

Influence of Cyber Security on Social Networks

R. Varalakshmi



Abstract: In the 21st century, Media technology plays a vital role in every individual's life. The world of electronic media, found an exponential growth. Presently the media world is filled with gadgets includes TV, mobile phones, emails, egames, interactive internet games, virtual reality games, iPods, instant messenger, esports, social networks etc.. This makes the physical world smaller in today's days and helps in effective communication ranging from text messaging, multimedia message, video conferencing, virtual meetings and so on. As of today, social networks including Facebook, Twitter, Wordpress, Whatsapp, LinkedIn, Blogger, Google, Pinterest, and Wikipedia etc. has become the most powerful sources for sharing information and news updates. In addition, the cost of smartphones and internet data are reducing which makes easy penetration of this technology among people. Apart from the entertainment, the social networks created new business opportunities, sales promotions, marketing research, and customer relationship development etc. In this paper, the impact of social networks in family relationships is presented.

Keywords: Cyber Security, Family culture, Social Networks, Societal Impact

I. INTRODUCTION

The interaction of people in a virtual environment is called as Social Networks. The user can able to create, share and discuss about a specific topic of interest, freely interact and share their thoughts among their peer groups. The ideas can be shared either in the form of text, image, audio and video. Further, the information can be broadcasted to the public to spread awareness, messages like Radio, TV or Newspaper.

According to Merriam Webster, culture is defined as "the customary beliefs, social forms, and material traits of a racial, religious, or social group". A culture is applicable to world, nation, state, district, family and an individual. A family culture is the way of orderliness to be followed by each family members. From the ancestors, the culture has been transferred to generation and generation and family head will taught their habits, belief and disbelief to their children. As the world is constantly changing and technology is upgrading, accordingly the present generation family members will adopt some changes and take it forward for their next generation.

One of the disruptive technologies in the modern world is Internet. It redefines the conventional communication like postal letter by email, audio cassettes by CD/DVD, personnel meeting by video conferencing and many more. India stands 3rd position based on number of active internet users.

Revised Manuscript Received on May 30, 2020.

* Correspondence Author

Dr. R. Varalakshmi*, Department of Computer Application, TN.D.A.L.U, India. E-mail: swiss_vara@msn.com

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From the statistics, it was observed that the compound annual growth rate is 44% during the period from 2012 to 2017. Though the technology is highly penetrating, at the same time the disadvantage is that India within first five countries which were affected by cybercrime.

Social networks redefine how the people are utilizing their free time. During their leisure time, the people used to go to parks, playing crickets, beach, tourist place, temple, library, reading story books, novels, listening songs etc. Now, with the penetration of social networking website like Facebook, people are chit chatting with their friends, unknowns, and share their information.

In recent years there has been a significant increase in the rate of use of social networks at the global level. For example, Facebook has now surpassed 2.25 billion monthly active users, making the issue of piracy of user data and the privacy of such information very important.

A. Merits of Social networks

- Fast delivery of information.
- Allows people to interact, share their ideas, and post their views.
- Improves organizational communication
- Helps the business people to expand their business
- Enhance business reputation and client base without advertising.
- Create professional networks to enhance their careers.

B. Demerits of Social networks

- Fear in privacy invasion.
- Hackers to commit fraud, online scams and virus attacks
- Individual isolation from family which largely affects marriage and children.
- Health issues (backache, eyesight problem, sleeping disorder, mental imbalance etc)
- Accidental leakage of confidential information which is dangerous for national security

II. LITERATURE SURVEY

In this section, the summary of the findings of previous researchers who had carried out research in similar area has been presented.

Cole et al (2000), notified that based on his survey response, there was no substantial improvement between Internet and non-Internet users.

Lenhart et al. (2001), inferred that the penetration in Internet is boom among the children's lives. He had made surveys among people of different countries and observed that many families are buying computers with internet connection and believed that their children education will be improved.

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The parents believed that their children can do more research, self-study, learn new concept on their own and they can excel in schools. Kaiser Family Foundation (2003), had an opinion that usage of Internet had become a common and shared household activity among family.

On the other side of the coin, Nie and Erbring (2000), highlighted that use of Internet will result in increases in loneliness, depression, neglect close relationships. He made an survey among 4000 people and found that the Internet use decrease the time spent with friends and family. Turow and Nir [2000], highlighted that social networks develop the gap between parents and their kids.

Liningstone (2002) presented that parents are more worried with respect to usage of drugs, crime and quality of education rather than usage of Internet. Though, they categorize various ways that would affect family relationship. The severity of family affect is based on number of parameters like usage of other devices like mobile phone, watching television, playing video games. He further highlighted that the parents are using their Internet for their official and business activities whereas kids are used for entertainment purpose.

Mesch (2003), concluded from his survey that for the active Internet users, the time that he spent with the family is less. This is due to the fact one cannot spend time in both activities simultaneously. He concluded families that were spending less time in Internet had better relationships among family members.

Thus, from the above literature, the usage of Internet has both the positive and negative impact on the family relationship. Also, no empirical relationship or mathematical model was available to correlate the Internet use and family relationship. Further, it important to note that usage of Internet will also lead to increase in cybersecurity. Figure 1 shows that the various social media apps that are downloaded during September 2019.

| Top Social Media Apps Worldwide for September 2019 by Downloads | | |
|---|---------------------|-----------------------|
| Overall Downloads | App Store Downloads | Google Play Downloads |
| 1 TikTok | 1 TikTok | 1 TikTok |
| 2 Facebook | 2 Instagram | 2 Facebook |
| 3 Instagram | 3 Facebook | 3 Likee |
| 4 Likee | 4 Snapchat | 4 Instagram |
| 5 Snapchat | 5 Twitter | 5 Snapchat |
| 6 Helo | 6 Pinterest | 6 Helo |
| 7 Twitter | 7 WeChat | 7 HAGO |
| 8 Pinterest | 8 QQ | 8 Twitter |
| 9 HAGO | 9 LinkedIn | 9 Pinterest |
| 10 BIGO LIVE | 10 Discord | 10 BIGO LIVE |

Source: www.entrackr.com

Fig. 1. Top Social Media Apps

III. OBJECTIVES OF THE STUDY

The main objective of this study includes:

1. To analyse the amount of time spent by the family members in social networking.
2. To evaluate the quality of time spend for their families.
3. To identify the relationship among quality of social culture and social networks.
4. To identify the association between family culture and communication.
5. To evaluate the degree of loss of family communication

due to high usage of social networking.

Figure 2 shows that the growth rate of Internet in India during the recent years and the prediction upto 2023. Figure 3 shows the growth rate of social network users during the period from 1995 to 2015.

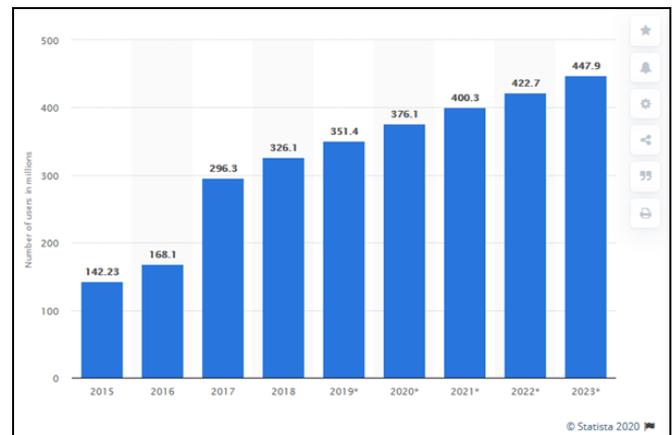


Fig. 2. Growth of Internet Users in India

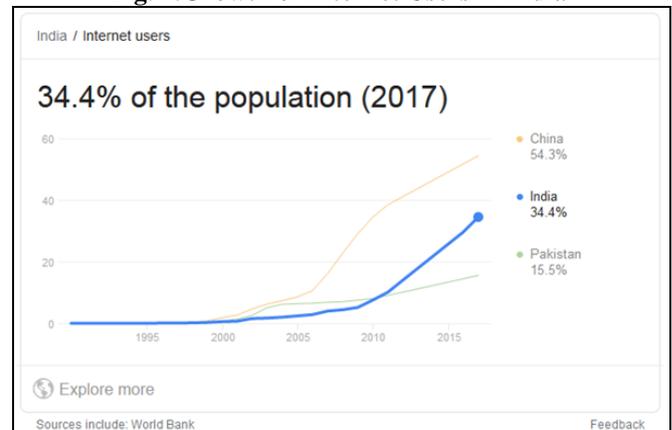


Fig. 3. Social network users in India (in millions)

IV. CYBER SECURITY

Cybersecurity is the branch of engineering deals with protecting systems and networks from digital attacks. The main objective for the hackers is to access, modify and delete sensitive data and information in order to blackmail and to extort money from users or to interrupt their business.

A cybersecurity attack can include identity theft, hacking emails, extort money, theft of financial data, family photos etc at an individual level. By misusing this this information, the cybercrime involves the actions to harm an individual. Different types of cybercrime attacks against individual are:

Email spoofing: Spoofing an email is the forgery of email header. It involves sending fraudulent emails which resemble as emails received from trusted sources. The main aim is to stole sensitive financial data includes credit card details, PIN, OTPs etc. It can be protected by proper education or a updated browser or email program that filter malicious mails.

Cyber stalking: Cyberstalking is defined as harass an individual, group, or organization with the aid of Internet or any other digital means. It includes false accusations, vandalism, defamation, solicitation for sex, slander,

monitoring or gathering information, threats and libel that is used to threaten, embarrass or harass. Spamming: Spam can be defined as sending irrelevant or unsolicited bulk messages such as phishing, marketing, advertising, spreading malware etc. sent over the Internet. They usually sent the message to a mass number of people. This malicious links will mislead or damage a user or their device or when the link is clicked, it will result in downloading malware to steal the personal information. Hacking: Hacking is to identify the weakness in digital devices includes computer, tablets, smartphones or networks to exploit its weaknesses to gain access. Nowadays Ethical hacking gaining its popularity due to its identification of system weakness, prevent attacks from cybercriminals, spying, and as a challenge or competitions.

Virus Dissemination: Virus dissemination is a process of a sending a Malicious software that it is embedded to other software and this malicious software will destroys the victim's system.

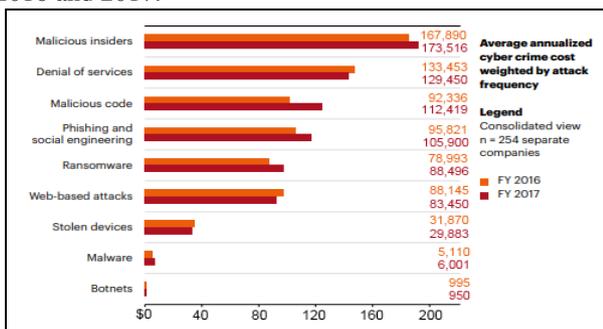
Denial-of-Service (DoS): Denial-of-Service (DoS) attack is to prevent the legitimate users to access devices, data, information systems, or other network resources because of cyber threat. DoS usually not to steal information or lead to a security breach. The reputation of the company will be lost among the clients and also results in loss of a large amount of time and money.

Ransomware: Ransomware is a malware which is used to encrypts a victim's data. The attacker then demands a huge amount of money in terms of ransom or bitcoins from the victim. After receiving the payment, the attacker will get the decryption key to get the original data.

The following steps are to be meticulously followed to prevent cyberattacks:

- Update your operating system, drivers, software and security patches.
- Use anti-virus software to detect and remove threats.
- Use strong password with combination of alphabets, numbers and symbols. Create password that are not easily guessable or using personal information.
- Don't open an email attachment from unknown trust which would be a virus or malware.
- Don't click on links from unfamiliar websites which may be a malware.
- Avoid using unsecure WiFi networks in public places which leads to man-in-the-middle attacks.

Figure 4 represent the costs of the most common attacks based on 254 companies based on their frequency of attacks in 2016 and 2017.



Source: <https://hub.packtpub.com>

Fig. 4. Average annualized cyber crime cost (in USD) weighted by attack frequency

V. RESULT AND DISCUSSION

Social network plays a vital role in human being lives. From the survey, it is observed that social networks had positive and negative impact on society and among family. The positive impacts include knowledge transfer, connecting people who are physically separated by large distance, sharing ideas and thoughts, broadcasting etc. The negative impacts include violence, cybercrime, sexual behaviors, spreading rumors, people cannot able to distinguish between reality and fantasy etc. For example, the adolescent age group people are exposed to smoking and consumption of alcohol and addicted because the fantasy personalities are doing the same in the screen.

It is sure that the time spent in the social media reduces the amount of time in spending for active and healthy activities like exercises, community service, parenting etc., Childs who were addicted to cartoon channels are exhibits the similar and aggressive behavior. Violence exposure programs had increased the anger and arousal behavior. Parents should not allow their children to watch such TV program, playing such video games which will disturb their positive mental growth results in poor academic performance in schools.

Further, it is observed that watching television results in poor peer group relationships among students which leads to anxiety disorder, isolation, seeking attention and also antisocial behavior. Due to the nuclear family structure and only one child, the child is watching Television to spend their time. However, the peer group interaction will reduce the stress among the kids and understanding socializing, sharing habits will be improved.

Though any information may be posted on the social media and as a receiver, the reliability and trustworthiness of message posted in the social media is also to be analysed before believing and further sharing.

The association between family culture and communication, family communication and social networks has also been studied. From the results, it is highly proved the increase in usage of social networks highly reduces the family culture. It is an alarming situation that everyone should take necessary steps in reducing the time spent on social networking unnecessarily. The head of the family, grand parents should actively engage their family in spending their leisure time effectively in learning skills to enhance brain activities instead of social networking. Some of the key finding include

- On an average, people spends more than 4 hours of their time daily on social networking
- Lower and higher age group people spend less time on Internet as they have not exposed to much of the technologies
- Unnecessarily spending more time on social networking will reduce quality time spending among family members.
- Positive relationship exhibits between family culture and communication.
- There is an increasing trend in cyber-attacks.

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- Lastly, a negative association lies between family culture and social networks.

VI. CONCLUSION

According to Dr. A.P.J. Abdul Kalam,

“When there is beauty in the character, there is harmony in the home.

When there is harmony in the home, there is order in the nation.

When there is order in the nation, there is peace in the world.”

Arranging social get together, family gathering, family function, keep attention on children etc., will help the child to reduce the time spent on social networking and making the child as a great citizen.

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AUTHORS PROFILE



Dr. R. Varalakshmi, research area includes Cryptography, Network Security, Cyber Security and allied areas. She has vast experience in teaching and research. She has been recognized and awarded by many forms. She is member of various professional bodies. Her research findings have been published in various International, National Journals, Conference etc. She is

an active reviewer and editorial board member.