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WIRELESS INFORMATION AND COMMUNICATION TECHNOLOGIES: SOCIO-ECONOMIC IMPACT AND ADDICTION IN INDIA

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ABSTRACT:

Wireless information and communication technologies such as smart phones, internet, bluetooth Wi-Fi, email which use electromagnetic and radio frequency waves to transfer information and communicate from one place to another place without using wires or electrical conductors. The impact of these wireless technologies on our life becomes more and more significant and undeniable. These technologies can also play a useful role in accelerating the process of national development in developing India. Wireless communication has opened boundless new entrance for entertainment. For instance, a smartphone owner can keep himself entertained almost 24 hours, and all this is possible only because of wireless technologies that can enable a user to download such as newspapers ,books , online videos, movies, games, music . Again digiLocker, e-Wallet, e-Hospital, e-textbooks, e-Sign etc. are such applications which promoted by govt. of India under the Digital India programme. Considered as one of the most life-changing innovations, wireless technologies has proved its position in every ground of life, from education to economic and medication. However, the increasing negative effects of these technologies raise a question about the use of wireless technologies in daily life.The present paper is focusedon the social and economic impact and also examines the various health , financial , educational, and social issues related to wireless technologies impact in India.

KEYWORDS: *Wireless Technology, Internet, Smart Phone, Digital India, Developing India.*

INTRODUCTION :

In mid-2017, the Blue Whale game and its Challenge hit headlines has brought on a panic attack after it was linked to the death of School Students and teenagers in India as well as the whole World . The incidents are giving rise to many anxious questions such as : What is this deadly game and why would someone build it? Is it an app? How to know any child is playing the game? The simple answer is internet , smartphone and social networking sites which are the part of wireless information and communication technology are fast becoming very popular means of both interpersonal and public communication in India. Actually in the 21st century, technology and human life cannot be separated. We use technology; depend on technology in our daily life and our needs and demands for technology keep on rising. The key to tomorrow's progress is information and communication technology.

MEANING OF THE WIRELESS TECHNOLOGY:

Wireless information and communication technologies such as mobile phones, television, and radio, email, broadband Internet , instant messaging programs such as whatsApp, messenger, Bluetooth, twitter, blogs and social networking community websites play an important part in social life in India now a days, since radio was first introduced at the end of the nineteenth century. The history of modern wireless technology begins in 1899, when Guglielmo Marconi debuted his "wireless telegraph," which ultimately came to be known as radio.[1] Today, wireless communication devices are ubiquitous in homes, hotels, airports, schools, and libraries in all over the India. It has revolutionized the way we live and the way we work.

Wireless technologies use electromagnetic waves[2] i.e. include radio, infrared, laser, acoustic, or light waves to send information. This includes such diverse technologies as FM radios, video conferencing, satellite television, cell phones, GPS systems, and text messaging etc. here it is remarkable that when studying the impact of wireless technology, it is also important to pay attention to the multiple forms of communication it enables, which can vary by size of audience, synchronicity, and direction of transmission.

The Dissemination of Radio Frequency Through Wireless Communication Technologies :

Wireless communications play an integral role in Indian society. Millions of Indians now use smartphones in their daily lives and nearly all Indians use some sort of wireless device daily.Radio frequency energy is another name for radio waves. It is one form of electromagnetic energy which consists of waves of electric and magnetic energy moving together (radiating) through space .The radio frequency spectrum is indispensable for wireless communications infrastructure. [3] When someone use smart phone or any other wireless communications device, the information's i.e. voice, video, pictures, text message, email etc. is carried through the air using radio frequency fields from its antenna. An adjacent outdoor antenna receives the information and responds in the very same way. An outdoor antenna sends radio frequency fields out into the local area and smart mobile phone, laptop etc. can detect the signal from the outdoor antenna and then understand the specific patterns of energy within the radio frequency field. The mobile phone "sees" the radio frequency fields and can "read" the information contained in them.

In this context, Wi-Fi which is thought by many to be the first major communications application for unlicensed spectrum. It encircle the technologies of Wireless Local Area Networks (WLAN) and this device can connect to the internet when it is near an Access Point. The area shielded by one or more Access Points is a hotspot[4]. WiFi applications include internet access, gaming, and basic connectivity of consumer electronics. The efficiency of Wi-Fi networks happened in the prospering of Wi-Fi hotspots.[5]

Like the television and the Internet in the 1950s and 1990s, mobile telephony has emerged as one of the defining communication technologies of the time.[6] In a nearly short period of time, smart mobile technology has entered importantly into society and grabbing an integral age spectrum of subscribers in developed and developing countries, from school and college students to senior citizens. When smart phones were first popularized, there was no texting as well as undoubtedly horrible connections. Then came 2G or 2nd Generation networks as well as by having them came the capability to transfer and get information. Technological innovation strengthened and information rates were raised slowly, by having the latter types of 2G getting to speeds. 3G or the 3rd Generation of mobile technology and 4G or 4th generation of mobile

[1] *Bondyopadhyay, Prebir K. (1995). "Guglielmo Marconi – The father of long distance radio communication – An engineer's tribute". 25th European Microwave Conference, 1995.*

[2] Electromagnetic waves are waves that are created as a result of vibrations between an electric field and a magnetic field.

[3] Ponappa, S. (2010), *Understanding Spectrum. Business Standard*, Retrieved November 21, 2011, from http://www.business-standard.com/india/news/shyam-ponappa-understanding-spectrum/387446/

[4] Wireless (or Wi-Fi) hotspots are essentially wireless access points providing network or Internet access to mobile devices like your laptop or smartphone, typically in public locations. It can be as small as a room or as large as many square miles of merging hotspots.

[5] *Internet Security Podcast episode 10: Free WiFi And The Security issues it poses". 18 February 2013. Retrieved 13 April 2013.*

[6] Castells, Manuel 2007. *'Communication, Power and Counter-power in the Network Society.'* International Journal of Communication 1: 238–66, http://ijoc.org/ojs/index.php/ijoc/article/ view/46 (last accessed April 7, 2007).

technology innovations took us by storm with speeds of about many times quicker than the old 2G standards. Currently 4th Generation technologies are being presented around the world and devices are being made available that may enjoy this brand-new mobile advancement in speeds and reliability.[7] On the other hand the latest generation of smartphones are increasingly explored as grasped computers rather than as phones, due to their open operating systems , large screens , powerful on-board computing capability and abundant memories, which encourage application development.

Social and Economic Impact of Wireless Technologies in Modern India:

The impact of wireless technology on modern Indian society has been profound. Mobilizing the hasty transfer of information and communication services over huge distances, unbound by geographic barriers, Wireless mobility enables instant communication anywhere, anytime. Typically, when a new technology is introduced, people first interpret its usefulness in terms of older technologies. Gently, as people develop new uses for new technologies, their behaviour changes and the new technologies feel crucial to them. Usually, since the development of radio, new wireless technologies have changed every aspect of human life from communication, family life, and social interaction to military strategies, medical treatments, and policing. Wireless technology is currently reshaping the fields of medicine, law enforcement, sports, and education, among others, while reconfiguring interpersonal communication and changing the norms of public behaviour through the Digital India programme which was launched on 1st July 2015 by the Government of India to ensure that Government services are made available to citizens electronically by improved online infrastructure and to transform India into a digitally empowered society and knowledge economy by increasing Internet connectivity.[8]This programme has been conceptualized by Department of Electronics and Information Technology and will impact ministry of communications & IT, ministry of rural development, ministry of human resource development, ministry of health and others.[9] In this point, the impact of wireless information and communication technologies in India can be explained by the following issues :

1. **Issues of Environment**
2. **Issues Of Health Care**
3. **Issues of Online service and Financial Information**
4. **Issues of Business Communication**
5. **Issues of The Educational Opportunities**
6. **Issues of Social and Psychological Behaviour**

1. Issues of Environment:

As wireless technologies become available in new markets all over the India , we need to consider the environmental issues. Now Indians enjoying new benefits from the rapid spread of low cost cell phones are the same ones with few or unenforced laws and regulations related to the environment. In this point a recent report from INFORM, calls attention to the hazardous materials used in the phones and batteries including arsenic, antimony, beryllium, cadmium, and lead.[10] So both batteries and the phones themselves need to be recycled. With effective recycling, we could enhance connectivity, a social good, by offering phone service in locations that already offer related services such as film processing and mailing.

[7] *"ITU World Radiocommunication Seminar highlights future communication technologies"*. International Telecommunication Union.
[8] Prakash, Amit. "Digital India needs to go local", The Hindu, 26th February 2017
[9] Thomas, Pradip Ninan. *Digital India: Understanding Information, Communication and Social Change.* SAGE Publications India.2012, ISBN 9788132116851.
[10] *Waste in the Wireless World: The Challenge of Cell Phones,* Bette K. Fishbein, INFORM, Incorporated, 2002.

2. Issues Of Health Care :

Wireless communication has impacted medical care in remote areas of the India, particularly by improving distribution of medical information and treatments.The ability of wireless to go anywhere anytime means that the technology can collect and provide information that could not have been gathered before. For this reason, Health care workers can reach new patients because they all have mobile phones. Migrant workers in some states of India can connect to each other over vast geographic distances through a common mobile application. A shortage of health care workers around the India means that pressing needs are not met. People who must manage lifelong chronic diseases struggle on a daily basis to implement optimal health care solutions.

Generally speaking, more people using wireless technology means the services become more powerful, and thus more socially impactful. Wireless technology has been deployed in every corner of the India as well as world to help solve many of these problems. With the right infrastructure and applications, this unlocks a vast opportunity to connect, heal, teach, and empower billions of people. In India, not everyone has a smartphone. Some elderly patients may not feel comfortable using smartphones, but could benefit tremendously from the servicese-Hospital ,e-Healthcare and applications can provide. Many elderly people can now wear wireless devices that immediately contact emergency care workers. Servicese-Hospital is a step of the Digital India programme. Online Registration System (ORS) is an online portal were citizens having Aadhaar can enrol for appointments in hospitals across various States and Union Territories of India. Through this service, getting an OPD appointment, lab reports and blood availability in any government hospital has become online and easy.[11] E-Healthcare would cover online medical records, online medicine supply, online medical consultation, pan-India exchange for patient information.[12] These valuable steps must improve the doctor-patient relationship through greater connectivity and information flows.

3. Online service and Financial Information Issues :

In modern india, without a bank account, life is different. Depositing a pay check means paying a check-cashing fee. Mobile accounts, payments, and transfers are an increasingly important financial service. The growth of mobile banking and online shopping over the past years indicate to these opportunities around the India.Mobile payments are quickly becoming an important financial service with an international value.Simple tools can send customers important messages, such as account balance reminders, bill pay reminders, and ATM locations. Mobile banking also offers financial institutions efficiencies, value, and opportunities. Check deposits, account transfers, balance inquiries—such mobile services can help banks provide easier, less expensive, and more efficient customer service. Mobile phones can enable greater access to financial tools, improve personal financial management, increase access to important information about markets, and enable mobile money and payments. In this point, the concept of e-Wallet[13] or we can say electronic wallet which main objective is to make paperless money transaction uncomplicated is valuable. It is a type of electronic card which is used for transactions made online through a computer or a smartphone and the utility of e-wallet is same as a credit or debit card.

4. Issues of Business Communication:

Wireless information and communication has had a dramatic impact in modern India on how companies policy business, making it uncomplicated to keep in touch with customers. Wireless also has an vital role to play in financial services for businesses. The world business idea is the equipment of hackneyed speeches and annual report stock photos. Now a days in India, individual-fixated mobile financial services, where wireless enables a float of financial tools for enterprises. These tools include access to market information, as well as to services such as financing, insurance, and payments. Mobile finance or we can say applications in mobile banking, , range from sending daily reminders to customers on their smart phone and to providing demanding business tools for individuals and small business owners. Today in India, many

[11] https://ors.gov.in/contact.html
[12] http://pib.nic.in/newsite/efeatures.aspx?relid=115276
[13] https://www.npci.org.in/

small-scale businesses might be under banked and cash-rely. In those occurrences, using computerised payments and financial services enable more distant transactions, lower transaction costs, improve security by lowering reliance on cash, and allow businesses to access more and new customers. Here it is remarkable that Digilocker[14] which is a most valuable step of digital India programme offers a dedicated personal storage space, linked to each resident's Aadhaar number. It can be used to securely store e-documents and can be accessible via web portal or mobile application.. Again, e-Sign[15] facility provided as part of DigiLocker system can be used to digitally sign e-documents.

Thus mobile technology plays a role in improving economic growth, financial capabilities, and harmonious social areas even in the developed India. Many project and business, particularly in the developing India, are embarrassed with a lack of quality, timely, and diverse information. Mobile technology helps farmers find the best markets in which to sell their goods, thereby decreasing search costs, increasing availability, and improving economies.[16]

5. Issues of the Educational Opportunities:

Sometimes in surprising ways, educational institutions are outspread adopters of wireless technology. Not only gaining knowledge, but every part of the education system in India is simplified because of the Internet.Wireless technology can play a valuable role in improving education in—and out—of the classroom. It can be said that, the scope of Internet in education is very wide and equal to all. Now in modern India teachers have the chance to be able to teach at more than one place simultaneously. They may be in a village or small town but through the using of wireless technologies they can be linked to students in more populated areas.

Wireless educational applications overture a variety of learning tools that advance educational outcomes which provide a more comprehensive learning atmosphere, and in numerous cases generate flourishing learning, with a lot of fun. Again we can now view prospective educational institute, enroll for courses, look up courses, take classes, research, results, and even look for job prospects on the use of wireless technology. Student can now gain knowledge according to their need and time available and they no longer need to be in the classroom with a teacher during school hours to learn and engage. It is also true that , now we are, never too old or too busy to learn something new.The Internet allows students to read the latest news of a certain subject they are studying. Students and Scholars have access to the most recent data by using wireless technologies and therefore are in a better position to make well-informed conclusions anddecisions on any research , assignments and projects.It is true that, wireless technologies help students develop their computer skills, writing skills and In some forms, it can help students with critical thinking skills. With textbooks on wireless tablets, smart phones, students can, upload and download content, receive timely updates, follow links to videos or images, exchange ideas with classmates, and engage in a much more interactive experience. Wireless technology can make powerful connections where excellent schools, heavy infrastructure, and traditional educational systems are lacking.Again several companies provide and develop digital textbooks. [17] In this context it also noted that, language learning is another area where wireless technology generates inventive educational hopes. Voxy,[18] is such a "flexible, contextual, convenient and fun" app for learning a new language.

Here it is remarkable that *the Pradhan Mantri Gramin Digital Saksharta Abhiyan* being initiated under Digital India Programme to make 6 core rural and the backward families digitally literate by March 2019.[19] A few years ago in India teachers said students to power down wireless devices at school, but todays educational institutions are now going so far as to integrate them into the curriculum. So classroom solutions,

[14] https://digilocker.gov.in/
[15] http://cca.gov.in/cca/?q=eSign.html
[16] "*Government aims to give 'Digital India' benefits to farmers*: PM Modi", The Times of India, 18 February 2016
[17] Mitra, Sugata. *"Give Them a Laptop and a Group of Pupils Will Teach Themselves."* Guardian, Educational Supplement, October 19, 2010.
[18] https://voxy.com/solutions/language-schools/
[19] https://www.pmgdisha.in/faq

education applications, e-textbooks, and other digital, wireless education applications are highly beneficial in rural and urban India.

6. Issues of Wireless Technology Addicted Users Social and Psychological Behaviour :

After the above discussion it can be said that , the impact of Internet on our life becomes more and more significant and undeniable of every human being. Life without these technologies is definitely very troublesome and inconvenient. Wireless technologies are furnishes with applications for downloading and reading newspapers and books, and streaming games, movies, music and live sporting events. Here it is remarkable step in India is that CGnet Swara.[20] It is a smartphone-based news broadcast system which gives residents of remote villages in India a new-found ability to report on news and events in their region.

Just like everything, these technologies have both positive and negative effects. The students are just addicted to smart phones. They can be seen playing games, chatting, and talking to their friends on their mobile phones most of the times. Again, a mobile phone addict carries their phone everywhere they go and use it during the time doing other things like studying, eating, driving and also using it in inappropriate places like hospital church, class, lavatory and danger zone areas like petrol pumps. In fact, adolescents and teenagers are wasting lot of their time in sending unnecessary message to one another through their mobile phones. This is totally wastage of time and money. Students do not give proper time to their studies and waste their time in playing games, listening music, watching videos and reading messages on their mobile phones and other wireless information and communication technology. Most of the accidents that happen daily arise because of Wireless information and communication Technologies. [21] Some survey and research are indicating that the addicts spent a lot of time in adult websites for cybersex , cyber porn , involved heavily in online relationships and also addicts exhibited obsessive online gambling and shopping.

Apart from accidents, mobile phones have bad impact on health. InIndia, anxiety disorder was found of adults problematic wireless technology users. Among adolescents and teenagers internet addictions was associated with high label depression, restless sleep, social phobia, aggression, shyness, foggy brain, poor eyesight, memory problems, moodiness and unexplained aches and Suicidal ideation.[22] The panic blue whale game's incident point out that parents are not aware about the activities of their children. Now days in India, wireless technologies makes individuals become more introverted take a footstep back from family and friends which enhanced social anxiety. So the wireless information and communication technology addiction increase the fear and the anxiety of negative social evaluation and also delay face to face interaction. Some scientific research are indicating that constant assault by the intense, high-frequency radio signals, electromagnetic radiation which are associated with wireless devices might even be producing more serious consequences, such as cancer, autism, immune system disorders, DNA damage, brain dysfunction, and sleeping problems.

CONCLUSION:

In conclusion, wireless information and communication technology symbolises advancement of human knowledge and man is considered as the generator. Not only in India but also the world, wireless technology has helped bring a more developed economy and allow the entertainment show class. Although cyber-crimes, hacking, stealing of personal information, MMS scandals, illegal pornography and various other issues have emerged in India from the misuse of wireless technology. The abuse of technology for economic interest is equally responsible. By the impact of wireless technology, the new economic order ensures a great industrial and corporate cooperation, globalization, expansion and liberalization among the nations. For these reason Digital India consists of three core components which are digital literacy, delivering government

[20] https://en.wikipedia.org/wiki/CGNet_Swara

[21] Krishnamurthy S, Chetlapalli SK.,(2015) , *Internet addiction: Prevalence and risk factors: A cross-sectional study among college students in Bengaluru, the Silicon Valley of India*, Indian J Public Health 2015,

[22] Prabha, D., Magdalin, S., (2016*), Loneliness, Social Anxiety and Psychological Well-Being in Relation to Internet Addiction among Women College Students, International Journal of Indian Psychology*, Volume 3.

services digitally and development of secure and stable Digital Infrastructure.[23] Again, US software Microsoft Corporation offers newly-developed White-Fi technology can provide free Wi-Fi connectivity which has potential to provide free connectivity to large sections of the Indian population through wider coverage and economical deployment.[24] Finally the curse and blessings of wireless technology assure us further strengthening of human equality, fraternity and liberty.

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17. https://voxy.com/solutions/language-schools/
18. https://www.pmgdisha.in/faq
19. https://www.npci.org.in/
20. https://digilocker.gov.in/
21. https://en.wikipedia.org/wiki/CGNet_Swara
22. http://meity.gov.in/sites/upload_files/dit/files/Digital%20India.pdf.

[23] http://meity.gov.in/sites/upload_files/dit/files/Digital%20India.pdf

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