

# A Paradigm shift in Social Networking - the Emerging Future

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## Abstract

Human being is a social being. The act of communicating to share information by speaking, writing or through signs forms an important part of being that social human being. Telecommunication Networks which grew from optic fiber to wireless applications made a huge difference to Social behavior, attitudes, beliefs and knowledge. The network operates by connecting people through computers and peripherals using switches, routers, and access points. The exchange of goods and services from 'brick and mortar' to 'click and conquer' is a tremendous growth for all business sectors. An insight on the shift from Traditional Commerce to e-commerce and from e-commerce to m-commerce is discussed. This paper provides an overview on the history of Internet and the evolution of World Wide Web along with the Virtual Communities and Web Portals. The technology that has emerged from various generations - 1G, 2G, 3G, and 4G refers to the growth of the generation next. The next level to be upgraded is 5G by 2020. This paper aims to study the changes we can expect in the emerging future with 5G Network as an upcoming trend setter.

**Keywords** – Telnet, e-commerce, virtual communities, m-commerce, 5G Network

## Introduction

Telecommunications (Telecom) is the exchange of information over significant distances by electronic means and refers to all types of voices, data and video transmission. This is a broad term that includes a wide range of information transmitting technologies such as fiber optics, telephones (wired and wireless), microwave communications, satellites, radio and television broadcasting and telegraphs. A telecommunications network (Telnet) is a collection of terminal nodes; links are connected so as to enable telecommunication between the terminals. E-commerce, electronic commerce is the process by which businesses and consumers buy and sell goods and services through an electronic medium.

Electronic commerce emerged in the early 1990s, and its use has increased at a rapid rate. Today, the majority of companies have an online presence. In fact, having the ability to conduct business through the Internet has become a necessity. Everything from food and clothes to entertainment and furniture can be purchased online. The revolution of e-commerce was marked by the invention of EFT (Electronic Fund Transfer) and ATM (Automated Teller Machines) without the exchange of paper-based documents. They include activities such as procurement, order entry, transaction processing, payment, authentication and non-repudiation, inventory control, order fulfillment and customer support through a magnetic-stripe-reader.

A virtual community is a social network of individuals who interact through specific social media, potentially crossing geographical and political boundaries in order to pursue mutual interests or goals. Some of the most pervasive virtual communities are online communities operating under Social Networking Services.

Social Networking Sites (SNS) are the web based software's that facilitate the users to create, post, get feedback for their profile from other users and do the same vice versa real space replicated through virtual platform to save time and distance in communicating information in 3D form. SNS is measurable through usage, time structure, frequency, purpose, content, image, text, voice through virtual medium of the web 2.0. Social networking has been at the core of all online activity since the delivery of the first "email" in 1969.

## Review of Literature

Social Network Sites: Definition, History, and Scholarship by Danah M. Boyd, University of California-Berkeley and Nicole B. Ellison, Department of Telecommunication, Information Studies, and Media, Michigan State University

Usability Principles for Mobile Commerce by Waqar Aziz and Yaqoob Hashmi, Lulea University of Technology, Department of Administration and Social Sciences, Division of Information Systems Sciences.

Popularity and Impact of Social Networking Sites In Cyber Age An Empirical Study On Users Of Social Networking Sites in East India by Reema Roy from Assam University.

"Impact of social network sites on perception of sociability and academic performance of college students in Bangalore city" by Deva Prasad F from CHRIST University.

Enhancing SMS as ubiquitous, stateful and secured transport bearer by Talukder, Asoke K, International Institute of Information Technology Bangalore

"Mobility in fourth generation wireless networks" by Komala, K. from Anna University.

"Social Network Analysis: History, Theory and Methodology" a book authored by Christina Prell, Assistant Professor in Sociology at the University of Maryland, College Park.

## Need for the Study

In the view of the changing dynamics of Internet users from Web Browsing to Micro Browsers, the ever rising online players witnessing the market place across the Globe. The shift that has pushed the "touch and feel" ability of Traditional Commerce to "look and analyse" of E-Commerce with a major share of shopping going online through shopping sites on the shopping carts has moved one more step ahead. Today we are only downloading applications on our Smart phones to purchase and to make the payments. So the shift is from e-commerce with Web Browsers and Web Portals to m-commerce with micro browsers and Wireless Application Protocol. This paradigm shift of social networks leads to the required study on the emerging trend and what to expect in the near future. The future lies on the Generation next, which is 5G Network.

## Objectives of the study

The objectives of the study will be:

1. Examine the factors that drive to shift from “www” on the PC to an “app” on the smart phone.
2. Ascertain the challenges the application users are confronted with
3. Examine the factors that lead the user to stick to an ecosystem which accommodates both
4. Ascertain the strategies used by the app users to retain the customer base

## Methodology

This is a conceptual study based on secondary data collected from books, journals, magazines, news papers and the internet.

## Evolution of Social Networking:

When looking at networking basics, the first step is to understand routing, switching, and wireless. The network operates by connecting computers and peripherals using switches, routers, and access points. These devices are the essential networking basics that allow the various pieces of equipment connected to your network to communicate with one another, as well as with other networks.

The encryption of social network phenomenon into the web platform, since 1997, has opened many avenues to different stakeholders in the contemporary media society. We may group the advantages of social network sites into two categories of stakeholders; firstly, to the social processes of the individual actors in the microcosm of the spectrum, and secondly, to the network of groups, organizations and institutions in the macrocosm. It is true that socialization of individuals were modeled according to the goals and guideline of the institutions, which insulated in the social structure. Nevertheless, the trends generate new equilibrium to social institutions, as in the case of social network sites.

## Stage I – Telnet and email

Telnet is a network protocol that allows a user on one computer to log into another computer that is part of the same network. Telnet is a user command and an underlying TCP/IP protocol for accessing remote computers. Through Telnet, an administrator or another user can access someone else's computer remotely. On the Web, HTTP and FTP protocols allow you to request specific files from remote computers, but not to actually be logged on as a user of that computer. With Telnet, you log on as a regular user with whatever privileges you may have been granted to the specific application and data on that computer.

Ray Tomlinson is credited with inventing email in 1972. Tomlinson worked for Bolt Beranek and Newman as an ARPANET contractor. He picked the ‘@’ symbol from the computer keyboard to denote sending messages from one computer to another. So then, for anyone using Internet standards, it was simply a matter of nominating name-of-the-user@name-of-the-computer. Internet pioneer Jon Postel, who we will hear more of later, was one of the first users of the new system, and is credited with describing it as a "nice hack". It certainly was, and it has lasted to this day.

## Stage II – Internet and WWW

Internet known as “Network of Networks” is a global network of communication. Globally, at different hours of a day millions of people are on-line and exchange messages among them as a part of relation communication or as members of virtual communities. This has given rise to a tightly inter-related world with integral consciousness, which according to Mashall McLuhan is a ‘Global Village’. This ever expanding communication space has hosted a worldwide communication processes beyond boundaries in which knowledge, values and ethics, aesthetics and lifestyles are being exchanged thus act as a generative framework of a ‘global world culture’. Due to the melting pot role of the new media, diverse cultures are getting assimilated and diffused and are being blended into a homogenized culture, which is not confined to any kind of physical barriers or national boundaries.

It’s been more than two decades, ‘World Wide Web’ available to the public, and the internet has already become an integral part of everyday life for most of the world’s population.

**Tim Berners-Lee**, a British scientist at CERN, invented the World Wide Web (WWW) in 1989. The web was originally conceived and developed to meet the demand for automatic information-sharing between scientists in universities and institutes around the world. Berners-Lee made the Web available freely, with no patent and no royalties due.

Mosaic's graphical user interface allowed the Web to become, by far, the most popular Internet protocol. The World Wide Web Consortium (W3C) was founded by **Tim Berners-Lee** after he left the European Organization for Nuclear Research (CERN) in October 1994. The W3C decided that its standards must be based on royalty-free technology, so they can be easily adopted by anyone.

The **Web**, or **World Wide Web** (W3), is basically a system of Internet servers that support specially formatted documents. The documents are formatted in a markup language called HTML (HyperText Markup Language) that supports links to other documents, as well as graphics, audio, and video files.

## Stage III – Online Virtual communities

The first recognizable social network site to SixDegrees.com launched in 1997 that allowed users to create profiles, list their Friends and, surf the Friends lists beginning from 1998. The next wave of SNSs began with Ryze.com in 2001 to help people to leverage their business networks. Likewise, LinkedIn became a powerful business service, Friendster became the most significant. Many new SNSs were launched from 2003 for several popular interests; Teenagers

showed much interest in MySpace in 2004. In case of Facebook website was launched on February 4, 2004, by Mark Zuckerberg that began in early 2004 as a Harvard-only SNS, Later expanded to include high school students, professionals eventually everyone else inside its corporate networks in September 2005. As a result, number of users increased in Facebook to the level of highly populated portals like that of population of China and India. Among social network media, 63.46% use Facebook next to You tube and Orkut.

Universally, SNS research has epitomized on “impression management and friendship performance, networks and network structure, online/offline connections, and privacy issues”. In addition, “MySpace and Facebook enable youths to socialize with their friends even when they are unable to gather in unmediated situations;

SNSs are ‘networked publics’ that support sociability, just as unmediated public spaces do” (boyd & Ellison, 2007). Thus, the synthesis of social and media networks will bring into existence a very strong distinct infrastructure for our society (Dijk, 2006).

Richard E West (2010) shows how to use online social technologies for educational purpose to students in his research. It also highlights how to build successful online learning community and its advantages. The web based survey on Facebook usage and the social capital conducted by valenzuela & Park (2008) shows a positive relationship between Facebook usage and social confidence among college students in Texas. In other words, the report highlights “moderate, positive relationships between intensity of Facebook use and students' life satisfaction, social trust, civic participation and political engagement.”

Sociology of social networks emerges from Emile Durkheim’s interaction pattern creating social structure within types and George Simmel’s structural approach to social interaction, as in his statement “Society arises from the individual and the individual arises out of association.” In this way, Network interactions shape social structure, which in turn shapes belief, attitude, behavior, action, outcomes of individuals. The structure, content, and functions of network ties constitute the complete social enquiry (Bryant & Peck, 2007). Aristotle proclaimed long ago that man is a social animal who networks with others to form human community. Sociologists’ study on Community revolves around these arguments over the centuries. In fact, Social media accelerates community formation says Barry Wellman.

#### **Stage IV – Wireless Application Protocol**

The importance of wireless communication is increasing day by day throughout the world due to cellular and broadband technologies. Everyone around the world would like to be connected seamlessly anytime anywhere through the best network. Accessing information anywhere, anytime with a seamless connection to a wide range of information and services and receiving a large volume of information, data, pictures, video and so on, are the keys features of 4G. Based on the developing trends of mobile communication, 4G will have broader bandwidth, higher data rate, and smoother and quicker handoff to provide seamless service across a multitude of wireless systems and networks. As a result, the need for seamless handoff across the different wireless networks is becoming increasingly important.

Recent advances in WSN(Wireless Sensor Networks) now witness the increased interest in the potential use in applications like Military, Environmental, Health (Scanning), Space Exploration, Vehicular Movement, Mechanical stress levels on attached objects, disaster management, combat field reconnaissance etc.

There are two types of Networks and they are

**Proactive Networks:** The nodes in this network periodically switch on their sensors and transmitters, sense the environment and transmit the data of interest. Thus, they provide a snapshot of the relevant parameters at regular intervals. They are well suited for applications requiring periodic data monitoring.

**Reactive Networks:** In this scheme the nodes react immediately to sudden and drastic changes in the value of a sensed attribute. As such, they are well suited for time critical applications.

## Stage V – Mobile Networks

G in 2G, 3G and 4G stands for the “Generation” of the mobile network. Today, mobile operators have started offering 4G services in the country. A higher number before the 'G' means more power to send out and receive more information and therefore the ability to achieve a higher efficiency through the wireless network.

The main difference between the two mobile telephone systems (1G and 2G), is that the radio signals used by 1G network are analog, while 2G networks are digital.

GSM (Global System for Mobile communication) is a digital mobile telephonic system that is widely used in Europe and other parts of the world. GSM uses a variation of time division multiple access (TDMA) and is the most widely used of the three digital wireless telephony technologies (TDMA, GSM, and CDMA).

4G the term used for the fourth generation of cellular communications, offers speed that are about 10 times faster than they are on current third-generation, or 3G, networks. Its higher data speeds could make smart phones much more comparable to PCs, giving them better multimedia and gaming.

The Next generation mobile networks, 5<sup>th</sup> Generation, are the proposed telecom standards beyond the current standards. 5G research and development aims higher 1 Gb per second simultaneously to many workers on the same office floor. It also aims at significant Spectral efficiency enhanced compared to 4G. Coverage improved, signaling efficiency enhanced and Latency reduced significantly compared to LTE.

## Conclusion

The growth of Networks will keep upgrading with new research studies bringing in new devices and improved versions to keep the needs catered completely. To conclude the words of Jeanette Rankin, “You take people as far as they will go, not as far as you would like them to go.” The world moving in a fast pace will go on with the “better than before theory”. According to Deepak Chopra, Giving connects two people, the giver and the receiver, and this connection gives birth to a new sense of belonging. The evolution of Internet to 5G is wonderful journey of time with technology.

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