DOES COVID 19 MAKE ANY CHANGES IN CYBER WORLD?

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Abstract: Even Covid-19 paralyzed the entire psyche but has led to the rise of the van in the cyber world. Tired of going out and not even talking to anyone, all the people who were confined inside the house relied on the internet for relief. Social distancing and stay-at-home protocol cause many challenges to human beings. It was a fresh experience for one and all. Peoples belong to various groups like students, doctors, patients, employees, and others forcefully enforced to work or stay under this stressful crisis. This was a big challenge for most of us. This situation became a stronger pavement for a rapid rise in the field of the internet. This pandemic rapidly causes a significant rise in cyber threats. From our years of experience, we can easily understand that Information Technology (IT) has contributed to the social and economic growth not only of India but of the rest of the world. In this paper, we can see the main changes that occur in the internet world with regards to the impact of the CORONA Virus.

Index Terms - Covid-19, Cyber Presence, Cybercrime, phishing, malware, Data Analysis, Information Technology

I. INTRODUCTION

Based on our realization from past years, IT is an unavoidable factor and has helped to achieve economic and social progress not only in India but also in the entire world. This makes IT a potential target for cyber-attacks even in the most normal times. Today, as the globe fall with an unexpected pandemic with the appearance of Covid-19, ethical hackers are hard to exploit a changed approach to their criminal activities. As social distancing becomes a stronger protocol by the government of India, to obey that all the employees requested to work from home with lockdowns days and commute restrictions coming into place. This global crisis offers a big opportunity to cyber criminals (person who does cybercrimes) to do some kind of malpractices or illegal activities. In the analysis of a survey conducted by the United States., the Federal Beuro of Investigation has observed cybercrime rate is increased up to 300% of the normal measures. Phishing attempts have soared by over 600% since the end of February, including traditional impersonation scams along with business email compromise (BEC) and extortion attacks. The Internet is defined as the network of networks that has enabled massive fragments of the worldwide workforce to shift to remote operations, permit schools and colleges to provide online educations to students throughout the globe, and extend the cosmos for innumerable businesses and individuals to carry on with to set out their circles amongst a global catastrophe. The role of the Internet is not only to handle day-to-day life activities but also to authorize communities to develop all through the COVID-19 epidemic is undoubtedly pivotal. It is very transparent to illustrate that the Internet is assuredly in everyday life.

II. CORONA EFFECT AND CHALLENGES

The effect of the novel CORONA Virus crisis affects every area of human life including the educational sector, industrial sector, health sector, and science and research area, and also government sector. It leads to a very progressive improvement in the above fields. It decreases the digital gap between individuals who access technology. Due to this situation, most people who depend on the internet require a release from their stressful living conditions. Peoples didn't have technical knowledge is also uses the internet very largely during these days. The main challenge was faced by our education sector. Because normally we follow an offline teaching mechanism where teachers, students, and research scholars come directly to educational institutions like schools, colleges, and universities. There they follow a face-to-face and interactive lecturing method. Because of this crisis, the educational sector completely changes their educational style to online, where teachers can take classes from their own homes and students will attend it from their houses in all days. Due to this a large number of peoples uses the internet for education. Teachers use modern ICT-enabled techniques for teaching. The main trap is that everyone needs either a desktop, laptop, mobile phone, or tablet having a proper internet connection. For that government and educational institutions help students to create a suitable environment in their house for their studies. Like this medical field also undergoes many changes. Patients requested to consult doctors from their own homes. If it is an emergency then only they need to go to the hospital. Otherwise, they can consult doctors through online applications. The medicines will be distributed by authorized agents or communities arranged by the corresponding hospitals. Patients can pay their bills online. The government also makes all of its services online, so that people will not go anywhere for their needs. For that, they develop most of the services as E-services. It also a greater challenge for the government sector. It happens

within their hands as early as possible. That's all it needs an active internet on a mobile phone or other digital devices. New technological developments in the IT industry which change the face of society. They are

- **Blockchain: -** Is a present-day technology used in the field of cryptography. It is used as a prevention to available data which is being modified.
- **The Internet of Things: -** It is also known as IoT. This technology combines artificial intelligence and blockchain with the internet to make all the devices smart. Through this technology, devices can self-automated by which they can control by themselves without human involvement.
- **Generative Adversarial Networks:** - this technology dinting two neural networks against each other to drill one of them to bring out new novelties.
- **Artificial Intelligence:** - AI is a technology used to mimics the human brain, which means making devices as intelligent themselves. By using this any complex problems can be easily solved within a limited time.
- **Quantum Batteries: -** This is used to overcome the drawbacks of normal batteries. That is their charge back up. Its working depends on solar energy. By using this battery we can reduce e-waste and achieve more performance and battery life for all portable devices.
- **Human and Artificial Neural Networks: -** This is a kind of wearable device used for communication purposes with the help of AI.

III.CYBER WORLD/ CYBERSPACE

It is an online environment where peoples communicate with each other using the Internet. During this social communication, many participants can enter into this at the same time without any limitations. It is a digital platform through which one can communicate with anyone at any place all around the world. It is nothing but more than the actual Internet. By using this we can enter into a social communication platform like Facebook, Twitter, and Instagram where we can share our thoughts, ideas, photos and stay connected with our loved ones, where distance is just not a matter. The above-mentioned pandemic influences peoples to take part in this digital communication space more than their normal usage. It also helps them to make online friends and enjoy their leisure time. Cyber Space is a very broad term composed of computers, networks, software, and data storage devices such as hard disks, USB disks, the internet, websites, emails, and electronic devices.
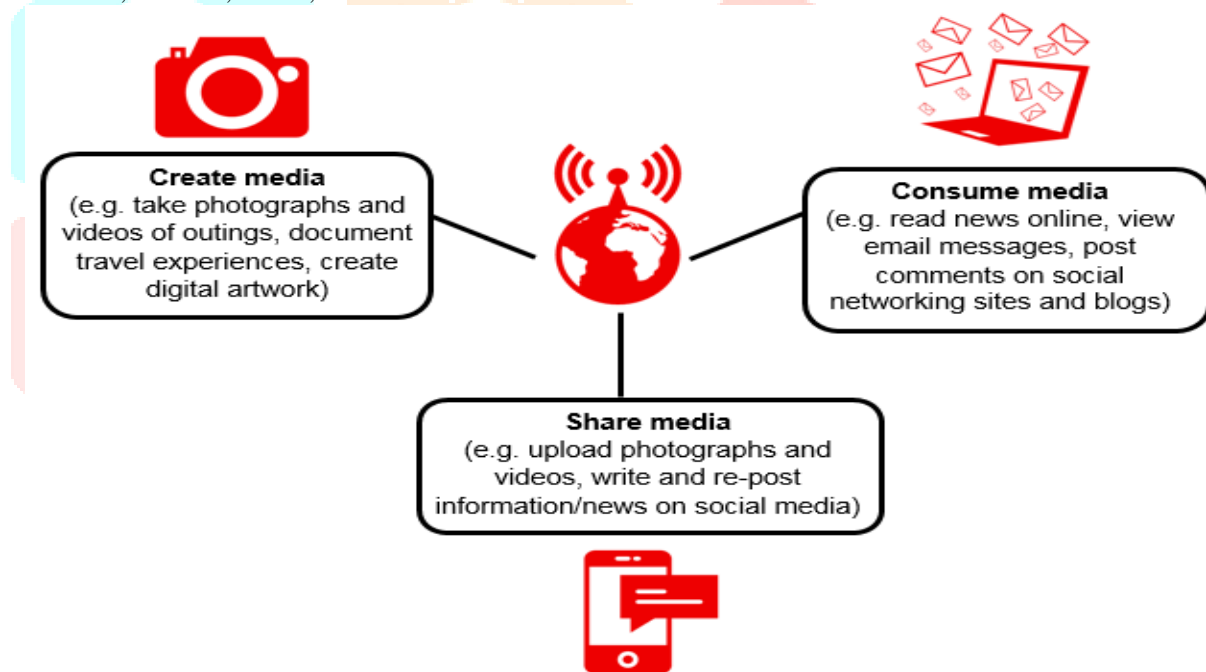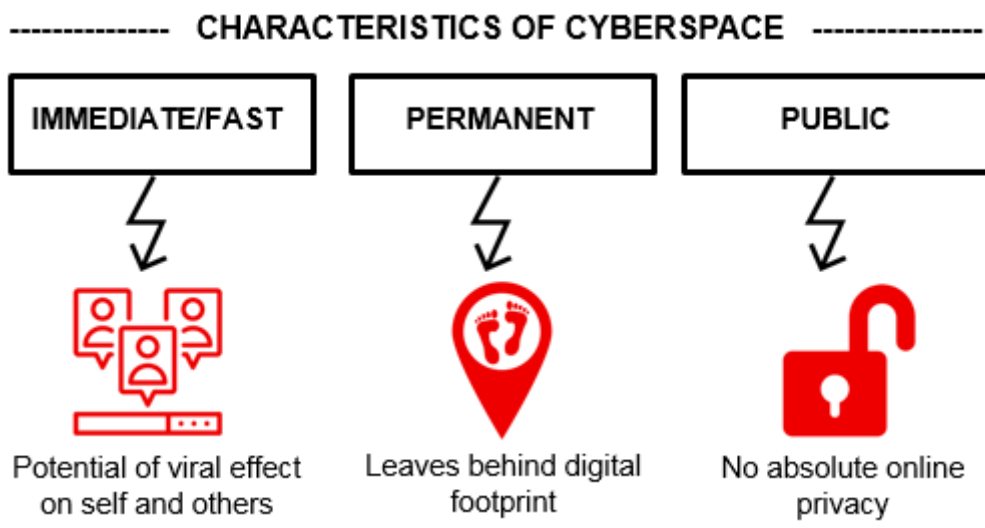

Figure 1: Cyber Space

Figure 2:- Characteristics of cyberspace

The above figure depicts the characteristics of cyberspace. When a person enters into cyberspace all his activities are traced and their footprint is left there. This is a digital that footprint depicts what he has done online. It stores the period from the time of login and logout by their actions.

IV.CYBER PRESENCE

This term is related to the amount of time when a person or an organization stays online. Staying online means active usage of the internet among cyber domains. It is used to identify and recognize the active participants of the internet. A cyber presence is possible through the following terms

- Website
- Social Media
- SEO- Search engine Optimization
- SEM- Search Engine Marketing

When one enters into cyberspace he must have the ability to communicate with anyone in the globe through Social media. He can also share data, information, and knowledge between digital devices. By using this facility an individual or an organization can market themselves for any activities based on their demand. Internet usage in youngsters has grown rapidly during the coronavirus disease pandemic. They always active on the internet in a 24 hours format. They enjoy their free time by playing online games, watching movies or songs, surfing new technologies, etc. Sometimes this global disease will pay away for cyber addition too. Cyber addiction is referred to as Problematic Internet use (PIU) or iDisorder. It is defined as any online-related compulsive behavior which interferences with normal living and causes serve stress on family, friends, loved ones, and one's work environment. It can be analyzed based on the total time one spends with social media. If you can't live without the internet then you are a cyber-addict. By taking proper counselling we can get recovered from this disorder. The following figures, Figure 3 and Figure show the rapid increase in the usage of the internet during CORONA days. By analyzing those figures we can easily understand that how much growth in internet consumption took place within these days.
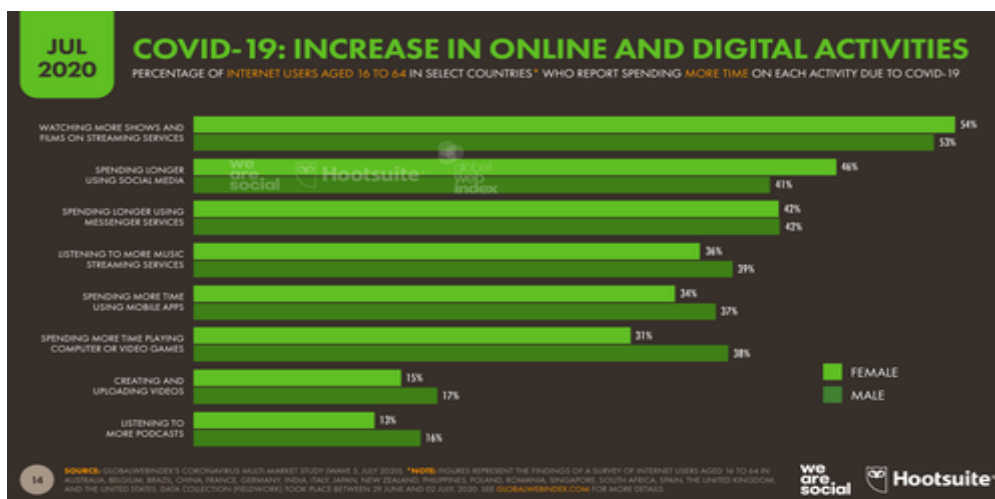

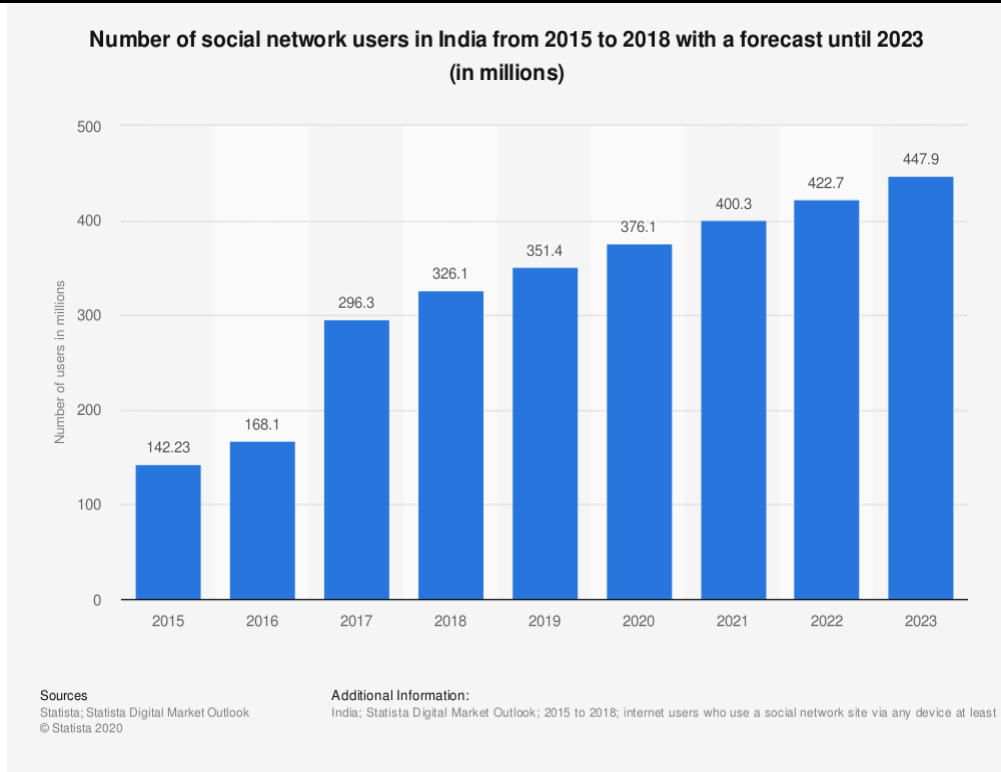*Figure 3: Internet usage during a pandemic.*

Number of social network users in India from 2015 to 2018 with a forecast until 2023 (in millions)

Figure 4:-Increase in Internet usage from 2015 to 2023

V. CYBERCRIME

Cyber Crime or computer-oriented crime that takes part between a computer and a network. Here a computer can be used as a target or a weapon. Based on a survey, between January 2020 to January of 2021, there were a huge amount of cybercrimes detected, all of them related to COVID-19. They are Spam messages, Spam E-mails with spreading malware, hacking, etc. Cyberbullies changed their mode of activities during this crisis. Not only have they target individuals but also large organizations as their victims. The persons who did these crimes are always active and alert. They monitoring the current status of their target up-to-date. The attackers exploit vulnerabilities towards their targeted ones and deploying phishing campaigns on the public, masquerading as administrative or health agencies that allow them to steal bank information and data.

The Common Cybercrimes in COVID days are

- **Phishing: -** Email attack tracking the email recipient into disclosing their secret data.
- **Denial of Service**: -Attacker controls the victim's devices and uses them to damage the normal working of the targeted device.
- **Malware: -** is a virus that performs a malicious job on a network or target system.
- **Spear Phishing**: -Another form of phishing where the attacker knows the victim thoroughly and impersonates someone they trust.
- **Man in the Middle (MitM):-** Here the attacker makes a connection between the sender and the receiver of the e-messages and intercepts their chatting.
- **Trojans: -** It's a type of malware that enters into the targeted device and damages the system.
- **Ransomware:-**It is the attack that encrypts the data of the targeted system and needs ransomware to decrypt it for further access to that data.
- **Data Breaches: -**It is a theft of data by a malicious actor.
- **Malware on Mobile Apps: -** These are malware for attacking mobile phones.

VI. CYBERSECURITY

Computer Security is also called information technology security (IT security) refers to the body of technologies, processes, and practices developed for the protection of computer systems and networks from being attacked or hacked by third-party users. This term captures more attention nowadays because government organizations, military, corporate and finance institutions, medical organizations collect and store numerous data on computer systems. These data contain significant as well as confidential data whose exposure could have negative consequences. They provide more security to user's data. It keeps data secure from unauthorized access. The following are the elements of Cybersecurity

- Network Security
- Application security
- Endpoint security
- Data Security
- Identity Management

- Database and infrastructure security
- Cloud Security
- Mobile Security
- Disaster Recovery
- End-user Education

One of the difficulties in cybersecurity is the dynamic changing nature of crimes which makes them untraceable. This pandemic to keep data securely is a big challenge for Cyber peoples or security administrators.

VII. CONCLUSION

Novel CORONA Virus will affect not only the peps lifestyle but also the entire world in some manner. Even though it creates fear around the globe, lockdown countries, forcefully instructed the people to stay at home, making them work in remote locations under a stressful environment, creates a great deal of controversy in many areas like educational areas, government, medicine areas, etc. This leads to a rise in the no of internet users. Internet became an unavoidable part of our day-to-day life. It was an ultimate factor which unable to evacuate in our daily schedules. This pandemic situation attracts people of different age categories from children, adults, senior citizens to the world of the internet does not depend on their educational qualifications. It free for those who have the technical knowledge and those who may not have them. Not only that this one eliminates the digital boundaries between countries called Digital Divide.

VIII. ACKNOWLEDGMENT

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