate is for speedy justice delivery mechanism keeping in focus the quality, transparency and public accountability.”*³

MEANING OF INVESTIGATION:

In the legal context the word “investigate” means “to follow up step by step by patient inquiry or observation. Dr. Chatterjee in her definition define investigation as to trace or track; to

¹Koper, C. S., Lum C., Willis, J. J., Woods, D. J.: Realizing the potential of technology in policing. A Multi-site study of the social, organizational, and behavioral aspects of implementing policing technologies. (Police Executive Research Forum), George Mason University & Outhern Illinois University, Julie Hibdon, 2015

² Lum, C. (2010): Technology and mythology of progress in American law enforcement, Science Progress (Center for American Progress). Feb. 11, 2010 (<http://www.scienceprogress.org>)

³ Kalam Abdul, A. P. J.: Address during the launch of computerization of courts in National University of Advanced Legal Studies, New Delhi, 9 July, 2007

search into; to examine and inquire into with care and accuracy; to find out by careful inquisition; examination; the taking of evidence; a legal inquiry.⁴

Investigation is the act or process of examining a crime, problem, statement, etc. carefully, especially to discover the truth⁵ and criminal investigation refers to the process of collecting information (or evidence) about a crime in order to determine truth, if a crime has been committed, identify the perpetrator, apprehend the perpetrator and provide evidence to support a conviction in court.⁶

In *Mohammad Ajmal Mohammad Amir Kasab v. State of Maharashtra*⁷ - Hon'ble Supreme Court remarked "we must not forget that the object of criminal law process is to find out the truth and not to shield the accused from the consequences of his wrongdoing." So, for solving such a problem science and technology joined the hand with law to solve such cases. Technology help the law in various ways like in the cases related to information technology, communication technology, medical technology etc.

MEANING OF TECHNOLOGY

Technology is the extension of human's capability in order to satisfy man's need and wants and 'technological development' is the activity aimed to create and perfect new technologies or new products. Technological development includes experimental development and trial production. In Article 2 of the Constitution of the Socialist Republic of Vietnam⁸ the term 'technology' interpreted as is a combination of measures, processes, skills, know-how, implements and means used to turn resources into products.

Technology has had an influence on police practices and assisting in their knowledge work. It has made a dramatic impact on the way we work, we communicate; we entertain ourselves as it surrounds us everywhere we go. Technology has made possible for the people of whole world to communicate anywhere and everywhere without boundaries or borders. As soon as the police get the information that a crime is in progress or police get the crime reported the investigation process of police begins. Different technology used by police for investigation.

⁴ Cambridge Advanced Learner's Dictionary & Thesaurus, 3rd ed. 1995

⁵ Chatterjee, Ishita. (2015): Law of Forensic Science, 1st edn. Pg.71

⁶ Encyclopedia of Crime and Justice Police, Police: Criminal Investigations, 2002

⁷ AIR 2012 SC 3566

⁸ Law on Science and Technology No. 21/2000/QH10 dated 9th June, 2000 by the National Congress, Session X

Police while doing the investigation of case take the pictures of site evidences; write a report of the witnesses who are present on the crime scene.

SOME OF THE TECHNOLOGIES USED BY THE POLICE IN INVESTIGATION PROCESS

The new technological innovations have been developed by which the performance of police is improved and crime is prevented. The crime is increasing day by day with the increase in the complexity of the civilization. Boundary of crime goes beyond the national to the international level. For the prevention of crime police surveillance is must and the technology helps the police in this process. Some of the technologies used by police in investigation are:

INFORMATION TECHNOLOGY (IT)

With the development in the society, human needs the protection of his and his property and for the proper working of social system needs some organization to help as he himself can't do this, so there is a police organisation. Police organisation has always been considered as a vital arm of the state. In a democratic system, like India, maintenance of law and order is perceived as the milestone as it is must for regulating the multi-ethnic, multi –cultural society. For this purpose, police needs technological help. Information and communication technology improve effectiveness and efficiency, capacity to store and process large volumes of data, improves intelligence and investigative capabilities and make ready access to criminal records and other kinds of relevant data. With the introduction of Information and Communication Technologies, there are rapid changes in the way the public interact. Criminal are using this technology with the criminal intention as the crime related to pornography, sex crimes, cybercrimes, hacking etc. are raised and with the same technology police can easy and quick access to the crime scene, have the full knowledge of suspect, and any other information which are transferred from one branch to another.

Information technology (IT) is term used for a host of technologies, to gather retrieve process, analyze and transmit information processes. These functions are carried on by various exiting soft and hard technology. With the adoption of technology, crime prevention and detection has

helped the investigation process and obtained significant results. It is evident that there is a motive to prevent crime, but it will produce effective results only if this communication technology is used with certain strategies.⁹

The strategies include the getting of information and sharing knowledge at proper time which lie at the heart of most law enforcement activities. A police officer must rely on information, gathered facts and tacit knowledge developed from street experience in order to draw conclusions. Sharing this knowledge effectively is now recognized as critical to effective crime prevention, reduction and investigation strategies.¹⁰

The technology is used to support policing in several ways, such as database systems to record crime details and geographic information systems to profile the characteristics of local policing environments, crime patterns and police performance to provide increased intelligence as found in Ashby & Longley's study (2005).¹¹

Similarly, a research survey of 506 Australian police officers by Chan (2001) identified that 72 % of them felt that information technology had made a great difference to police work and provided 'the capacity to follow a more problem-oriented style of policing'. Brown and Brudney (2003) concur that the effects of IT are favourable with regards to enabling benefits of a learning organisation, and improving policing problem- solving abilities.¹²

DNA FINGERPRINTING

DNA is the abbreviation for deoxyribonucleic acid, which is the genetic material, which is not only present in cells of all living organism but also in almost every cell of human body such as blood, semen, urine saliva, hair etc. The order in which the four nucleotides fall along the strand of DNA varies.

DNA is the coded message of hereditary in every living thing. A human gene consists of 23 chromosomes, in a set of 23 chromosomes total number of nucleotides is about 3 billion. The genetic code itself is spelled out in strings of nucleotides of four types known as adenine (A), cytosine (C), guanine (G) and thymine (T).

⁹Worrall, L.J. & Schmallegger, F., Policing USA: Pearson Education Inc. (2013) & Parveen, R. Policing in India: Technology and Crime Prevention Social Science and Humanity Journal (2013).

¹⁰ Gottschalk, (2007): Information systems in police knowledge management. *Electronic Government: An International Journal*, b, 4, (2) Pp. 193

¹¹ Lindsay, R., Cooke, L., & Jackson, T., (2009): The Impact of mobile technology on a UK police force and their knowledge sharing Institutional Repository; Loughborough University.

¹² *Ibid*

Sir, Alec Jeffreys, of UK in 1984 discovered that no people could have the same DNA sequence or we can say that every individual has a unique DNA sequence. This uniqueness of DNA evidence makes it a powerful tool in criminal investigation, because of each person's DNA is unique except monozygotic twins.

Molecular biologist has developed a technique in which the DNA is examined and mapped to determine the sequencing of nucleotides polymerase chain reaction (PCR), Restriction Fragment Length Polymorphisms (RFLP) as a tool in personal identification and this method for identification is called DNA fingerprinting, which is the foremost and most reliable technology.

In recent days, criminals use science and technology to their advantage in committing crimes. As a result, investigating officers, also are required to possess scientific and technology tools to investigate these crimes. Forensic science comes to their rescue by introducing DNA technology in the legal system.

This technique is used by police in criminal cases like rape, murder and many more as there is always the possibility of having DNA evidence at the crime scene as DNA is found in almost every cell of the body. So, the investigating teams rely on the DNA fingerprinting to match the DNA found at the crime scene with those of suspects. This helps the investigating team to catch the criminal and let it be convicted and also to exonerate people who are innocent. Biological samples are collected from crime scenes by the police and sent to the laboratory for the analysis by the experts. Then this DNA profile is compared with DNA profiles of all suspects to find out which one it comes from.

MOBILE DATA TERMINAL (MDT)

The mobile data terminal (MDT) is a ruggedized mobile laptop built to suit the needs of a tough policing environment. It has a reliable wireless connection for accessing information remotely.¹³ Which were previously available only through the dispatcher or provided only when requested by the responding patrol officer also changes the character of reactive patrol work.¹⁴ MDT's provide officers access to information in national, state, and local database from

¹³ Lindsay, R., Cooke, L., and Jackson, T (2009): The Impact of mobile technology on a UK police force and their knowledge sharing, J. Info. Know.Mgmt. 08, 101& Panasonic (2008) "Law enforcement mobile data solutions", Loughborough University Institutional Repository; Loughborough University, Aug. 24, 2009 (<http://www.panasonic.com>)

¹⁴ Wikipedia: Last edited on April 28, 2017, (<http://en.wikipedia.org/wiki/Mol>)

their patrol car. The criminal and traffic violation history on motor vehicles and drivers is available to determine if there are any outstanding arrest warrants and/or tickets. If they are on probation or parole, the terms and conditions are listed. The access of officers to criminal history information and current court status of persons who they locate at the scene of a call or traffic stop is greatly increased by MDT's.

A mobile data terminal (MDT) features a screen on which to view information and a keyboard or keypad for entering information, and may be connected to various peripheral devices. Standard peripherals include two-way radios and taximeters, both of which predate computer assisted dispatching.¹⁵

Manning (1997) notes that the introduction of two-way radios and mobile data terminals into patrol cars. The technology has increased the capacity to respond to crimes and also the officers get the additional information directly on their MDT's.

Earlier most of the work is paper-based which resulted in a loss of real-time intelligence. MDT technology has granted police team to have timely, detailed information of the facts. MDT provides a new avenue for keeping each other up-to-date with events.

VIDEO SURVEILLANCE AND CLOSED-CIRCUIT TELEVISION (CCTV)

Cameras are for taking still photographs and making of audio or video recordings of the moments, which we want to be remembered and kept as a memory forever. The technology develops, man's standard of living and comfort of life and also for the betterment of humanity but criminals use it for their criminal instincts.

Businessman, government entities and private citizens put the video security system or CCTV cameras at their home, offices or places of work. Cameras are also found in airports, convenience stores, public roadways, ATMs, bus, railway stations, schools, banks etc. Each and every inside and outside activity of the area on these places are captured in video by these cameras.

But, the criminals used it for conducting illegal activities like capturing one's private moments, recording of child pornography. Conducting surveillance with criminal intention like for theft

¹⁵ Supra at 13.

purpose, robbery, kidnapping etc. Criminals used for creating a threat in between public like what an ISIS group or Bagdadi these days do for creating a fear, record their criminal activities. These video recordings captured by CCTV are used as electronic evidence helps the police in investigation of case. The information that can be obtained from these cameras includes the presence of subjects, vehicle's license plate information, commission of the crime, activities of the subject, timeline of events, and identity of criminals.¹⁵

TABLETS AND SMARTPHONES

Nowadays, peoples are often seeing busy on tablets or Smartphone's. Always chatting or watching (jumping) on Facebook, WhatsApp, watching videos on YouTube. These technologies are also used by criminals and also gaining steam as a crime - fighting tool.

Mobile and wireless devices help the police organisation to conduct their operations more efficiently and effectively. The relevance of mobile technologies to police task relate to timely access to accurate information, reduces administrative work for police officers, improved communication and quick retrieval and transmission of relevant information. Information is crucial to police officers in carrying out their daily duties, and police organisations are 'intelligence-led' and information – intensive.¹⁶

For documenting evidence, Smartphone or tablet can be useful for as by using the device video camera police can document a scene or record witness interviews. An officer can gather documents and, which can be more court-worthy evidence to the judiciary in giving correct decision.

Phones and tablets can hold information for officers in the field and function as a quick resource guide. It can be used to access PDF versions of crime codes and vehicle code books or look up information on drugs found on individuals.¹⁷

¹⁶ Bouwman, H., Wijngaert. L., De V. H., 'Mobile Applications for Police Officers', Proceedings of 21st Bled eConference eCollaboration: Overcoming Boundaries through Multi-Channel Interaction, June 15-18, Bled Slononia, Pp 78-90

¹⁷ Why cops can't live without their mobile devices, Police One Academy, Feb11, 2016 (PoliceOne.com)

GLOBAL POSITIONING SYSTEM (GPS)

Global positioning system (GPS) “is a satellite based technology that reveals information about the location, speed and direction of targeted subject. GPS system is now the primary means of navigation. It is the space segment consists of 24 satellites in medium earth orbit (MEO) at a normal altitude of 20200 kms with an orbital inclination of 55 degrees.”¹⁸

Global positioning system (GPS) as it revolutionized navigation and position location, so it helps the police by pinpointing the location of call, determining the fastest and safest route to it. Whenever the police got the information of the crime and people want the help, by the use of this technology police can quickly and timely reach the scene of crime. To the criminal justice agencies, GPS technology offers numerous benefits, as the navigational capabilities offered by GPS enhance their work efficiency.

This technology provides to police officers a wide variety of analytical capabilities and resource management information. The United States Coast Guard defines GPS as “a satellite-based radio- navigation system.”¹⁹

GPS system helps the investigating team in doing the job with safely and efficiently. If at any place crime is in process and information is given to the police, police with the use of GPS system can reach the crime scene within time. As GPS system guides them to the exact location where their assistance is needed. It revolutionized the way in which the police department is conducting its duties.

DRONES:

Drones are unmanned aerial vehicles (UAVs) that are remote controlled. Drones can be equipped with various pieces of equipment, such as daytime video recorders, low visibility surveillance video, live feed cameras, radar sensors, digital cameras, radio equipment, infrared cameras, sound recorders, laser scanners, and thermal imaging and GPS equipment.

Drones can help patrol in ways and areas that police officers simply cannot. They can provide real-time information to police dispatchers to crime analysts so that officers can get vital information about crimes in progress and dangerous situations, as they unfold.²⁰

¹⁸ Jaseja, H., Global Positioning System: Effective Tool In Protection of Women’s Dignity, 2010, Webmed Central, Sept., 2010 (<https://www.webmedcentral.com>.)

¹⁹ Jaishankar, K., “Role of Global Positioning System (GPS) in policing, Geospatial World, Sept.1, 2009

²⁰ Roufa, T., “Technologies That Are Changing The Way Police Do Business: How Technological Advancement Shape Criminal Justice Professions” 2014.

North Dakota is the first state to legally allow drone use in the police, as a bill allows for non-lethal drone use.²¹ During riots in Trilokpuri in 2014, Delhi Police used drones to keep an eye on potential troublemakers and their stockpile of bricks and stones. Drones flew over the locality and helped the police spot and seize a huge cache of bricks, sticks and bottles hidden in several places.²²

Karnataka police become one of the first police departments in the country to own a UAV fleet, with the procurement of 12 drones last month. Karnataka police along the Karnataka- Andhra Pradesh border used the UAVs technology which has night vision capability to detect sand mining.²³

By the use of drone technology police can capture video and images of crimes as they occur or of place where crime is going to be committed, and this help them to make better plan responses and save lives.

Drones are more popular among law enforcement than any other type of public safety agency. Drone technology helps the police or law enforcement agencies to find the suspects and to solve the crimes like in Maryland, a sheriff's office used a drone to find \$400,000 worth of stolen construction equipment.²⁴

For improving their ability to enforce the law and protect lives police department can deploy drones. By the use of drones all the valuable resources like time, tax and dollars or Rupees are saved. Police can use it for the analysis of crime and traffic accidents as there is the requirement of highly trained crew of forensic experts for the crime and accident scene documentation. As the exact crime scene documentation is necessary for further investigation for this there is the need of crime scene photographers. Drones can reduce the photographer time as the drone can fly over the accident or crime scene to capture images and this help the analyst to analyse the accident on a computer. Surveillance is the police common activity in which drones help the police to see places and things easily.

During the events like concerts, parades, sporting or culture events police work is to monitor and control the crowd, which is expensive and need a large police force. In these events by the

²¹ Reese, H., "Police are now using drones to apprehend suspects and administer non-lethal force: A police chief weighs in, 2015 (TechRepublic., www.techrepublic.com)

²² Singh, A., "Delhi Police work on SOP for use of drones". Jan. 25, 2016 (www.indianexpress.com)

²³ Devi, A., "Karnataka police first to own, operate drone fleet". May 9,2016 (The Times Of India City, the Times Of India) www.timesofindia.indiatimes.com

²⁴ Police departments are using drones to find and chase down suspects; April Claser, 2017 (<https://www.recode.net>)

use of drone police can easily monitor the crowds and areas where there are security concerns. Drones can zoom to areas of interest giving agents the ability to remotely assess a threat, such as a suspicious package. By the use of vital information provided by drones while crowd-monitoring, police can quickly take a critical decision and can control the situation by taking necessary action.

CONCLUSION

For maintaining the law and order in the society, we need the well-established police system. Whenever any crime is committed it is the police who come first on the scene to investigate the case which help the judiciary to convict the criminal and to acquit the innocent. Police is needed to control the situation whenever there is riot, to help the public whenever they needed, so for that it is necessary that police must do their work more efficiently. Modern technology like MDT, Global Positioning Technology (GPS), and Drones helps the police in getting the exact position and knowledge of the crime scene. And technologies like DNA fingerprinting, information technology, Video Surveillance and Closed-Circuit Television (CCTV), Smart phones etc. helps the police during the investigation of the case, to reach the criminal. Technology has had a great impact on police work and practices by assisting in their knowledge.