Impact of Science and Technology on Law and Society with Dimensions of New Challenges of Cyber Security

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Abstract: In this paper we will try to examined the impact factor of science and technology on law and society with dimensions of new challenges of cyber security and it is also expanded the conception of cyber law. Law is not static term it is changes with the according to the requirements of the society. The law regulates the relations between the individual as concerns with whole society. Furthermore, with the advancement of time the science and technology has dynamic changes creates so many new advantages and disadvantages are present in the age of the internet technology. So most threats are based on the concept of as nothing is secured prevalent in the modern era. It is the expanded conception with refer to necessary changes in the law are also present need of the hour. In what extent the technology is useful, it can be used as limited, or demerits are also analyses in the present work. However, here we are concerned with the issues of skills and other information technology machinery, which change the relations of the law with society. Law deals with the rules and regulations, which is most capable for the change of the relations. We will discuss of some of the reasons behind the diminishing legal certainty in this field and the potential implications of declining authority of law in the context of cyber security. Therefore, the law is also amended in the modern perspective for the proper cooperation between the society and technology effects. With context to modern technology as to cyber, security is most important for the security of the state and allied other issues. The science and technology is so advanced in these days. Therefore, lot of changes can be possible in the law dealing with cyber space. The most important aspect is the advance technology has creates so many problems for cyber security. Reason being the law has been altered according to needs of the hours.

We can say that impact factor of science and technology on law and society is in the form of expanded perspective and with dimension of new challenges of cyber; security is a big threats for society. Therefore, the law has played an important role for the prevention of each breach in the modern society. The impact factor of information technology is so high with changing dimension of the form of law. Lastly, paper ends with definitive conclusion.

Keywords: Cyber, Security, Dimensions of new challenges, Law and society, New threats, Science and technology

Introduction

The science and technology in the modern context is very useful as compare to the traditional living standards of the human. It helps us in each field of our life. In the primitive age people is living in fewer techniques. First, we are aware of the history of modern age. The growth is slowly and step to step in this present progressive society. With the advancement of the time, society expanded in the scientific techniques. However, this process is so slow and so various ages have passed in the form of asexisting in the modern period. It also noted that time to time it has changed with the needs of the society. The development creates lot of problems. For the solution of these problems, it realised the some more and more technique is the need of the hour. After this, so many inventions arise in the consequence and finding the solution in the modern context. This is not simple process. Change is law of nature. It can be said that the modern society is becoming from the past and have completed the growth of different different ages. So later stage to stage, it has changed with the formal structure of the society. The science and technology is not unknown for the primitive period. It was exist in the form of that time in less or in

small form of the discoveries of that period. It is remember that no society can survive without the technology and techniques of the according of the needs of the age. Old civilization is also used to the techniques of science and technology. It is not same as compare to the today but it is deal with various needs of the routine life of the people of that period. Inventions gave great advantages and disadvantages and to find out the solutions of the so many problems. So from time to time, it has expanded and changing the new dimensions like today cyber security. The same other aspects is that the relationship and impact of science and technology on law and society. The law is defines conduct of the particular acts. Everything is regulated or governed by law. The first is the law of nature and the other is state recognised the law which enforceable by the state machinery. The science also based on the law in the sense of nature of principles or doctrines, which is invented by the scientists. The natural law is not punishable but the state has defined the certain acts are punishable or not for the benefit of the society or for the betterment of the peoples. Now we come to point in what sense all three term science and technology, society and laws how connected with each other and what is the cyber security issues are also covered in the paper.

Problem Profile

The problem profile is centred focussed of the paper is what is direct impact of science and technology on law and society with dimensions of the new challenges of cyber security. The first question arise that what are the complications of modern science and technology with the implementation of law and cyber security or allied threats to cyber space. The next is that what are the significance, merits, and demerits are try to cover in the paper. Science and technology whereas has gave so many benefits. However, besides the dark side is of advanced inventions are also seeing in modern age as compare to traditional society. The second question that the law enforcement agencies has difficulty aroused when the content is uploaded in the Facebook and messages circulated through whats App and other social sites continuing creates the nuisance between the different classes of the society. It is big issue when single circulated messages disturb the community in the society.However, we cannot deny the role of the science and all technology in daily life.

In the paper, I will tryto examine the new issue, which is known as to cyber security the word threats indicate that new coming future events or chain of events, whichare uncertain and unexpected risks for security. With the advancement of time the technology has dynamic changes creates so many new threats are also present in the age of the internet technology. The threats is based on the conception of nothing is secure is prevalent in the modern era. Reason behind is that hackers are intelligent persons they were stole the whole information relating to computers, and other electronic devices etc. However,others range of higher threats is also existing this one thing in the field on internet technology. The sovereignty lies from the state. Here we are concerned with the relevance of skills and other information technology machinery, which change the relations of the states. In the field of cyber world it is most important factor for the consideration of the whole authorities berunning is with this power. It deals with the intellectual skills of the state, which is most capable for the change of the relations.

Objectives

The objectives of the paper are to explain examine the actual present situation, which is most important for the today. We are aware about the world in relating to what the things has been done in whole universe. The life has changed in all spheres of the various fields of the interrelated in the world. The introduction is starts from what is going on and which is needed for improvement and we are going to right direction or not. Is it fair or not is another question. The modern law is in what extent is useful or helpful for the prevention of the all breaches, which affects all of the life. In what sense we can interpreted as a matter of think about what is the dangerous things for environment, technology affects or the like data privacy etc. The issues are resolving in the solution, which likes more suitable. The word impact of science and technology on law and society is one portion of this Article. The second is changing dimensions of new challenges of cyber security. The portion covers what is the impact mean in cases the science and technology affects the law. The same portion of this article has provided the information regarding the new dimensions mean expanded conception in the context of cyber security.This is clear from the title of the paper in what extent we can imagine the changing scenario in all fields of the life. The technological impacts and new inventions is which level alters our routine life is another issue of the discussion. The science has played very well defined role, in other words we can say more than from our expectation. It is very useful inventions made our life are easy and complex to simple in daily life. The great advantages has provided by science, which cannot be determined. The possibility is arrived in the sense of less hard work with maximum benefits through in all sphere of the life.

Impactof Science and Technology on Law andSociety

Like most interdisciplinary programs, STS emerged from the confluence of a variety of disciplines and disciplinary subfields, all of which had developed an interest typically, during the 1960s or 1970s in viewing science and technology as socially embedded enterprises.[1] The key disciplinary components of STS took shape independently, beginning in the 1960s, and developed in isolation from each other well into the 1980s, although Ludwik Fleck's monograph (1935) *Genesis and Development of a Scientific Fact* anticipated many of STS's key themes. In the 1970s, Elting E. Morison founded the STS program at Massachusetts Institute of Technology (MIT), which served as a model. By 2011 111 STS programs were counted.[2]

It is clear from the preceding discussion that the science and technology has impact on the law and society in both as positive and in negative sense. According to the present scenario, we cannot live without technology. It is great comfort for us without facilities the life has so difficult. The science and technology starts from minor to major all inventions which is part of our life. It cannot be separated from our daily routine life. In every field computer and all it facilities is smooth working for becoming the process is easy and under the comfort zone. The life is become a technology. Medical, education, agriculture, and all the various have completed dependent on technology and it cannot be possible without the help of scientific inventions. For the progressive society, it is also very important we be used the techniques in which is latest or updated the old versions of the same discoveries. This seems the more effective than the traditional life style of the people of the worlds. All the online transactions are part of the modern business and this is help through the science and technology. It is possible when the exchange of various trades at national or international has great diversity in the modern world. We cannot imagine what importance of the technology has contributed through modern perspective.The world is as a global village is connected with the through the science and technology. It is the adventures like all the fields of the not only national level but more than the international perspectives.

The technology has created so many confusion and demerits. We are aware of the hackers and all other person who stealing information and creates so many problems for the individual person. Reason being is in modern times nothing is secure is prevalent. The detailed disadvantages are covered under the title of the paper new dimensions of new challenges of the cyber security. Here we explained how the science and technology affects the law. The law exist in one sense for the regulating the individual persons for preventing the wrongful acts. Now the scientific inventions are on peek. The law changed with the requirement of the need of the hour. Not however still all the area of information technology can control over the so many problems. Sometimes we hear from the people that it is the so many transactions can complete without the anything is doing by actual user. Bank frauds, Atm frauds etc. are going on the so high level. This problems are still cannot resolved at level of the country to country. Various legislation is enacted by each country in the world but nothing has finished. This is one impact of science and technology on law and society. The second is the like the environment is degraded but continuing the problem is still subsists.

The law regulate the conduct of the people of the society. It is settled framework what can be done or what cannot be done. The impact of science and technology on law is not less than compare as to society. In every country so many laws are existed for the prevention of the illegal transactions through online or the directly deals with the techniques of the science. We cannot deny the influence of the discovery of the science of our routine life. Like mobile mobile phones, laptops, educational institution or all other types of the life or field relating to life is covered by the science and technology. Therefore, the various levels of states or international conventions of the science enact the regulation for governing the different different types of the activities. The law presumes that everything is deals with the rules and regulation. No violation can be exist from the whereas the law defines what is the the actual procedure and what is done is the violations of the particular legislation. However, in so many cases exemptions are also there. Meaning thereby the laws are settled for the breaches of the illegal activities of the individual or means all legal persons or the other persons includes all the other authorities etc.

The meaning of the new dimensions in the context of science and technology is in simple language that it deals with the criteria of the extended version of old one. It clears from about from this assumption that when one field is covered to another area of the particular institution or the authorities is expansion of that previous one. It has

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[1]Bijker, W. E., Hughes, T. P., Pinch, T. and Douglas, D. G., *the Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, MIT Press, Cambridge, 2012. Available at: *https://en.wikipedia.org/wiki/*Science, accessed on 8.8.2017
[2]*ibid*

changing in nature from time to time. It is another aspect, which is old inventions, is not relevant today. Not completed it has been exhausted from the present scenario. Therefore the conversion is from old to new be that on the rule of natural law as change is law of nature. The new ideas are converse of the living standard of the global world. The science and technology converted the so many things from complex to simple in the form of the present one. This is clear from if we look the whole inventions, which is in the past it is converted into new one. This happening of this that new laws, rules, regulations, order, byelaws, notification, ordinance is came into force from the date of the particular things is replaced of the old one.

The expansion growth of the industrial and all types of the minor or major projects cause creates pollution includes air, water etc. This cause from the scientific discoveries creates so many problems. The dangerous diseases are also come from the development of science and technology. The whole environment polluted through the various human activities. This means that science and technology whereas gave different different possible comfortable things at the same sequence it has created lot of dangerous problems which cannot be resolved even today. Science and technology defines not only in the context of easy life style of humans beings but it can be consider as in form most vulnerable and complex problems of today we are facing in the form of degraded of the environment.

The impact of science and technology on law and society is same. It can be seen in the modern society is also changed and settled laws are amended altered or enacted by the various states. This thing shows that law and society is dynamic concept. It is not static. The development of law is clear from that the society has adopted new things and law is altered according to the requirement of society. For example, when the new things are coming in our life all other issues are converse in the form of modern law. The law is for the people and when certain law is not useful for society it can amend or repealed. These things can do though the social change within the meaning of the scientific development. The science and technology is not less role-plays for the betterment of the society and laws. It does not mean the laws making power is vested in the scientific inventions. It is the in the understanding of the more and more inventions can create the merits and demerits. The impact of science and technology on law is so that new things help the new laws replacing one of the substring continuing laws. We are aware of the facts that when new coming inventions is useful than no problem is sought out however if the state has not in form of tackle through settled laws then new laws enacted for the prevention of the various breaches. This is depending on is it right or what is wrong. The settled laws clarify that the position is it amounting to the offence or not. The development is based on the both sides as positive as well as negative. From the primitive society it shows from the old sources that science technology, law and society is exist however as it today. It is the in the stage to stage developed with the wisdom of the human being. It was demand upon of the needs of the society. With the passage of the time science and technology, which is lesser in at that, time is developed and society is changing as a continuous process.

The law contributes the conversion of society as in the form rigid to simple through the various laws. It is well-known principles that which can regulate the conduct of the whole society. However, it is noted that without the help of science and technology it cannot be possible as developed as the modern sense what is law as it exist today. So various innovations thoughts, ideas can be exchange in the scholar of at that time of the society. Here we concern with the whole universe not only in particular region of the world. It means that whereas it depends upon the country to country. It is noted the two states has not the same as comparison to development. It is different in so many cases like cultural values or customs. These two elements are most important for the growth of the particular society. It deals with internal factor of the region. Cultural values or customs of the country is expected growth as compare to traditional way of thinking of the people. This is directly connected with science and technology, which is influential to all the society or the particular region of the world. This means that in every innovations ideas adopted by the of likeminded people. It has created with more and more opportunities for the the people for new discoveries. The impact of science and technology is not under the imagination of our mind. It starts from small to big in the form of the inventions.

The dimensions of new challenges of cyber security are another factor is analysed in the paper. The expanded conception of science and technology is deals with helpful innovations in one side but another is concern with is dangerous relates to cyber security and all other allied issues. The privacy life is not secure by the view of this type of the innovations and it is most dangerous threats in the modern age. What is the measure is to prevent the dangerous to cyber security is not completed in the advanced technology instruments even in today. The laws are strictly applicable and implemented when this types of the breaches are exist. The picture relates to the cyber security is so dark. It cannot say that what is the secure or what is not secure? The relevant issues are as under:

Privacy and data theft will be the top security issues that organizations need to focus. We live in a world where all information is in digital form. Social networking sites provide a space where users feel safe as they interact with

friends and family. In the case of home users, cyber-criminals would continue to target social media sites to steal personal data. There will be new attacks on Android operating system based devices, but it will not be on a massive scale. The fact tablets share the same operating system as smart phones means they will be soon targeted by the same malware as those platforms.[3]

Why cyber security is a bigger issue now?

Most large companies have dramatically strengthened their cyber security capabilities over the past five years. Formal processes have been implemented to identify and prioritize IT security risks and develop mitigation strategies, and hundreds of millions of dollars have been dedicated to execute these strategies. Desktop environments are far less "wide open" than they were even five years ago, as USB ports have been disabled and Web mail services blocked. Robust technologies and initiatives have been put in place to address attacks on the perimeter.[4]

- *Value continues to migrate online, and digital data have become more pervasive.* Why are some institutions experiencing more online attacks per hour than they did in a month just a few years ago? With apologies to Willie Sutton, because that is where the money is. Quite simply, more online transactions create bigger incentives for cybercriminals.

- *Corporations are expected to be more 'open' than ever before.* Increasingly, people working in business units are demanding access to corporate networks through the same mobile devices that they use in their personal lives. [2]

- *Supply chains are increasingly interconnected.* To strengthen ties to customers and optimize supply chains, companies are encouraging vendors and customers to join their networks. However, this engagement makes walling off a company's technology environment all but impossible..[5]

- *Malevolent actors are becoming more sophisticated.* Professional cybercrime organizations, political "hacktivists," and state-sponsored groups have become more technologically advanced, in some cases outpacing the skills and resources of corporate security teams. Hackers provide "cybercrime as a service"—receiving payment for each end user device they infect with malware. As a result, the past five years have seen more complex, targeted attacks. Malware today is much more difficult to trace and often customized to steal data that can be used for financial gain..[6]

Cyberspace is the notional environment in which communication over computer networks occurs.[7] The word became popular in the 1990s when the uses of the Internet, networking, and digital communication were all growing dramatically and the term "cyberspace" was able to represent the many new ideas and phenomena that were emerging.[8]

Cyberspace as described above, with its unique characteristics poses numerous challenges in cyber security. The most critical challenge is of coordination and cooperation between different stakeholders at national and international levels. A comprehensive framework is required to ensure coordinated response, recovery, intelligence and information sharing mechanism, clarity in roles & responsibility of various agencies and governments.[9]

Cyberspace is the "place" where a telephone conversation appears to occur. Not inside your actual phone, the plastic device on your desk. Not inside the other person's phone, in some other city. The place between the phones. [...] in the past twenty years, this electrical "space," which was once thin and dark and one-dimensional—little more than a narrow speaking-tube, stretching from phone to phone—has flung itself open like a gigantic jack-in-the-box. Light

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[3]Ravi Sharma,Study of Latest Emerging Trends on Cyber Security and its challenges to Society International Journal of Scientific & Engineering Research, Volume 3, Issue 6, June-2012, Luis Corrons, Technical Director, Panda Labs, Bangalore, 2012, Available at: *https://www.ijser.org*accessed on *10.8.2017*

[4]James Kaplan,Shantnu Sharma,and Allen Weinberg: Meeting the cybersecurity challenge, Available at: *https://www.mckinsey.com,accessed on 10.8.2017*

[5]*ibid*

[6]*ibid*

[7]Cyberspace:From Wikipedia, thefree encyclopaedia,Available at: *https://en.wikipedia.orghttp://www.oxforddictionaries.comaccessed on 11.8.2017*

[8]*ibid,*Strate, Lance (1999). "The varieties of cyberspace: Problems in definition and delimitation". *Western Journal of Communication.* 63 (3)

[9]Anil Kumar Mor, Cyber Security Threats And Challenges Information Technology Essay: Available at: *https://www.uniassignment.com, accessed on 11.8.2017*

has flooded upon it, the eerie light of the glowing computer screen. The concept of cyberspace therefore refers not to the content being presented to the surfer, but rather to the possibility of surfing among different sites, with feedback loops between the user and the rest of the system creating the potential to always encounter something unknown or unexpected.

Sovereignty and Jurisdictional Fragmentation

The problem of jurisdictional fragmentation follows from the fact that it does not and cannot agree with the global nature of cyberspace. Jurisdiction, inherently linked to the notion of state sovereignty, imposes an area of exclusive responsibility of a sovereign state over its territory and/or its citizens, thus excluding any extra-jurisdictional involvement of other states. The sovereign equality of states is protected by rules of customary public international law.[10] No state, therefore, can claim sovereignty over cyberspace and thus introduce its effective regulation.[11]

Conclusion

In the end, we can say that the science and technology is very useful in these days. However, it is not defined as in what extent? The law and society is effected by the by science and technology. The people use the technology and in the consequences of technology, there are laws are needed for the betterment of the society.

In the paper, examine the impact of science and technology in what extent it has uses or misuses by the people. What is the new threats or new dimensions of the cyber security is also disused. We can reach the finding in the form of, as that merits and demerits is also present there. The impact of science and technology is so high, the modern living life style is not without the science and the other allied facilities not possible. However, the law can regulate these types' activities. The science and technology has impact factor on law and society. The law provides that certain regulation, which can check out the every type of the violation and after fixed certain types of the punishment.

The next is the cyber security is the present major issues, which can be also, cover by the various Acts or legislation. It clear from the concept nothing is secure. The nothing is secure is protected by various laws. It is deals with the prevention through the relevant procedure of the laws. It can be done through the preventive measures of the laws. The cyber security is not possible but the attempts are the best thing for the any breach of the anything, which is against the law.

In the end, I conclude that the three terms are interconnected with each other. The science andtechnology, law and society, which cannot be separated from each other. It means that from the history to present time it is going by side by side. However, in the context of the modern period it can be said that it is deals more and more nearby relations. Science and technology is regarding the facilities of the life is controlled by law. The laws governed the terms of conditions in which the facilities enjoyed whereas the possibility of the things can be used or misused. However, the law clearly declare what is do or what is not doing for the certain things in the particular context of the specified way of the conduct of the peoples. The science and technology has great impact on law and society with the dimensions of the new challenges of the cyber security. It expanded the conception in the all the spheres of the law. It is deals with most important aspects that besides this science and technology affected environment and all other fields of life. It cannot be denying the truth that so many negative factors of modern growth are available. It can be checked with the various legislation mean strictly implemented through the state machinery. State role is necessary is for the prevention of the all types breaches which cannot be if the stringent can be taken against all those who are defaulters in the context of environment protection. This is the essential for the environmental protection and cyber security. The paper ends with definitive conclusion.

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[10]Artur AppazovLegal Aspects of Cybersecurity Available at: http://justitsministeriet.dkaccessed on 12.8.2017 Comprehensive Study on Cybercrime 184. 2013.
[11]Michael N. Schmitt, Tallinn Manual on the International Law Applicable to Cyber Warfare 16 (Cambridge University Press 2013).