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Original Research Article

Impact of emerging technology on recent criminal scenario

Reeta R Gupta^{1,*}, Asha Srivastava¹¹Central Forensic Science Laboratory, Lodi Road, New Delhi, India

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ABSTRACT

Today the world is fully acknowledged by the digital Technology with a constant dependency of staying connected with everything. In this era of world and after the world experiencing covid pandemic, a new dimension of use of digital/ cyber technology and digitalization in all area including home to office work in day-to-day life emerged with broad spectrum. Technology has given a significant contribution in societal change with digital world in all aspects such as the medical instruments used in surgical treatment of various cardiac, pulmonary diseases orthopedic as well as carcinogenic diseases; cellular connectivity with accuracy & consistency and timeless feasibility of data transfer and money transactions from one hand to another hand. With advancement of technology on a daily basis a significant impact can be seen on the society. This also creates a major impact on the current criminal scenario as well as it has imposed new challenges in the criminal justice system. The present research article is based on the recent case study encountered by the experts in forensic science which will be discuss in detail with their own experiences during presentation.

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1. Introduction

Today the world is fully acknowledged by the digital Technology with a constant dependency of staying connected with everything. After the recent exposure of the world with the covid pandemic, a new dimension has emerged in today's use of digital/ cyber technology and digitalization in all area including home to office work in day-to-day life. Technology has played a significant role in contributing to the societal change. The utilization of technology by people at large on one hand are facilitated, however in other term technology is also providing antisocial elements/criminals a very pleasant platform with new ways of intrusion and frauds like: ATMs, Credit/Debit card forgery, etc. With large use of digital forms, computer and cellular technologies have increased the capacity of data

storage, rapidly processing information with low latency data sharing and communications within and across the organizations/agencies/state/countries. With advancement of technology on a daily basis a significant impact can be seen in the society. For instance, a new technology is introduced in society and while people are getting adapted with it and it isn't yet fully spread, another novel technology is further introduced which primarily causes chaos in learning the technology for common man however the criminal/antisocial elements are more rapidly upgrading themselves with latest one and misusing these technologies for their own benefit and thus results in making people vulnerable to Cyber Crime and people are getting affected by cyber fraud. This also creates a major impact on the current criminal Scenario as well as it has imposed new challenges in the criminal justice system. Over the past decade, evidences that identity crimes are increasingly exponentially and cause substantive economic harm. In fact,

* Corresponding author.

E-mail address: reetacbi@gmail.com (R. R. Gupta).

one of the most commonly reported forms of cybercrime are forms of cyber-deception and theft which is known as fraud. As a society, we have increasingly come to the internet and computer technology to manage virtually every aspect of our financial lives. This has facilitated us to track expenses and monitor our purchases in near real time.^{1,2} The present research article is based on the study of impact of recent developmental technology on criminal justice system as well as scenario of critical cases encountered by the experts of forensic science.

2. Overview

The criminal scenario is a major concern in context with the overall development of the digital technology and its utilization by the criminals. As we all know that cybercrime is a crime involving a computer or computer network. The computer may have been used in committing the crime, or it may be the target.^{2,3} Cybercrime may harm someone's security or finances. In India, cyber-crimes are covered by the Information Technology Act, 2000 and the Indian Penal Code, 1860. It is the Information Technology Act, 2000, which deals with issues related to cyber-crimes and electronic commerce. The cases related with the cyber-crime is governed by the current cyber law. Awareness among the user of digital technology is also enhanced in many folds register the case in country. Enhancement of registered cyber-crime cases and disposal of these cases within time bound period is a big challenge to the forensic scientist. The fraud did by manipulating computer network, unauthorized access to or modification of data or application is very easy by using modern computerised system. Digitally distributing child pornography and writing or spreading computer viruses or malware cases are enhanced on day-to-day basis.

The common personal self-respect, self-reliance and self-restrain are under challenge in this developing technological transition phase of the modern society. Development of drone technology and gradual enhancement in make and model as well as its multiple purpose of use in medical surgery, in official security surveillances and friendly use by the common people is bringing up a new challenge to maintain the secrecy and privacy of common man and commission of crime both. Not only drone camera, the body cameras to GPS tagging system and thermal imaging technology have been changing the law enforcement landscapes as it creates the responsibility of public safety from crime. Other technological development issues such as use of darknet, crypto-currency transaction, detection of malware also enhances day to day cyber-crime. The change in human behavior has been also notice during the covid-19 pandemic in society. One of the biggest challenges was how to keep human beings safe from outbreak of covid-19 infection and other challenges were excessive use of digital and technological mode from food to medicine and daily

demand of providing education through online classroom teaching. Even the overall connectivity around the world in the pandemic was made possible through internet for meeting the daily need of living beings. People were bound to live in isolation so as to break the chain of infection of Covid-19. Every isolated person was dependent on the mobile phone and internet since meeting would increase the chances of spread of covid-19. The use of different platform of social media also has rapidly increased after the pandemic. Due to extensive use of internet, it has led people to be more vulnerable to cyber fraud. By these circumstances the cybercrime is also enhanced not only on national level, but remarkably increase in the graph at global level.

3. Current Scenario of Digital Forensic and the Future of Data

Cybercrime is defined as an unlawful action against any person using a computer, its systems, and its online by using computer or offline applications by any mean. It occurs when information technology is used to commit an offense. Any crime commission comes under the cyber-crime act, is only considered Cybercrime if it is intentional and not accidental. Development in technology is playing an important role from past to the current criminal scenario. This changing scenario shows that how common people without knowing anything are more vulnerable to the criminal incident and get tagged with the same. On other hand they are deeply influenced by the technological development without detailed knowledge of the same and making them the very first user of recent technological instruments as well as duplicate/ pirated software. The Police force and other law enforcement agencies in contemporary society are dealing with both the traditional as well as modern technological crime. The same is a big challenge for the forensic expert as well as investigating agencies to understand the make and model of all novel technological development to solve such high-tech crimes. The discussion and deliberations given in this paper is based on the criminal cases received in the office of the Central Forensic Science Laboratory, New Delhi^{4,5} and also the challenges faced by the Forensic Experts in solving these new trends of criminal cases. Digital development and its application can be seen in each field, either in forensic case or it court testimony procedure. Nowadays, courts are using more advance approaches for disposal of cases through video-conferencing mode by witness.

During covid pandemic we were forced to use digital as medium for transactions, interactions, office works and educational purposes. As a result, large number of people are using the technologies to enhance their work efficiency in education services and other mean of requirement. Many people weren't aware of the proper use and applications of digital transactions, yet they had to use it as a medium. Due

to this, data of many people were inadvertently shared to miscellaneous antisocial elements. The child sexual abuse, unfair mean of romantic relationship or flirt with others through cyber technology uses increases. In recent years, variety of new cases with difference in queries to answer were received in forensic laboratories. Cyberbullying is one of the prominent concerns issues of this modern society. In general, the children are more vulnerable to the cyberbullying due to increase use of technology in their daily life for online education system. In fact, cyberbullying may be defined as any intentional aggressive behavior performed through electronic means (Hinduja and Patchin, 2008).⁶⁻⁸ This became a big challenge for the criminal justice system as well as forensic scientist as with change in the use of technology by antisocial elements, there had to be change in approach to solve and trace the committed crime by the forensic scientists and thus represent the forensic evidences before the court.

4. New Trend in Cases of Forgery and Fraud-A Detail Study

Cybersecurity, artificial intelligence, blockchain, cloud computing, and the IOT (internet of the things) are those trends that are being dominant in recent decades and also have become new trend initiated in covid-19 outbreak. These technologies have already entered various levels of economy from rural to urban. New technology is an easy source for criminals to do illegal activities with new methods of intrusion into ATMs and similar other digital systems. The attackers use this access to control the ATM's operating system and force it to dispense cash. It is an essential requirement for all intellectual investigating officers, court officers, judicial officers those who are in making law as a deterrent and investigating agencies on which the major responsibility lies to maintain law and order for safe as well as peace of the society and so as to develop a sense of logical understanding in all aspects of developments as technology as a user.^{9,10} These general understanding can make a significant contribution in increasing the accuracy, consistency and timeliness of legislation, as well as in promoting its public availability. This may also help and be useful for criminal justice systems as in presentation of forensic evidential proof with reliable data in court of law. Novel machines/equipment's, their connectivity with computers and cellular technologies have increased the capacity of data processing, information sharing, and communications within and across agencies at global level. This must have a good impact on criminal justice system in delivering judicious justice. The increasing societal dependence on the Internet/cyber space and computer-mediated communications have led law enforcement to develop tools to better investigate offenses online. In order to understand the development of criminal activities in term of digital impact on criminal justice system

it is must for all of us to get update with the latest advance technology prior to using the technological tools. This is urgent demand of the time to update of recent technological knowledge by forensic scientist is must to solve recent criminal cases.

5. Discussion

Covid-19 and its long-time struggle within human race for survival has changed the functional aspects of society. It has caused fundamental shift in social attitude and beliefs of human beings. Due to the impact the covid-19, the society had to develop new policies, change in way of working, primarily adoption of work from home, etc. for which the tremendous use of digital facilities for important purposes such as mode of payment, online platform utilization, E-learning education system, social media, E-banking and essential elementary requirement of internet and cyber space for all. The impact of these technological development is also on the working of criminal justice system.

Nowadays, the court evidences are being conducted through video- conferencing mode and any person far away or cannot physically attend the court are using this method. The technological development encourages the sharing of information which are exclusively available with court and are recorded by peer-to-peer assistance. The world of computer forensic is rapidly growing with the involvement of a very large number of computer professionals in order to meet the needs for solving the large number of novel criminal cases. Admissibility and appreciation of the evidences by forensic experts is the most significant factor while tendering court evidences. The well presentation of evidential data by any forensic expert not only helps in administration of justice but it also enhances the reliability and credibility of the presentation given by the experts.

6. Results

Advancement in technology is making significant impact on the working of every section including criminal justice system which can be apparently seen. Adaptation of any novel technology is good but its acceptance with proper ethical validation is must in society. People are getting adapted with novel technological tools without understanding the impacts, not only on them, but also around them in the society. The criminal/antisocial elements are more rapidly upgrading themselves with latest tools and are trying their best at misusing these technologies for their own benefit. Thus, resultant of these illegal activities is making people vulnerable to cyber-crime and they are getting trapped in Cyber fraud.

Today, the constant requirement of connecting with internet has become a necessary need in our society, but the deterrent has been enforced by the law enforcement agencies towards stopping these unethical antisocial

elements by making new laws & policies for Cyber Crimes as well as making sure of their implementation and awareness among users before using of these novel technologies with better understanding. Thus, this has provided a safe zone to all common users. Everyone in the society is required to adopt to more advance technologies and get known to the knowledge of these technologies, so that the criminal incidents with application of advance tool and techniques can be prevented or stopped. It is also required to develop a system for more awareness in the society to minimize the criminal activities in the modern society. Although the response from the criminal justice functionaries and the financial sector to prevent and address these financial crimes has improved greatly at many folds.

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8. Conflict of Interest

None.

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Author biography

Reeta R Gupta, Assistant Director CFSL Government Of India
 <https://orcid.org/0000-0001-8546-9841>

Asha Srivastava, I/c Director CFSL Government of India

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