

## **A DESCRIPTIVE STUDY OF EVOLUTION OF SOCIAL MEDIA AND ITS INHERENT CHALLENGES**

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### **Abstract**

The evolution of Social Media is not an outcome of some deliberated efforts but just the by- product of the Digital Revolution and expansion of Internet services. It is quite interesting to explore the chronology of advent of Digital Era and Internet Revolution in context of the world. Progress in the field of digital technology paved way to more precise and smooth sharing of information and prepared a base for the boom of electronics. Internet Revolution brought Media platforms on the very screen of our personal computer and mobile phones. These developments facilitated updating and sharing of information and prepared foundation of Social Media. Today Social Media has developed as a tool to communicate with groups and people, far away physically but just a click away virtually. Seeing its growing popularity we need to understand the inherent challenges of Social Media. One such challenge is authenticity of the content as there is no regulatory authority or the observers. Authenticity of people one deals with in a physical context is much aided by visual and behavioural clues that are absent in online interaction therefore issue of authenticity becomes important in Social Media. Social Media also has to cope up with the issues of legality involved due to unrestricted dissemination of information which jeopardize the trust of common individuals and also leads to legal intricacies. Issue of hate speech, defamation and privacy invasion raise doubts on the credibility of Social Media. The present Paper tries to make a descriptive study of these developments which changed the ways of our interactions and information sharing. Paper also focuses on the challenges mentioned above so as to make tool of Social Media more effective.

**Keywords:** Digital, Digitization, Social Media, Legal Challenges, Issue of Authenticity

### **INTRODUCTION**

In electric devices electric currents are changed to other forms to produce different forms of energy like sound, thermal power, light etc. Speaker changes electric currents to sound and electric stove changes it to thermal energy. Similarly in the devices like computers or mobile phones electric currents are used for encoding information. These encoded information are saved and transmitted through electronic signals. Use of electric current in form of electronic signals is collectively known as Electronics.

Encoding of a message from an electric current is done through rapid change of voltage over and over again. The potential difference between two places in a circuit can be expressed

as a voltage. Voltage is the pressure that makes electricity (electric current) flow. Voltage in an electric circuit can be changed in two different ways resulting in two different types of electronic signals known as Analog Signals and Digital Signals. Analog signals consist of continuously changing voltage in an electric circuit. These were the first electronic signals to be invented. They were used in early computers and other early electronic devices. Analog signals are subject to distortion and noise, so they aren't used as often anymore. They are used mainly in microphones and some mobile phones to encode sounds as electronic signals.<sup>1</sup> Today, most electronic signals are digital signals. Digital signals consist of rapid pulses of voltage that repeatedly switch the current off and on. This type of signal encodes information as a string of 0's (current off) and 1's (current on). This is called a binary ("two-digit") code. The majority of modern electronic devices, including computers and many mobile phones, encode data as digital signals. Compared with analog signals, digital signals are easier to transmit and more accurate.

Media refers to any kind of communication channel that serves as a medium to enable information to reach a large group of people. There are several types of Media. There is Print Media consisting of magazines, newspapers, publishing industry and the like, Mass Media industry such as news channels on TV, Radios and so on. There is also Online Media that is the information we consume on websites. Cinema, photography and published books are also forms of media that are subtle but important.

History of Media has evolved from the Manuscripts to Print and then Analogue Electronic to Digital Electronic modes, used in Mass Media. In the very beginning of civilization people or groups communicated their views and ideas through handwritten manuscripts which had its limitations in terms of reach and circulation. The invention of mechanized Printing Press in Europe in 15<sup>th</sup> century sped up publishing and circulation of writings. Books and periodicals were now regularly published and circulated across the distances.<sup>2</sup>

The era of Analogue Electronics Media began with the late 19<sup>th</sup> and early 20<sup>th</sup> century when Radio and Television developed as more effective forms of Media whose broadcast covered larger physical areas and influenced multiplicity of audiences. With coming of Modern Computers the Media also got benefitted with numerous storages, operations and control tasks got digitized now. Early computers were meant to be used only for calculations. Simple manual instruments like the Abacus have aided people in doing calculations since ancient times. Early in the Industrial Revolution, some mechanical devices were built to automate long tedious tasks, such as guiding patterns for looms. More sophisticated electrical machines did specialized analog calculations in the early 20th century. The first digital electronic calculating machines were developed during World War II. The first semiconductor transistors in the late 1940s were followed by the silicon-based MOSFET (MOS transistor) and monolithic integrated circuit (IC) chip technologies in the late 1950s, leading to the microprocessor and the microcomputer revolution in the 1970s.<sup>3</sup> The speed, power and versatility of computers have been increasing dramatically ever since then, with transistor counts increasing at a rapid pace, leading to the Digital Revolution during the late 20th to early 21st centuries.

Digitization of Media industry led to the problems of identity verification, contract violation, judicial jurisdiction in case of dispute and above all infringement of right to privacy and publicizing unauthentic and false pieces of information.

### **Digitization, Helping Media Industry**

ENIAC (Electronic Numerical Integrator and Computer) was the first Electronic Digital Computer that used the Decimal System and worked with Vacuum Tubes to solve numerical problems developed in 1946, to EDVAC (Electronic Discrete Variable Automatic Computer) which was based on Binary System, is also known as stored programme computer (Program instructions held in memory), which required fewer components in 1955, rapid digitization set in and Modem technology was introduced<sup>4</sup>

The development of computer storage capacity, database management systems, the invention of digital cameras, the growth of cellular networking, and finally the use of the Internet as the ultimate Networking solution were just a few of the stages that aided in the digitization, expansion, and transmission of information via mass media. The widespread use of the Internet altered the landscape in 1990s. Wide accessibility through Internet made Electronic Media more popular.

IBM, a Technology Corporation based in US announced launch of 305 and 650 RAM Accounting incorporating 350 Disc storage Unit in the year 1956. It reduced delay in processing of data. The term database was first time used in the 1962 as a collection of entries containing item information that can vary in its storage media.

Charles Bachman working with Computer Division of General Electric Company of US developed first Database Management System known as Integrated Data Store. Scope and reach of digitization expanded with reducing price and increasing power of electronic components. This was caused due to impact of Moore's Law which declared that the number of transistors in a dense integrated circuit doubles about every two years. This law of Gordon Moore was published in 1965, revolutionized the electronics industry.<sup>5</sup>

Machine readable cataloguing system adopted by libraries of United States in the year 1968 which was a further push to digitization in information industry.

Theoretical base for Relational Database System was provided by E F Codd who gave relational model of data for large shared data banks in the year 1970. Later EF Codd was awarded Turing Award for his wonderful work on database Management System which was now largely being used from ATM Machines to purchase of Airline Ticket, which took benefits of digitization to the doorstep of common individuals.

Michael Hart in 1971 launched the Project Gutenberg to make copyright free work electronically available. This also facilitated to prepare a reservoir of information which could be shared without any legal hindrances.

An American Cable TV equipment manufacturing company General Instruments succeeded in making digital HDTV signal into a conventional broadcast channel in the year 1990. This paved

way for upcoming digital era in TV industry. This was a sharp move from using analog signals to digital signals in Media industry. <sup>6</sup>

### **Chronological Development of the Computer Networking and Evolution of Internet**

Advanced Research Project Agency Network called ARPANET was perhaps the first project of networking in which Scientists and Engineers of US brought their works together in the year 1969. This was the project started for academic and research purposes but it showed the way to develop an integrated system of information sharing later known as Internet.

Mr Paul Baran, an engineer of Rand Corporation, an American think tank proposed a communication network system for American air force in which two points can remain intact despite damage to other communication points. This was called a Distributed Network system.

Later on another scientist of ARPA Project named Lawrence Roberts took the work of Baran further by working on the creation of Distributed Network. Leonard Kleinrock who was an American scientist was also working on Distributed Network alongside Lawrence Roberts. <sup>7</sup>

Bob Kahn and Vinton Cerf prepared fundamental communication protocols called Transmission Control Protocol (TCP) and Internet Protocol (IP) by 1982. These protocols tell the procedure through which data moves in a network. Here first time the word 'Internet' was used by Vinton Cerf. When asked to explain my role in the creation of the internet, I generally use the example of a city. I helped to build the roads—the infrastructure that gets things from point A to point B.-**Vint Cerf, 2007.** <sup>8</sup>

Paul Mockapetris and John Postel invented DNS (Domain Name System) in 1983 which took networking beyond academics. Rather than simply looking up host names, DNS created easily identifiable names for IP addresses, making the Internet far more accessible for everyday use.

Tim Berners Lee was the British scientist credited with the development of World Wide Web while working in CERN Laboratory in the year 1989. Initially it was meant for automated information sharing between scientists in universities and research institutes. He was also creator of the principles like HTML, HTTP and URLs on which modern day Internet works. <sup>9</sup>

Marc Andreessen was the American entrepreneur and software engineer who founded MOSAIC the first widely used web browser in 1993.

### **Impact of Mobile Phones and Internet Revolution**

Wireless digital transmission came with the introduction of 2G technology in communication and data sharing in 1990s. This was based on Digital Signals in place of earlier used Analog Signals in telecommunication. It also increased data transfer speed and introduced system of SMS (Short Message Service) and MMS (Multimedia Message Service). This was a revolution in communication and data sharing which brought telephone in the very hand of individuals during mobility. This mobile revolution was going to change the whole of Media industry in

time to come. First 2G cellular network was launched in Finland in 1991 using mobile phones and cellular towers for communication and information sharing purposes.<sup>10</sup>

O'Reilly Digital Media group launched first website to offer advertisement through GNN (Global Network Navigator) in May 1993.

Hot Wired prepared website to sell banner advertisements for big corporate in October 1994.

National Digital Library Programme began in 1995 digitizing archival materials of Library of Congress.

The Norwegian Broadcasting Corporation (NRK) launched first Digital Audio Broadcasting (DAB) channel in June 1995.

On November 22, 1995 Toy Story opens in U.S. theaters, the first feature-film to be made entirely with computer-generated imagery (CGI).

Internet Archives was established by Brewster Kahle in 1996 which became a comprehensive library to access almost every site on the web. PANDORA Project and Heritage Project also launched in the same year as Web Archives.

Digital television transmission began in UK and US in 1998 paving way for Digital TV in place of Analog TV.

In 1998 Digital Television transmission commences in the U.K. and the U.S., launching the process of converting and replacing analog television broadcasting with digital television.

In September 2000 MP3 player manufacturer, i2Go, lunches a digital audio news and entertainment service called MyAudio2Go.com that enabled users to download news, sports, entertainment, weather, and music in audio format.

Thus we see in 50 years time the scenario changed and through various experiments the world of Media entered into the fully digital era where storage of data, audio and video presentation of news items by use of digital camera and computer graphics and also transmission got digitized.

Growing use of mobile phones and growing demand of Internet Access compelled the telecom industry to broaden the access and use of mobile phones and data sharing services through the launch of 3G technology in the beginning of new millennium. This was also called broad band technology which provided more clear and powerful communication and data sharing network. 3G technology brought faster internet connectivity on mobile devices. This made video call, use and sharing of multi- media, chatting and emailing more convenient and accessible. This was a real revolution in the field of telecommunication and data sharing. 11

### **Advent of Social Media**

Discussion in previous pages reveals how digitization and computer networking along with Internet Revolution and mobile phones made it convenient to share information through voice, text and multimedia by the end of previous millennium i.e. 20th century. In parallel to these

developments efforts were on since 1970s only to provide platforms on computer where views, ideas and interests of the people could be shared.

Bulletin Board System (BBS) developed in 1970s can be regarded as the precursor of social media of modern times. They were hosted on personal computers and are accessible to one person at a time. It was a kind of website allowing users to log on and connect with each other.

Usenet system was developed by Tom Truscott and Jim Ellis in 1979. <sup>12</sup> It was a programme developed on computers for sharing of articles and post from world- wide.

Internet Relay Chat (IRC) was introduced in 1988 as instant messaging service on computers while ICQ was the first instant messaging programme for PCs, developed by an Israeli company Mirabellis in 1996. Six Degrees was the first social media platform in the true sense, developed in the year 1997 but unfortunately shut down in 2001. It had around a million membership. Asianavenue, Mignete and Black Planet were few other social media platform developed during the period with advance technology allowing users to add friends and create their own personal or professional profiles.

Friendster was the first proper social network as we understand social media today. It was launched in 2002 reaching to around hundred million subscribers. It made the social networking safer along with searching your friends facility. This was discontinued around 2015. LinkedIn started in 2003 was initially meant for providing social network service for business purposes. It provided private messaging facility.

Another important social media site launched in 2003 was Hi5 which allowed users to decide if they prefer to be seen within network or not. It had users from Asia, Africa and Latin America.

The most popular social networking site of today Facebook, was launched in 2004 in Harvard by Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz, and Chris Hughes, all of whom were students at Harvard University. It allows its users to post content and personalize their profiles. People could send receive private messages and even upload their posts on their walls for public viewing. It is now being used by users with advanced editing facilities which has also attracted advertising groups to target and reach their specific audiences. <sup>13</sup>

There was a flood of social media in the beginning years of the current millennium. One popular social media group was My Space. It was launched in 2004 and in merely two years it became the most popular social media site of the world. With MySpace, users could customize their profiles completely, embed videos and post music. It also facilitated private chatting among its subscribers.

Youtube became the first video hosting platform when it was launched in the year 2005. It facilitates uploading of videos by the users and also provides monetization on viewership.

The most popular social media platform among the elite class across the world today is Twitter. It came into being in the year 2006. It has developed from the mobile SMS platform to sharing of news and views platform in form of text or audio- video clips.



Instagram started functioning as visual communication and social interaction site in the year 2010. Photos and video stories can be shared by the users which makes it a lively social networking platform today. Its filtering features make users post and pictures more presentable.

### **Modern Day Challenges to Social Media**

Social Media today has expanded our social circle. Our views, ideas and thoughts are reaching millions of individuals in a click of mobile key. Virtually the world has changed to a global village where we can see and share information and entertainment in a fraction of second. This uncontrolled flow of information through ever increasing membership of social media has posed a number of challenges before the global community and this is the reason why many autocratic regimes world over have curtailed digital freedom of their people. We will discuss now few of these challenges to social media for which social media is criticized among various sections or social groups.

Authenticity of the information, floating on social media seems to be the biggest of the challenges to it. Sometimes individuals or groups initiate and circulate false and fake information under some vested interest or agendas. Detecting fake news from the social networking site is a cumbersome task. It gets tougher when there is a need to consistently keep watch on these fake posts and to take corrective measures. There are no specific dedicated agencies to have check on fake posts on social media. Depending over agencies like Police for false news detection and adopting corrective measures would be just an eye wash. Verifying veracity of information has been an issue not only in this era of digital media but it has been a problem since the age of Print Media. The distorted, inaccurate or false information acquires a tremendous potential to cause real impacts, within minutes, for millions of users on social media particularly and that makes issue of authenticity a serious point of concern.

We can better understand genuineness and authenticity of the persons we meet physically more by their behavior and responses or gestures but this is not possible when we come across a person virtually. This has made the world of social media more suspicious about the authenticity of the users or the posts.

Issue of Intellectual Property rights is another challenge to the Social and virtual media where it is very difficult to determine ownership particularly while dealing with intangible goods. The creativities in terms of audio or video keep floating on social media and copied and edited by different individuals which leads to dispute in rights over Intellectual Property.

The creators who produce musical, dramatic, artistic or literary works and the producers of sound recordings or cinemas have an exclusive right to protect their work known as copyrights. They become helpless fellow in this era of social media where we deal with unknown individuals.

Similarly in the business world issue of trademark is often compromised while interacting on social media. Trademark is said to be infringed when a person for the purpose of his business uses a mark that is deceptively similar or identical to the trademark of another company's registered trademark. With the companies accessing online mode of business, they have taken

another responsibility of providing safeguard to their trademark over virtual world so that their trade mark remains protected. Similarly, in digital media, it is easy to lift domain names by making slight changes using certain characters.<sup>14</sup>

Another important violation or infringement of Intellectual Property Rights is the issue of misuse and copying of an invention which has been patented to an individual or group, giving exclusive rights over such inventions generally for a period of twenty years. In modern digital world people uses the exclusive rights over an invention knowingly or sometimes unknowingly. Although there are provisions of getting digital patent over computer based invention but this is not sufficient to protect all infringements of Patent rights particularly when we hardly know the person sitting other side of the digital platform.

Social media allows freedom of expressing one's opinion on the public platform but it brings along with the danger of misuse of this freedom by spreading hate content or messages on the digital platforms. Hate speech refers to those words, either spoken or written, gestures or other such visible representations expressed with the intent to incite violence or cause fear amongst other people in the surrounding. The circulation of hate speech through social media causes hatred in the society and with offensive language and derogatory comments it results in physical or mental violence, creating atmosphere of fear and discomfort all around. Online trolling, threats and provocations also pose danger to a cultured and civilized society.

Due to such a wide presence of social media, anyone just by merely having access to the internet can post such hate speech or spread hatred in any manner and on any platform. Although sometimes these remarks of hatred are subtle, they also have the possibility of taking an ugly turn leading to serious legal issues.

Another major challenge posed by social media is the issue of defamation. Defamation is an offence in penal code of various countries. Passing defamatory statements against someone that results in injury to his reputation is known as defamation. As per Section 499 of the Indian Penal Code, 1860, the act of a person who by words either spoken or written or by signs or any other visual representations states or publishes any matter regarding any person with an intention to injure, or knowing or having a reason to believe that such statement or publication will injure the reputation of such person is said to commit the offence of defamation against such a person. A statement must be false and cause injury to the reputation of a person for it to be rendered as a defamatory statement.

In today's digital world abundance of information of an individual is available online which can be used for creating fake facts or fabricate information about a person and circulate it on social media. It becomes very difficult to track down each offender in these matters. Every individual has his own discretion to reveal a part of his or her private life but in the era of the virtual world and social media a lot many information about a person comes out on the public domain, on the basis of which he or she is judged and many times ridiculed too. More often the personal profile available on virtual world creates havoc in one's personal life when someone circulates it through social media to gain unlawful benefits or to tarnish image of an individual.<sup>15</sup>



In February 2021, WhatsApp updated its privacy policy and asked its users to accept the updated policy in order to continue using the app. It stated that the said update is for enhancing data security and privacy. Although WhatsApp has been sharing user data with its parent company i.e, Facebook for a long time, it recently accepted this fact openly resulting in a massive backlash from its users.

## CONCLUSION

Discussion in above pages have shown how various stages of digitization brought boom in Media industry which became more accurate, data rich and transmission savvy. We have also seen in the above discourse, how various developments in the process of Digitization impacted Media Industry by improving methods of storage of data, audio and visual presentation and transmission of information. These advances resulted in digital revolution and ultimately resulted in the advent of Social Media. Meanwhile the Internet Revolution and cellular technology brought Social Media in every nook and corner by depicting it on the very screen of our personal computer and mobile phones. Initially Social Media Platforms like Six Degrees, Asianavalue, Migente and Black planet helped users to create their profiles and add friends to interact on virtual mode. The process intensified in the start of 21<sup>st</sup> century when Facebook, YouTube and Twitter started their operations in the years 2004, 2005 and 2006 respectively. Today even after 15-20 years these platforms have formed the backbone of Social Media worldwide.

Alongside the advancement of Social Media arose a number of challenges which were bound to be there because of the nature of this new media which does not restrict users nor lay down any guidelines to use social networking cautiously and safely. These challenges have started creating great difficulties. These difficulties can be countered by following the steps, mentioned below-

There is a need of proper policy to regulate social networking platforms which includes essential changes required in our justice system in this era of social media by incorporating stringent laws on violation of laid down norms.

Individuals need to act judiciously to share their personal data and uploading of posts on digital and social media.

The identity of the millions of users is required to be verified and authenticated by well-developed digital mechanism so that identity verification does not become a hurdle or reason of delay to participate in the virtual world.

Fresh laws are also required for digital protection of Intellectual Property Rights for curbing its violation and misuse.

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