Digital Media: A Mini-Review

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ABSTRACT

Digital media refers to content formats that are accessible on digital devices. It is an electronic medium that uses digital codes rather than analog signals. It is the digitized content that can be transmitted over the computer networks such as the Internet. Digital media is simple to access and to disperse through digital storage mediums and the web. It is often put away on digital devices such as hard drives. Easier means for storage and distribution has led to the success of digital media. This paper provides an introduction on digital media, including its various types, applications, benefits, and challenges.

KEYWORDS: technology, digitalization, digital technology, digital media, social media

INTRODUCTION

Before the digital age, the most popular forms of media were analog or traditional media: radio, newspapers, magazines, billboards, journals, books, and other printed materials. Since then, the technological revolution has brought with it many new types of media. The first media we could truly call digital appeared with digital computers. They employ binary code and Boolean logic to process and store information. Unlike traditional media, digital media is transmitted as digital data (sending binary signals — 0s and 1s) to devices that translate them into audio, video, graphics, text, etc. While traditional media has long been central to informing the public and focusing public attention on particular subjects, digital media is helping to amplify the response to humanitarian crises and to support those afflicted by these crises. Today, the average American now spends more time with digital media than traditional media.

Our world is increasingly digitalized. As illustrated in Figure 1, digitalization has been rapid [1]. The defining difference between the modern and the early age was the fact that early media was analog. It has been observed that the rise of digital media (the Internet, computers, video games, compact discs, etc.) marks one of the great events of our time. Digital media is a relatively recent means of directly communicating with our audiences. Information aimed at an audience can be delivered in many different forms such as print (books, newspapers, magazines, etc.), billboards, banners, posters, direct mail, electronic (radio, television, computer), social media, etc.

WHAT IS DIGITAL MEDIA?

Digital media basically involves using technology like the Internet and electronic devices to create content, such as audio and video, websites, social media, and video games. It is any kind of media which covers content delivered through digital platforms including electronic media, mobile phones, computers, podcasts, applications, etc. Digital media is somewhat similar to traditional media (e.g. books, newspapers, magazines, radio, and TV) in terms of its ability to deliver content to potential customers; it

differs only in the sense that it is totally digital in nature. Typical examples of digital media include software, digital videos, images, web pages, databases, digital audio, and ebooks. Some examples of digital media are shown in Figure 2 [2].

Digital media has allowed individuals to be much more active in content creation.

Digital media companies are include Google, Netflix, Apple, Facebook, Twitter, and Amazon. The impact of digital media has brought about a technological revolution. The digital media created a whole new world in the fields of business, journalism, entertainment, education, publishing, commerce, and politics.

A major reason for the success of digital media is that it can be manipulated. For example, photographs can be resized, edited, and modified in ways to make it look better.

Today, digital media has become a part of our lives. It has made our lives easier, help in doing business effectively, get more customers, and reach out to people worldwide [3].

TYPES OF DIGITAL MEDIA
Digital media is one which can be created, viewed, modified, communicated, preserved on electronics devices. It consists of a wide array of websites, tech devices, and platforms. It is either assets or content. There are 3 types of digital media [4]: (1) Owned media, which is unique to your brand or any online asset that you control; (2) Paid media, which promotes your online content to improve traffic to your owned media assets; and (3) Earned media, which is advertising generated by your customers.

There are different types of digital media including the following [5]:

➤ *Audio:* Audio forms of digital media include digital radio stations, podcasts, and audiobooks. Millions of Americans subscribe to digital radio services such as Apple Music, Spotify, Tidal, Pandora, and Sirius, which provide a wide range of musical stations.

➤ *Video:* Many digital media outlets are visual, from streaming movie and television services such as Netflix and YouTube.

➤ *Advertising:* Advertisers have made their way into the digital media landscape, taking advantage of marketing partnerships and advertising space wherever possible.

➤ *Social media:* Worldwide, popular social media include Twitter, Facebook, Instagram, LinkedIn, WhatsApp, Instagram, and Snapchat, which

enable their users to interact with one another through text posts, photographs, and videos. Since these media are common, they will be treated fully in the next section.

SOCIAL MEDIA
All media are social in the sense that they establish and maintain relations among humans as individuals and collectives. A social media is any medium of communication that allows two-way interaction. Social media are computer-mediated communication tools that enable users to share and consume content through varied modalities such as text, image, and video. Social media (or social networking) is a universal phenomenon. It is the most popular online activity worldwide. It empowers people to share their opinions with others online. It has opened new ways of communication in the hyper-connected world. It has become an integral part of modern society as they provide means of interacting and socializing [6]. Anyone with access to computers and the Internet can participate in social media.

Social media takes on many forms. The six basic forms are: (1) social networks such as Facebook and Twitter, (2) blogs, (3) wikis (4) podcasts, (5) content communities, and (6) micro blogging. These and other activities on the social media are illustrated in Figure 3 [7].

The six most popular social media platforms are described here [8].

➤ *Facebook:* This is the most popular social media in the US and the rest of the world. It was launched on February 2004 by Mark Zuckerberg (ex-Harvard student). Facebook can sensitize individuals (consumers) about many products and services. A company can use Facebook to communicate their core values to a wide range of customers.

➤ *Twitter:* Twitter was launched on July 2006 to provide a microblogging service. It allows individuals and companies to post short messages, share content, and have conversations with other Twitter users. Many Twitter posts (or "tweets") focus on the minutiae of everyday life. Twitter is well known as the most popular microblogging site.

➤ *LinkedIn*: This is a networking website designed for the business community. It was created in 2002 by Reid Hoffman It allows people to create professional profiles, post resumes, and communicate with other professionals. LinkedIn is now the world's largest social network for professionals. It can be used as a tool for career management and job hunting.

➢ *YouTube*: YouTube has established itself as social media. It was launched in May 2005. It allows individuals to watch and share videos. YouTube may serve as home to aspiring filmmakers who might not have industry connections. It is most popular online video community in the world. Searching on YouTube is second only to Google.

➢ *MySpace:* MySpace was established in 2003 by Specific Media and Justin Timberlake. Its main appeal is the ability to connect with brands and individuals. Its usage has declined over the years.

➢ *Instagram:* This is a social network that is currently only available through a free iPhone app. It is an image-based social media platform. It allows users to send and share videos and photos. Users can find and follow individuals and brands. It has become popular among young social media users, aged between 12 and 24 years.

Other social media include Tumblr, Reddit, Pinterest, Flickr, Forum, Yelp, Snapchat, Bebo, WeChat, Foursquare, Goodreads, Tik Tok, Google+, and Vine Camera. The following are the statistics for monthly users of the top 10 social media apps globally in 2021 [9]:

1. Facebook – 2.89 billion
2. YouTube – 2.29 billion
3. WhatsApp – 2.00 billion
4. Instagram – 1.39 billion
5. Facebook Messenger – 1.30 billion
6. WeChat (Weixin) – 1.25 billion
7. TikTok (Douyin) – 1 billion
8. LinkedIn – 800 million
9. QQ – 591 million
10. Sina Weibo – 566million

APPLICATIONS OF DIGITAL MEDIA
Companies and individuals use digital media for various reasons. Digital media are used in various industries such as entertainment, ecommerce, healthcare, education, business (marketing and advertising), finance, retail, government, military, sports, television. gaming, and publishing. Some of these applications are discussed next.

➢ *Marketing:* Digital media provides a very substantial customer base for the marketers. It is proving to be the pioneer in marketing platforms because it is highly cost effective. For example, websites, email marketing, interactive blogs, mobile apps, and SMS services provide medium for promoting marketing content to the customers. The interactivity and social media aspect of digital media makes it really important for marketers to use them effectively in addition to traditional channels [2].

➢ *News Broadcasting:* Digital media is playing a central role in the news broadcasting industry. The broadcasting companies have been optimizing their digital news to increase efficiency and reach out to a wider audience. For example, BBC and SKY news have invested millions in their digital offer, making sure that their viewers and listeners have total faith in what they see on their websites [10].

➢ *Children's Use of Digital Media:* Today's children are digital natives and they are immersed in digital media. Digital technologies promote interactive and social engagement; it allow children instant access to entertainment, information, and social contact. Digital media allows information sharing including text, photographs, video, and audio. Most children primarily use mobile technology and watch YouTube or Netflix. A large minority of them play video games or cartoons and may be involved in video-chatting. Lines are getting blurred between media use for communication versus for entertainment. Commercial video games have incorporated cutting-edge graphics and exciting stories. The benefits of social largely depend on a child's age and developmental stage. High use of social media has been linked to obesity, cardiovascular risk, cyberbullying, Internet-initiated sex crimes, and online sexual images (pornography). Parents should regularly discuss online behavior of their children, find out about their child's online friendships and relationships, and maintain open communication about issues. Pediatricians can help families identify negative online behavior and minimize unhealthy behaviors [11].

➢ *Learning Through Digital Media:* Where, when, how, and what we learn is changing rapidly. Teachers need to consider how to engage learners with content by connecting to their current interests. The altered roles of the teacher and the student substantially change teaching itself. Digital media can be used for learning on campus and off. Learning with digital media is exploring radically new approaches to instruction. Digital media can play a positive role in this process of transformation. Today, learning is at least as much about access to other people as it is about access to information. Such participatory learning also assists learners to reflect on social justice, love, history, and ethics in addition to preparing them for career or vocational training. Digital learning takes place online, in the university classroom, in high schools, museums, after school

programs, and public libraries [12]. A digital lab is shown in Figure 4 [13].

Other applications of digital media include brand recognition and digital media parenting.

BENEFITS

Digital media has greatly influenced our daily lives in the way they connect, communicate, work, and collaborate. It has been proven to provide an effective means of communication for the businesses and the customers. Its benefits to the community at large are many. It has enabled several opportunities for communication, community building, and social interaction, breaking the barriers of location. It has provided underserved communities with better opportunities. It has improved the quality of life for professionals worldwide. Today, the modern world is populated by digital media devices (such as video-on-demand, video games, digital audio, AR, VR, animation, and weather app on a smartphone console); they are flourishing because they are engaging and easy to use.

Digital media facilitates social interaction and empowers people. It connects people as never before and enables users to maintain friendships across time and distance. It can help to deepen relationships and facilitate the formation of support networks. People can use social media platforms to support family and friends in times of crisis. By facilitating social interaction, digital media can reduce emotional stress [14]. Digital media can be used to facilitate life-long learning. It can help to close skill gaps by supporting teaching and self-education. Digital media has led to entirely new careers. Other benefits of digital media include [2,15]:

➢ Digital media helps companies connect with its target audience.

➢ It empowers people and facilitates social interaction.

➢ It plays a central role and offers many benefits to the ordinary citizen.

➢ It increases civic participation, gives people a voice and facilitates the creation of communities.

➢ It is revolutionizing how work is done.

➢ It has facilitated education and life-long learning.

➢ It helps increase sales and business.

➢ It allows people to have access to information and make well-informed decisions.

➢ It helps people to respond in real time and expose certain ills such as political corruption and unfair business practices.

➢ It has enhanced information sharing around the world.

➢ It allows people around the globe to build communities, organize action, and make their voices heard on various issues.

➢ Online financial support is growing in response to humanitarian crises.

➢ Digital media is used for attracting talents, especially young, digitally savvy workers.

➢ It has opened up and eliminated many barriers of information exchange and gone beyond national boundaries.

➢ Using digital media helps establish the brand using all the channels that customers use.

CHALLENGES

Digital media has both positive and negative impacts on society. Copyright challenges are spreading to every aspect of digital media. Digital media copyright protection is under the umbrella of intellectual property protection technology. Content creators such as YouTube must follow guidelines set by copyright, IP laws, and the platform's copyright guidelines [16]. Due to its excessive use by humans, social media can negatively influence their behavior and mental health. Other challenges include:

➢ It has increased the ease of spreading propaganda and harassment.

➢ Over the years, digital media has broken the social bond that existed between humanity.

➢ Social media (such as computer games, messaging, and dating websites) can be addictive.

➢ Research has identified negative health outcomes for children immerse in digital media.

➢ Risks of social media include negative health effects on sleep, attention, and learning.

It is important to understand the benefits of digital media and how to reap from them while minimizing the negative effects.

CONCLUSION

Digital media is any form of media that uses electronic devices for distribution. It may be regarded as a form of communication that can be stored and communicated via computers. Digital media has become part and parcel of the global community. Consumers are now spending 6 ¾ hours per day on line.

The role of digital media is increasing in everyone's life. Its growing popularity is revolutionizing the creative landscape and creating new business models.

Without doubt digital media is the future. Trends point in that direction. Organizations across industries value skilled professionals who can create graphic designs, website designs, digital media, video games, motion graphics, etc. Digital media serves a diverse career market in industries such as advertising, marketing, software, web and app development, graphic design, and game design.

Due to the sudden surge in the popularity of digital media, many institutions around the world are offering professional digital media courses. The courses will help prepare students for the workforce to create meaningful digital experiences. On completion of these courses, a students can take advantage of whole range of job opportunities. Since digital media is a dynamic industry, one needs to stay current to remain relevant. Digital media experts need the right knowledge and skills to recognize and anticipate digital trends, and leverage technology to stay abreast. More information about digital media can be found in the books in [12,17-44] and the following related journal: *Journal of Quantitative Description of Digital Media.*

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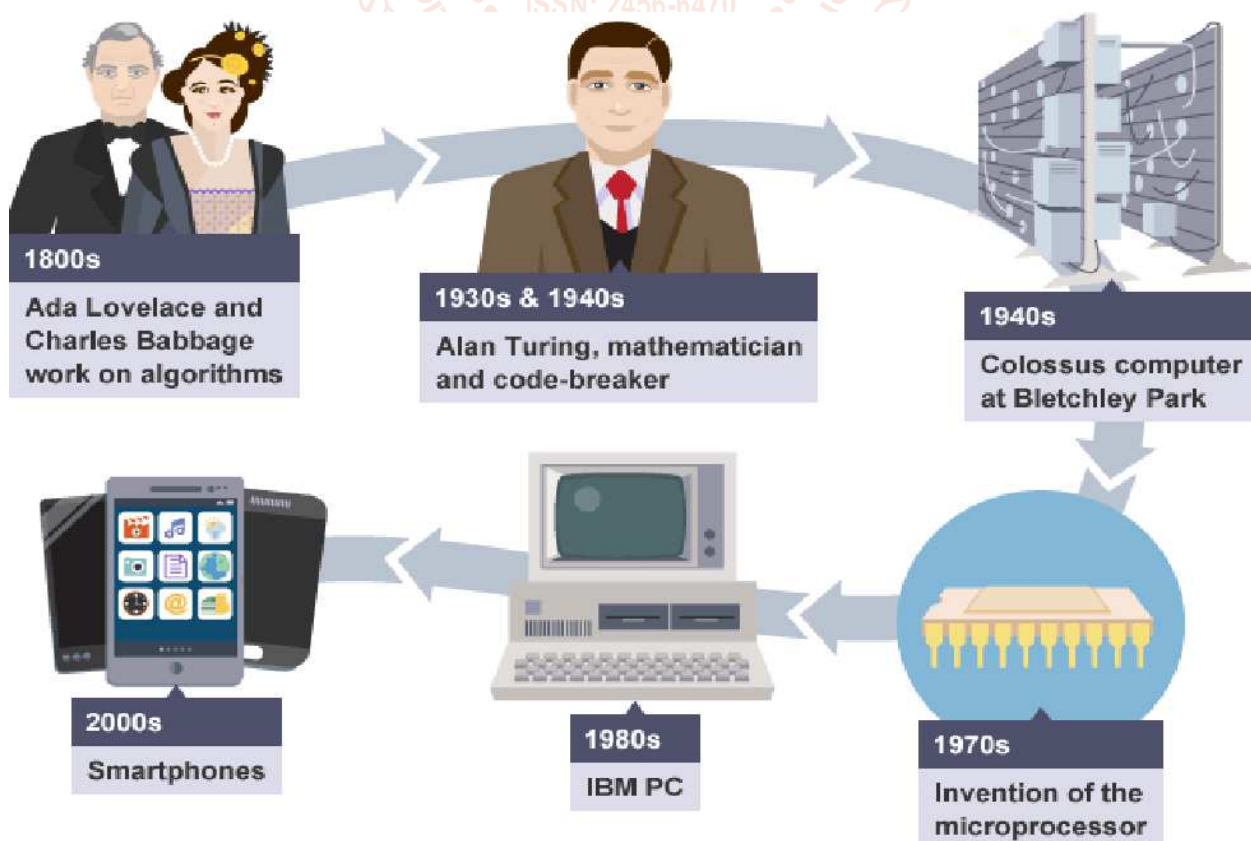
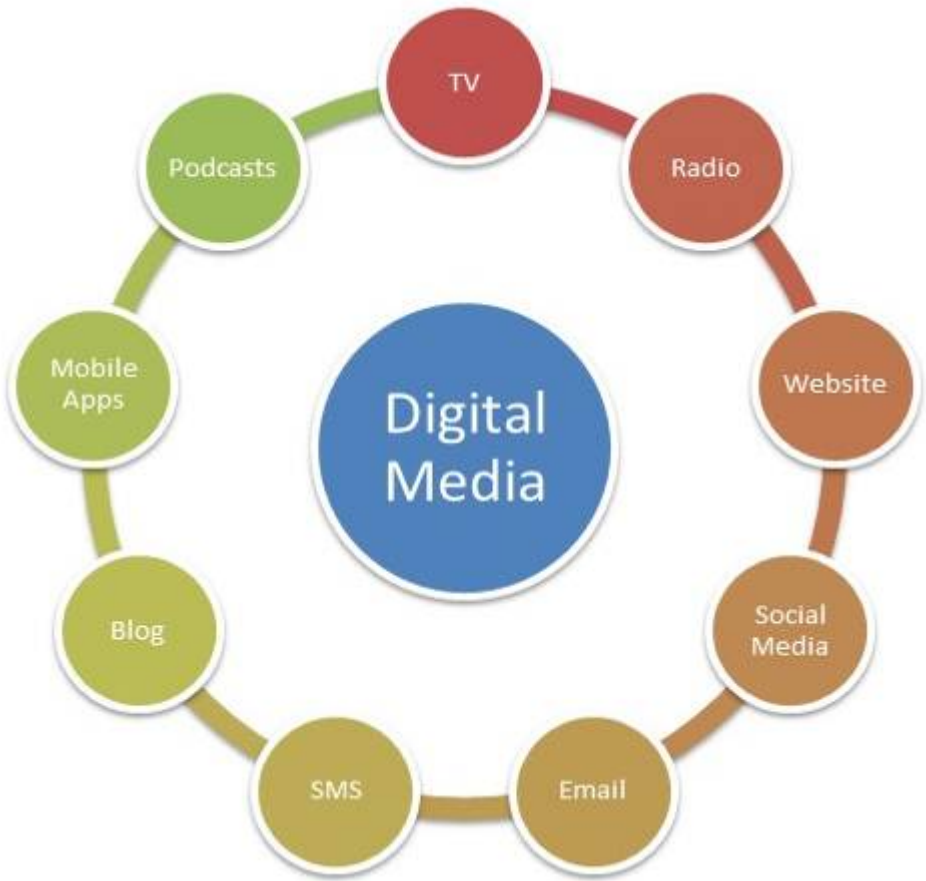**Figure 1 A brief history of digitalization [1].**

Figure 2 Examples of digital media [2].

Figure 3 Activities on social media [7].

Figure 4 A digital lab [13]