



Legal implications of emerging technologies: A doctrinal analysis in Indian law

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Abstract

This paper has been designed and structured to analysis the relationship between the emerging technology and the law which Include different facets of law and technologies. The paper has taken into the consideration the development and advancement in scientific knowledge and discoveries which have great impact on different aspects of modern life, life style and livelihood which relates to issues like role of state, functional aspects of law. More over this paper deals with various new concepts which have developed and evolved over the passage of time keeping pace with scientific discoveries and innovation and inventions which paved the way through the anal of human history. This paper has been structured and formulated to aid the study and to analysis the complex matrix between law and technology, give a Deep insight as how the emerging technologies are being used and how far it is used in the investigation of a crime and how far and at what degree law accepts and mandates the usage of emerging technology in the due process of law aiming to deliver justice which not only encompasses punitive justice but also some of the rights of common.

Keywords: Data privacy, right to privacy, intellectual property, polygraph, brain mapping, artificial intelligence, self incrimination, forensic science, data protection, consumer protection

Introduction

Technology is a terminology which defines the practical working and operation of scientific knowledge and innovation.

Let us examine the path of technology from the anal of history.

So, let us go through the chapters of past which will reveal some of the dynamic growth of the technology, the history of the wheel which remains a classic example, at the inception the wheel when surfaced on the human society through the admiration worthy creative hand of human at Mesopotamia was a solid wooden dish wheel and gradually the wheel developed into what is today making the speed of our lives from fast to the fastest and moreover it is needful to state that the wheel is not only now limited to transportation and communication sector but it has extended its tentacles to various sector if all the sector are to be noted here it will open different area of discussion and research, only for the current topic I am taking the example of turbine which is the main component of hydro electric project.

Another example is the pen when human started to write it was a sharp edge of stone which was used to scribe on the walls of cave from then it developed to feather and gradually todays pen.

So, it is very clear that technology is ever growing in character.

Now let us begin our discussion on topic:” Emerging Technology and Law “. The “Emerging Technology” word itself denotes an idea of dynamicity, evolution, changing, and flexible character of the technology which we have already taken the glimpse of it. Now we will see the characteritics of law, law is settled rules and regulation having the mandate and sanction from the state but in modern times with happening and ongoing process of globalization and regionalization and liberalization the concept of the sanctioning and mandating authority went under broadening, now sanctioning authority has widened it includes state, regional organization like ASEAN, SAARC,

EU and international organization like UNO, WTO, ILO. Now we have seen that in definition of law the concept of sanctioning authority has underwent a broad o change due to economic, political, cultural restructuring of the world. so, there is a need of the hour to draw a detailed map depicting the relationship between technology and law and trace the gap between the law and the technology and possible efforts and initiatives and attempts should be made to minimize the degree of divergence and the point of convergence should be in search. Let us carry discussion keeping the above discussion at backdrop, now if we start to find the purpose of law we will see that governance aspect of has been drawn on sociological line. Firstly, if we see the purpose of law drawn by scholar Justice Roscoe Pound is “SOCIAL ENGINEERING” this mean that law has been purposed with aim to bring about reforms and restructure the society through imposition of law and also through creating a mind of change among the people.

Secondly if we seen the concept of utilitarianism of Jeremy Bentham we see that law is for the greatest benefit to the greatest number.

Thus, it very crystal clear that law should also be dynamic and flexible in character alike technology and both law and technology are aimed for benefit of the mankind. In other word it can be encapsulated that law and technology is for human, but human is not for law and technology so both law and technology should be tailored in way that the convergence point should be reached so that it aids the justice delivering system.

Converge or Diverge: Gap Between Technology and law

The topic which been at table for discussion, analyzing and research is “Legal Implication of Emerging Technology “. The topic has dealt and made an honest effort to sketch a vivid picture of ground realty of the complex matrix of technology and law in doing so I have reviewed various available authorative literature which has created by various scholars which is available in my literature review in a

tabular format. To go into the deep insight of title of this chapter I have relied on the chapter 2 titled “The Growing Gap Between Emerging Technologies and Law “of the book “THE GROWING GAP BETWEEN EMERGING TECHNOLOGIES AND LEGAL ETHICAL OVERSIGHT: THE PACING PROBLEM “. In the second chapter which been written by GARYE MARCHANT has beautifully depicted a picture of ground reality of conjunction of law and technology through the usage of colours of vocabulary. In this piece of literature author has authored to show the necessity for the legislature to more dynamic and bolder enough to craft a legislation to decrease the pacing problem between emerging technology and the law. I would like to quote the quotation used by GARYE MARCHANT in the beginning of his writing, he quoted Issa Asimov “It is change, Continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made. Any longer without taking into account not only the world as it is, but the world as it will be”. I found this is the only answer to the question what is need for to make an alliance between law and technology.

Furthermore, GARYE MARCHANT went on saying that there is two ways through which the present ever-growing gap between technology and law can be reduced first he suggested that to stop the technological growth and second one to change the existing legislations to accommodate technological growth in order to make proper use of it. In reasonable mind the second is acceptable because the first is total denial of the scientific knowledge which will connote and represent an unreasonable mind.

There is another political thinker who had propagated the theory of the change is a constant phenomenon i. e. Karl Marx who said that change is inevitable and constant through double negation theory. The Double negation theory suggest that present situation i. e. Thesis is challenged by new ideas and thoughts i. e. Anti Thesis and resultant are Synthesis i. e. new system is evolved again this becomes thesis which is been challenged by new ideas and this goes on.

Thus, it can be inferred that a change can be combated through change only.

Scientific Technique and Justice Delivery System Criminal justice

In chapter one we have seen at length how there is continuous and persisting gap between the technology and the law, now in this chapter we will see why the gap has been created and what is the consequential effect on the system of delivering justice.

we all know that the investigation agency is primary organization who are engaged in the work of collecting and gathering evidence and identifying the suspect. In doing so nowadays the investigation agencies take resort of many technologies but in this context, it is meaningful to state that agencies are not in free hand to use the technologies because they barred by some existing laws. The following technologies which are often use in dispensing the criminal justice.

a. Brain Mapping: The Brain Mapping test is also known as P-300 Test. It is a bunch or a set of neuro science techniques predicted on the mapping of biological quantities or properties onto spatial representation of the (human or non-human) brain resulting in maps. According to the definition established in 2013 by

society for Brain Mapping and Therapeutics, Brain Mapping is a specially defined in summary as the study of the anatomy and function of the brain and spinal cord through the use of imaging, immuohistochemistry, molecular and opto genetics, stemcell and cellair biology, engineering, neurophysiology and nano technology.

In India Supreme Court of India, apex court of the country in the year 2010 held that the forceful application of the brain mapping would result in the violation of the fundamental right of the accused I. e. self incrimination (a person cannot be compelled to be witness against himself) and the right of privacy which is enshrined in the article 21 impliedly in the word “Right to life and Personal liberty”.

b. Polygraph: It is a process which has been in practice in medical science for the purpose of the comprehensive study of the functioning of different body system with particular reference to the circulation, respiration, and peripheral nervous response. This Technology has been tried to make it use in forensic process. Now legal status of the polygraph test is to be examined.

The National Human Right Commission of India has issued some guideline on the administration of poly graph test: -

1. No poly graph or lie detector should be administered without the consent of the accused.
2. Option should be given to the accused as to whether he wishes to avail the test.
3. If the accuse volunteers for the test, he should be given access to the lawyer.
4. The police and the lawyer should explain the physical, emotional and legal implication of such test to him.
5. The consent should be recorded before the judicial magistrate.
6. During the hearing before the magistrate, accused should be duly represented by a lawyer.
7. At the hearing, person should also be told in clear terms that the statement that is made shall not be “confessional” statement to the magistrate but will have the status of statement made to the police.
8. The Magistrate shall consider all factors relating to the detention including the length of the detention and the nature of the interrogation.
9. The actual recording of the lie detector shall be done in an independent agency (such as hospital) and conducted in the presence of a lawyer.
10. A full medical and factual narration of the manner of the manner of information received must be taken on record.

These guideline are strictly followed in india as there is no specific formulated laws which will regulate the working of the poly graph test or lie detector test.

c. DNA Mapping: It is the most trustworthy tools in the world of the forensic science which can aid the investigation procedure and lead to more accurate results. DNA is an initial for sugar moiety DNA molecule. It is a natural matter present in all living tissues which creates a different genetic signature. DNA might be collected from different parts of the body such as hair, teeth, blood, pollen, semen, tissue and many more. This DNA is often used to identify the culprit.

- d. Narco Analysis is another scientific measure which is also called Truth Serum Test. It is a kind of psychotherapy and effective means to scientific investigation. In the procedure of narco analysis, a drug like sodium amytal is used as truth drug on the suspect for the determination of the suspect. The other drug is secenal, hyosine, sodium pentothal, Phenobarbital. But this technique did not get the legal mandate due to bar created by the right of self incrimination.
- e. Medical Examination of the rape victim and the accused are now compulsion under the law of the land. Even the autopsy and vicera are under the legal mandate.

After having an account of all the scientific measures which can be or some are already in operation to pave the way for scientific investigation. but there is some question which are waiting in queue for to be addressed and answered which are as follows:

1. Why the consent of accused to be needed for the brain mapping and lie detector in the garb of protecting the right of self incrimination?
2. Why the path of investigation should depend on will of the accused?
3. When the law permits to find the cause of death, then what is wrong to find the person who is responsible for making the cause of death to happen through brain mapping, polygraph, narco analysis?

Emerging Technology: Data Privacy and Data Protection

Emerging Technology have inaugurated an era of Data based world. The data-based world means world which revolves on the framework of data. All the transaction and business relation are carried on the basis of data. Every organization has data base bank which is created on the basis of the data collected from its clients. If we see around we will see how all the transaction and business communication and interaction are made through the data base from the online shopping apps like amazon, flipkart and many more when we first install these apps it requires us to give all our details and on these given details all the transaction are done in future. If we refresh our memory we can recall about ten years back all the bank made compulsory for all its customer to fill up the KYC FORM (KNOW YOUR CUSTOMER FORM) in these ways it had collected all the information of its customer and in recent times aadhar card and pan card is compulsory for the bank to open the account. Moreover, now our PAN CARD AND AADHAR CARD is linked so it is feasible for the government to create a complete data bank of its citizen. But even though we could reach to create a well defined and complete data bank but there is no guarantee from the government whether data banks are well protected and full proof from the prey of fraudster. This is why most of the time data are leaked and common people fall into the net of fraudster and suffer huge losses. This data base world has given birth to a new right data privacy which has become an item in top priority list of government. Moreover, the data privacy has become a right under the umbrella of human rights, article 12 of Universal Declaration of Human Right states "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attach upon his honour and reputation. Everyone has the

right to the protection of law against such interference or attack."

In India Supreme Court of India held that right to privacy is part of the right to "protection of life and personal liberty guaranteed under article 21 charka singh versus state of uttar Pradesh. Moreover, the apex court held that right to privacy is a right to be alone.

Now we come to the discussion regarding right to data privacy, keeping in mind the concept of privacy. If we see the character of fundamental right of the European Union they're in article 8 it has recognized right to the protection of personal data as a fundamental right.

Just for better and more accurate understanding I would like to begin a brief journey on European Union's PRESCIENT (Privacy and Emerging Science and Technologies: Toward A Common FrameWork) project. This project has addressed four major areas which are as follows:

1. The Legal, Social, Economic, and ethical dimension of privacy.
2. Privacy and Ethical implication of emerging technologies--In this five basic problems are identified_- 1. localization and identification technologies, 2. Smart Surveillance, 3. biometrics, 4. On spot DNA analysis and 5. Technologies for human enhancement.
3. Privacy Impact Assessment: It is an initiative to evaluate the adequacy and efficiency of the data protection legislation.
4. Privacy policies --- It involves in tailoring designing and structuring and formulating an efficient, adequate data protection legislation.

Thus, it is well settled conclusion that data protection legislation is need of the hour same with india, Data Protection Bill 2019 still pending with no progress.

Artificial Intelligence and The Law

The Artificial Intelligence is the most advance invention of the technology and many large corporate houses are trying to replace their senior managerial professionals with the skill of artificial intelligence with a motto in mind to get the best of transparency, accuracy and lastly speedy work process.

In other word it can be encapsulated there is debate on human skill versus machine skill. But we must one thing that machine is the product of man. Artificial intelligence has aided to some legal issues to pop up and attract the eyes of the legislators to address the issues.

Firstly, the issue is the transparency of the algorithm because artificial intelligence works on algorithm because human skill is combination of heart and brain. No software has been developed or yet to be developed to judge a case at court on its unique merit or play a role of bank manager or human resource manager or a committed teacher.

Secondly the issue of accountability the work done by the artificial intelligence has no features of accountability because if we see the case of self driven car, if it causes a hit and run case, then who is to be blamed and penalized. Again, if we see in our domestic sphere if we keep a house help then he/she will be accountable for her but it is beyond the reasonable mind to think to make washing machine or dishwasher to be responsible for their bad performance, though these machines are not appropriate example of artificial intelligence but they are machine and artificial intelligence is at end machine.

Third issue is the fixation of liability which very much closely related with the accountability, when there is no scope of accountability, there is no scope of liability.

Fourth issue is intellectual property right of artificial intelligence, the question is the whether the work done by the artificial intelligence comes under the ambit of intellectual property right and whether the artificial intelligence itself should come under the scope of intellectual property law.

Thus, it is clear that there is gap between artificial intelligence and the law which needs to be addressed.

Emerging Technology and Consumer Protection Law

This chapter is basically gives an overview how the emerging technology have spread its tentacles into the consumer protection law. Here again the question of data privacy on the table for the discussion. Here we see General Data Protection Regulation of European Union and California Consumer Privacy Act have been passed to protect the data base and creates a liability on organization to take proper initiative and steps for data protection. And it is very sensitive issue which needs to be addressed in our country because in india from the cooking gas delivery system to senior citizen the valuable savings of life are all under the data base system. But it is not only alarming and shocking but very unfortunate and sorrowfull to mention that Data Protection Bill 2019 is yet to be passed.

Thus, the data of the consumer in india is at stake, there is no proper law which could govern the data base bank and provides for the protection and give the right of data privacy.

Conclusion

The said research after analyzing and having a thorough overview of the existing literature, statue it can be inferred though there is robust growth in technology but there is no parallel framing of laws and regulation to make use of technology and to protect the rights simultaneously. In this context it can be said that the law and regulation are to be tailored in such a way that law and technology to become inseperable and should go hand in hand.

For instance, we have seen the case of application of brain mapping, polygraph, DNA Profiling, Narco Analysis is barred by the legal wall of right of self incrimination and right to privacy.

Thus, it is very complex network of law and technology in case of data privacy. though there is mushrooming of technology through which huge stock of data of consumer are collected and use. But there is acute problem for the data protection in turn leads to violation and flouting the rights of data privacy which comes under the umbrella of right of privacy. This right of privacy is a universal human right which find its place in the Universal Declaration of Human Rights and as result all the nation have recognized and upheld the right of privacy. In India the right of privacy is upheld through article 21. so, it needful to have a well framed laws to protect the right of data privacy which is the part and parcel of right of privacy in general.

This research was aimed not only to focus on the relationship between the emerging and law but also to find a path to minimize the gap which is persisting between the technology and law while reviewing the literature it has

revealed that though there is example of modern technologies which can be applied in an investigation of crime like usage of brain mapping, nacro analysis, DNA Profiling, Polygraph. But very unfortunately the investigation agencies are being precluded to exercise their hand in dealing with modern technologies to investigate the crime by legal barriers like right of self incrimination and right of privacy enjoyed by the accused or suspect. Another grey area of relation between law and technology is data protection and governing law relating to artificial intelligence which is remaining only for research but various are not reluctant to apply the outcomes of research.

After having the research on doctrinal mode of suggest a concept "scientific law" which aims at "scientific justice".

The scientific law means use of technology should be allowed in the criminal justice system and technology should be protected by law. In more accurate manner it can be encapsulated in way where technology aids the law to find the path for justice and on the law, law should protect technology.

material and methods

literature and literature review: doctrinal

name of literature is given above as reference

Result

In my research it is crystal clear that in criminal trial only forensic science is not taken in consideration, it is only one part of the factor which is taken into consideration. Even in some case there is law which is creating bar to avail the oppurtunities of forensic science product of emerging technology.

reference

1. Forensic science criminal investigation & trial by b.r. Sharma.
2. Forensic science in crime investigation in crime investigation.
3. Forensic evidence and law by dr. Sanjeeb k. Panigrahi.
4. Forensic science and law edited by cyril w. Wecht, john t. Raigo.
5. Forensic science law and crime detection method.
6. Forensic science (for law students & law professionals).
7. Forensic science & law by upinder singh jandu and dr. Sarita jandu.
8. Forensic evidence: science and the criminal law by terrence f. Kiely.
9. Criminalistic lab manual by richard safertein.
10. Equal justice and forensic process by v.r. Krishna iyer.
11. Forensics: the anatomy of crime.
12. Forensic science: fundamentals and investigation by anthony j. Bertino.
13. Forensic science: the basic, by kathy mirakovits.
14. An introduction to forensic science in criminal investigation by dr. Krishnamurthy.
15. introduction to forensic science and criminalistic by henry c.lee.
16. Forensic science revolution of criminal law and trends by ms. Rajasi guharoy, mr. Anandit thakur, ms vyakya baweja.
17. Law of forensic science by dr. Ishita chatterjee material and methods.