



Title: A Study on Digital Media and its Influence on the Consumer and in Socialization

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Date: 22/06/2022

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1. Framework

In the XXI (twenty-first) century, mass media has become an integral part of day-to-day activities and, over the years, has undergone a big transformation to incorporate almost all important aspects in people's lives, becoming a tool that defines how people eat, dress, and socialize among other things.

The Internet, which has become an inherent part of everyone's lives, the increased number of devices and the larger variety of passive and interactive media have led to an increased amount of time spent with media in everyday life over the past decades. Several studies show that there has been a significant increase not only in media exposure but also in media multitasking¹.

With the introduction and constant evolution of the World Wide Web, the world realized the logical extension of access to multimedia where entertainment is accessible via the internet right at our fingertips. The internet became the new platform upon which the media and entertainment industry expanded further.

The rapidly increasing pervasiveness of digital media and the novel media effects on socialization are more and more evident each passing day.

2. Purpose

The aim of this assignment is to present a detailed study of the growth and mechanisms of Digital Media and its impact on the consumer and on socialization, focusing on the current days, where the influence of the Internet and social media is bigger than ever.

3. Introduction

3.1 What is Mass Media?

Mass media refers to media technologies used to disseminate information to a wide audience. The key function of this is to communicate various messages through several types of different media, for example, televisions, movies, advertising, radio, the internet, magazines, and newspapers.

Although we may not directly notice, Mass Media has the power to influence society, while also being impacted by what's happening in society itself. It's constantly showing the audience new information and offering them a wide variety of choices in terms of content, media platform, *etc.* to choose from the type of mass media they want to consume.

Currently, we can separate Mass Media in four distinct categories:

- **Print Media** – One of the easiest and oldest way to reach the masses. This ranges from coupons, to advertisements, newspapers, journals, books, and magazines;

¹ Research from <https://www.nature.com/articles/s41598-022-07777-1>

- **Outdoor Media** - Brands and companies rely on the use of unusual, eye-catching, or different locations and items to promote their products, thinking not only about traditional ads but non-standard ways to promote their product. These include billboards, posters, signs, banners, *etc.*;
- **Broadcasting Media** - With the help of an electronic broadcasting medium, audio and video content is distributed to a dispersed audience. Media like television, radio, video, and games appeal to heterogeneous audiences, people who differ in age, background, views, goals, and interests;
- **Digital Media** – The more technology evolves, the more people use it in their daily life, easing daily tasks and giving more access to information. To promote products and messages, mediums like websites, emails, online advertising, online forums, podcasts, and platforms like Facebook, Instagram, Twitter, YouTube, *etc* are used to spread information to the masses.



Fig 1 – Mass Media

In this assignment we will be focusing on **Digital Media**, exploring how it came to be, how it works and the impact it holds in society.

3.2 Evolution of Mass Media

The history of mass communication stretches from prehistoric forms of art and writing, until today's technologies.

- Starting at basic printing technology from around 800AD;
- The invention of Gutenberg's printing press in 1455;
- The first weekly printed newspaper in Antwerp in 1605;
- The invention of radio by Marconi in 1895;
- The invention of the television by John Logie Baird in 1925;
- The latest one, the World Wide Web by Tim Berners Lee in 1989.

The number of people reached by any of these art forms and technologies has grown exponentially, from a couple hundreds to millions, via the news, radio, and television. But now, through the Internet, the audience is virtually limitless and certainly in the billions, with an estimated 4.65 billion having access to the World Wide Web in 2022².

So, though mass media has existed for thousands of years, it has evolved to a point where it's focus is swerving to the Digital Media side, as it becomes more prominent in society.

4. Digital Media

Digital media means any communication media that operates with the use of any of various encoded machine-readable data formats. It can be created, viewed, distributed, modified, listened to, and preserved on digital electronic devices. Examples include digital images, videos, audio, online games, web pages, social media, e-books, *etc.*

Contrary to other types of mass media, such as print media or other analogue technologies, digital media is easy to copy, store, share and modify. This quality of digital media has led to significant changes in both business and society behaviour.

It has revolutionized the way we receive news, discover new products, or even entertain ourselves to the point where we're now seeing a reduction in the once-popular sector of print-based media. Unlike other traditional forms of media, like printed books or art, this media gives anyone the flexibility to access their favourite digital content where and when they want it.



Fig 2 – Digital Media

4.1 Birth of Digital Media

From the use of newspapers, journals, radio, and TVs to the creation of digital devices and the early Internet in the 60s and later the creation of the World Wide Web in 1989, we have witnessed Mass Media engagement being caught up in a digital revolution.

² Numbers from <https://www.statista.com/statistics/617136/digital-population-worldwide/>

Mass Media was the definition on how to convey a message to a large number of people based on specific needs or interests and was mainly done through the above said mediums.

However, with the birth of technology followed by the birth of the Internet and its rapid evolution, many realized how much more significant it could become, reaching limitless potential, maybe even surpassing the current forms of mass communication, causing even greater impact.

The statistics evidence this impact of digital media communications today. The number of smart device users is rising rapidly as well as the number of functional uses. A smartphone or tablet can be used for hundreds of daily needs. There are currently over 3.7 million apps on the Apple App store³. For comparison, in 2014 less than 1 million existed. Another example are streaming services, expect to generate 30 billion dollars in revenue in 2022⁴, in comparison, only 7.1 billion dollars were generated in 2015.

This shows incredible growth, and these are all opportunities for digital marketing efforts and online advertising, inadvertently shaping our world in ways we can't directly perceive.

5. How Digital Media Reaches a Mass Audience

Research shows that globally, 58.4% of the world's population uses social media⁵ (*January 2022*). Although this represents more than half the population, it still doesn't include all the population that uses digital media without having to rely on social media platforms.

The number of social media users globally grew from 4.2 billion in January 2021 to 4.62 billion in January 2022⁶. This accounts for a 10.1% growth year-over-year of global social media usage.

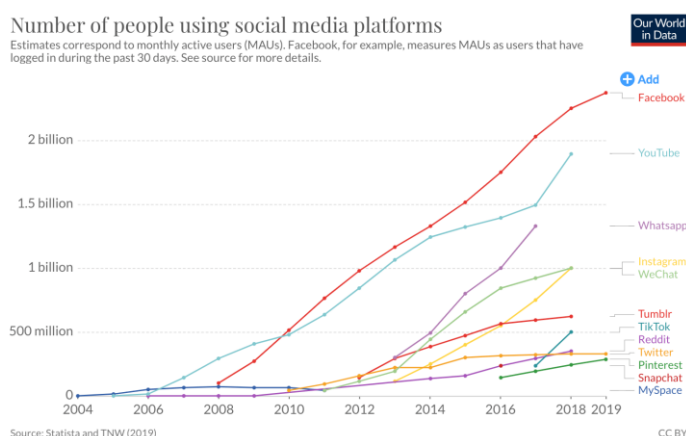


Fig 3 – Number of people using social media platforms (2004-2019) Study by Our World Data

³ Numbers from <https://www.statista.com/statistics/268251/number-of-apps-in-the-itunes-app-store-since-2008/>

⁴ Numbers from <https://www.businessofapps.com/data/video-streaming-app-market>

⁵ Research by GlobalWebIndex <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/>

⁶ Numbers from <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research>

With the on growing use of digital media outlets, the influence and impact it holds also changes dramatically. Nowadays news spread like wildfire on the Internet, generating opinions, discussions, memes, and shaping the way a person thinks and acts by what they see, read, or hear online.

There are several different ways to appeal to a large audience, so how does digital media reach the masses?

5.1 Digital Advertisement

In 2022, 571 billion dollars were spent on Digital advertising worldwide, and more than 239 billion dollars were spent in the United States alone in digital advertising⁷. This is only a percentage of all digital media available to the public and yet we notice the huge number it represents, showing how much of an importance it has in our society, and growing with each passing year.

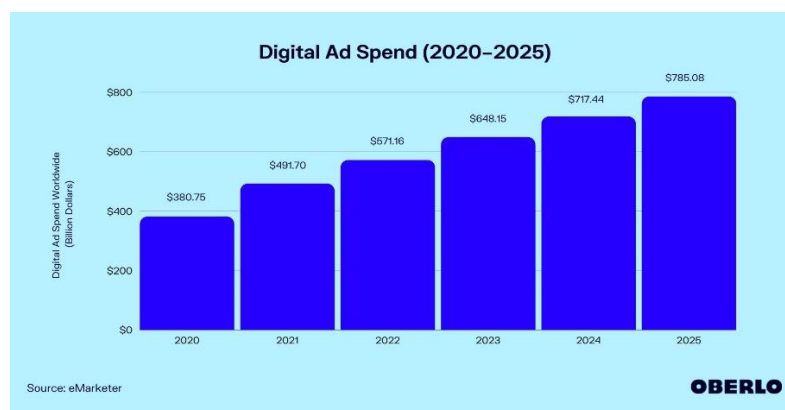


Fig 4 – Digital Ad Spend Worldwide (2020-2025) Study by Orbelo

As stated above, advertisement has a huge investment and influence worldwide, being the easiest way to convey a message or promote a product or service on the Internet. We can see ads in everywhere we go online, from social media outlets to online games. The average person sees between 280 and 310 advertisements per day.

But how do ads target people?

5.1.1 Automation and programmatic advertising

The internet provides a large data set on consumers, and there's no way advertisers can manually browse through all that information to build profiles of their ideal customers. Algorithms are essential for analysing that material and putting it to use. The automated platforms use data to bid on ad space, detecting which ads are performing better and then putting in more bids for those that result in more conversions.

⁷ Numbers from <https://www.oberlo.com/statistics/us-digital-ad-spending>



The other end of this process is also likely automated, with algorithm-based platforms like Google AdSense automatically selling ad space for websites. Estimated about 80% of digital advertising business is done by one machine interacting with another⁸, as it becomes simpler and smarter for businesses and brands to take advantage of it.

5.2 Social Media

As of 2021, 72% of U.S. adults use at least one social media platform. It's a no-brainer to sell ads on social media. Fortunately, the major sites, such as Facebook and Twitter, have robust advertising platforms.

The highest-performing ads on social media take advantage of geolocation technology on mobile devices, allowing for hyperlocal ads to target users within a predetermined area.

Video is also a growing area for advertising that's catching people's attention. Studies show that video ads on social media get much more engagement than non-video ads⁹. On YouTube, viewers are 1.4 times more likely to watch and share ads on mobile. A popular type of video on social media doesn't require sound and uses subtitles, allowing non-disruptive viewing in public.

Social media use

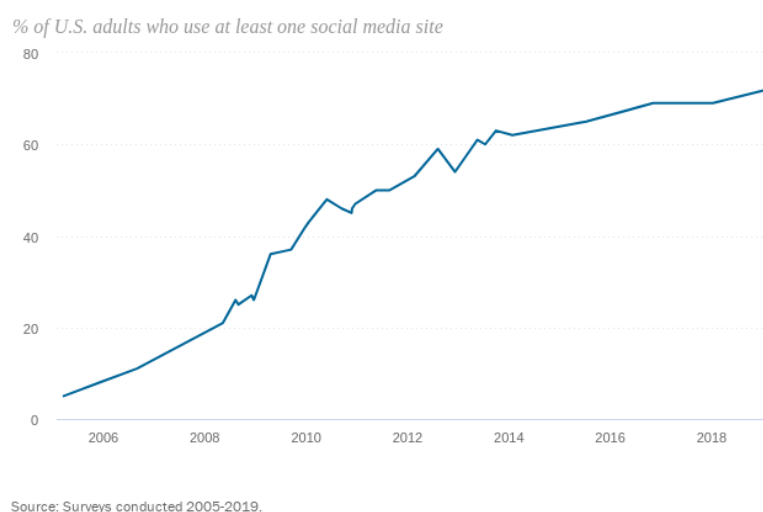


Fig 5 – Growth of social media use in the USA

We notice this in every social media we frequent, certain topics, news or personalities being the main focus of what we see in front of us. A big part of how these things reach the mass population has to do with trends and how they work. There are endless algorithms that platforms like Twitter, YouTube, Facebook, Instagram and more recently TikTok use to make certain content trend.

⁸ Research by the Interactive Advertising Bureau

⁹ https://www.youtube.com/watch?v=3mMjthcKUiI&ab_channel=NeilPatel

5.2.1 YouTube trending algorithm

To decide what videos to preview to the user the first part of the YouTube algorithm is checking what videos has the user watched before and what genre of videos they watch the most (vlogs, gaming, music, etc). After this, the second part of the algorithm focuses on the interaction between top videos and similar users.

The algorithm for trending results pulls videos that are new and popular in a specific country. These videos are usually based on things like the rate of growth in views, view count, comments, shares and where views are coming from.

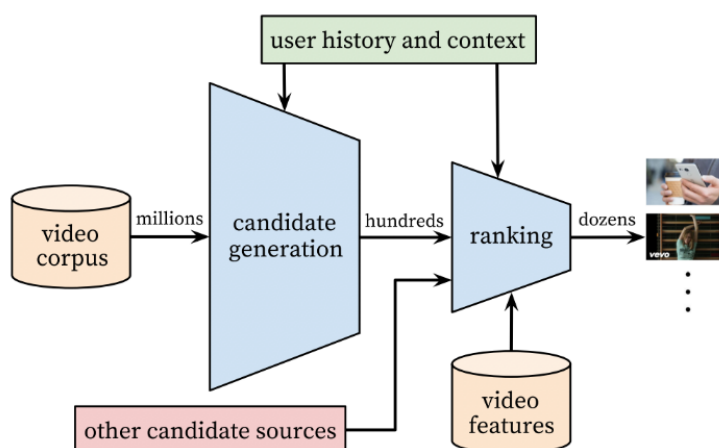


Fig 6 – YouTube recommendation system architecture

5.2.2 Twitter trending algorithm

According to Twitter, trends are determined by an algorithm and, by default, are tailored for the user based on who they follow, their interests, and location. The algorithm identifies topics that are popular now, rather than topics that have been popular for a while or on a daily basis, to help discover the hottest emerging topics of discussion.

The detection job computes trending entities in domains related to languages, geo locations and interesting topics. As shown in the diagram¹⁰ below, it has the following main phases:

1. Data preparation
2. Entity, domain, attribute extraction and aggregation
3. Scoring and ranking

¹⁰ https://blog.twitter.com/engineering/en_us/a/2015/building-a-new-trends-experience

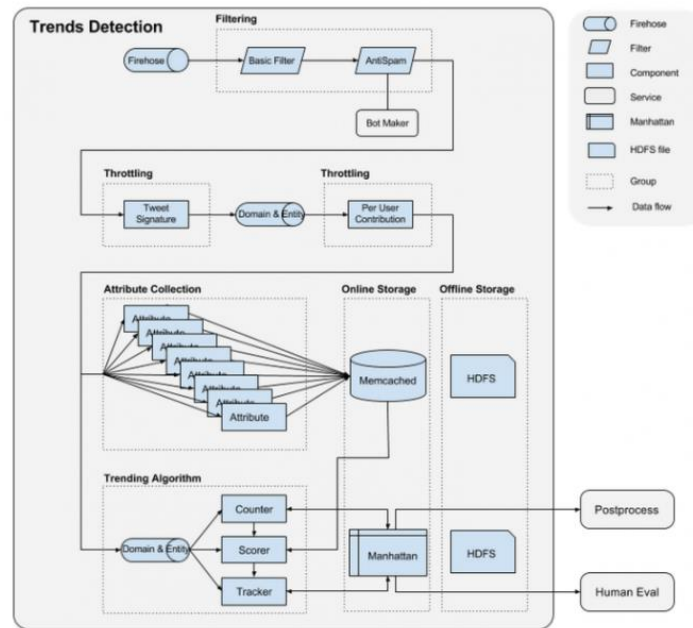


Fig 7 – Twitter Diagram for Trends Detection

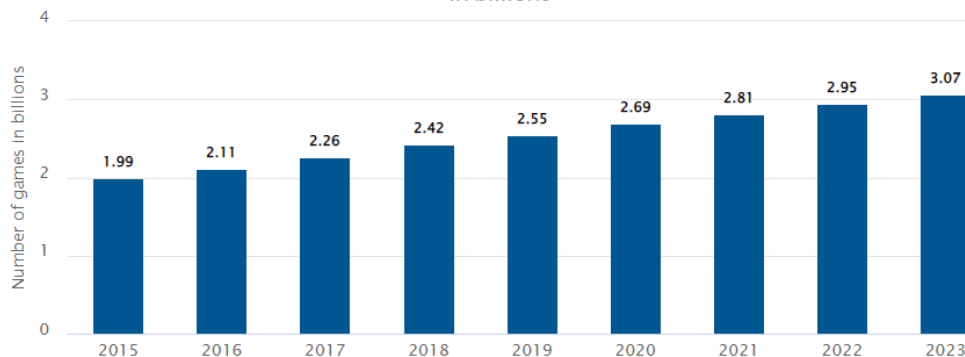
5.3 Online Gaming

So far, we discussed Digital Media as mainly the Internet we browse it or social media platforms we use. But the truth is there's more to it than that.

Online gaming has had a meteoric rise towards becoming one of the world's most popular forms of digital media. It's an important part of our culture because of its innate ability to entertain and be an inclusive form of digital media. Since more than 2.95 billion people engage with console, PC, or mobile games worldwide, it's no wonder why it's becoming an important part of the digital media sector.

Number of active video gamers worldwide - 2015 to 2023

in billions



Source: Newzoo (2020)

Designed by  FinancesOnline

Fig 8 – Number of active video gamers worldwide study by Newzoo



So far, this media is the one who is known to have the strongest impact in socialization and social behaviour, as it is seen as something that makes people isolate from the world around them or help create strong friendships and trust between people. This all depends on what games we play, how much time we play, who we play with and our own personality. Despite all stigma around online players, several studies show that players experience joy, mental stimulation, stress relief, teamwork skill and inspiration among other feelings when playing video games.

6. The Impact in Socialization and The Consumer

Socialization refers to a process across the life span of individuals through which they acquire and interact with values and social standards of a specific society and culture. Major agents of socialization include family, education, peers, media, religion, work, ethnic background, political climate, *etc.*

Media are considered a powerful agent of socialization, responsible for shaping an individual's socialization process. These agents of socialization shape our norms and values regarding appropriate behaviour and our interaction with others, while highly influencing our views and perspective of the world around us.

It is without doubt Mass Media has had a significantly broad and complex impact on society and culture. Combined with the Internet and personal computing, the creation of Digital Media has caused disruptive innovation in socialization, publishing, journalism, public relations, entertainment, education, commerce, and politics.

There is empirical evidence that the role of media and Internet use in various countries is significantly linked to cultural dimensions, for example plurality of the press, press freedom, movie genre preferences, Internet penetration, or social media behaviour.

It is not only a strong medium of connecting different groups of people, but also to provide an excellent platform for news sharing, creativity display and more learning.

So, what advantages and disadvantages has Digital Media brought to society and the consumer?

6.1 Digital Advertisement

Advertising is a virtually inescapable part of media exposure. A fair amount of studies have been dedicated to assess its impact on identity development and consumer socialization. From early childhood onward, young people are confronted with a variety of media sources and their commercial content far beyond what was available to former generations. Having such a big exposure in still developing minds is dangerous because it influences personalities and opinions more than with adults.

There is no denial online advertising has changed how businesses and brands operate, with advantages such as greater publicity, ability to reach more people for a cheaper price and

target an audience efficiently, sales are increased. In correlation to this, consumer habits and ideas are unperceivably changed.

On the other hand, too much ads cause ad exhaustion for the costumers, damaging the image of the product to the consumer. It sometimes also creates unrealistic expectations. The features that are advertised might not be the same when dealt in real. This disappoints the consumer, and the relationship gets harmed. A big problem of the advertisement industry is how manipulative the techniques used are, to draw attention and the consumer desire to purchase.

It has created a wrongful idea in society by associating happiness with consumerism. Often by using a creating a problem that doesn't exist and offering us a solution to it, that solution being spending money on unnecessary items.

6.1.1 Privacy Issues

This raises a question. Is targeted advertising an invasion of privacy?

How do brands know how we feel? What we search? What videos we see and what online posts we react to? All these things are used by advertising media to study us and find what ads are the most suitable for each consumer.

Targeted ads rely on collecting data from users' web activity, using algorithms to predict consumer behaviour and thereby more accurately target ads towards specific individuals, making some users feel like the ads are intrusive and they are being watched. Technologies like artificial intelligence and machine learning can be used to uncover details such as sex, religion, age, political beliefs, and other personal information without the user having to reveal that information themselves. In conjunction with the smart interpretation of current and future shopping trends, websites and digital platforms use these instruments to gather users' digital footprints information and behaviour on their devices to find what they are more likely to buy.

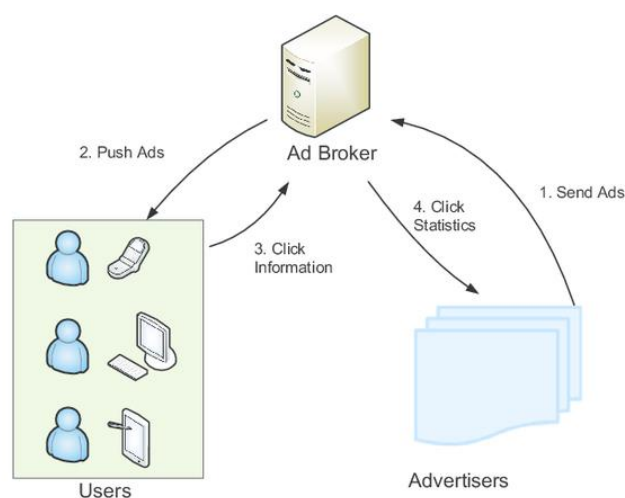


Fig 9 – Example of a privacy-aware targeted advertising system



6.2 Social Media

Social media influence is a marketing term that describes an individual's ability to affect other people's thinking in a social online community. The more influence a person has, the more appeal that individual has to companies or other individuals who want to promote an idea or sell a product.

Platforms like Twitter, Facebook, Instagram, YouTube, etc. reach more and more people each year, becoming the main medium of Digital Media available. As stated earlier, 4.62 billion people online use at least one form of social media.

Data from GWI¹¹ (GlobalWebIndex) reveals that the typical social media user actively spends an average of close to two and a half hours per day using social media. Assuming that people sleep for between 7 and 8 hours per day, these latest figures suggest that people spend roughly 15 percent of their waking lives using social media. Added together, the world spends more than 10 billion hours using social platforms each day, which is the equivalent of nearly 1.2 million years of human existence.

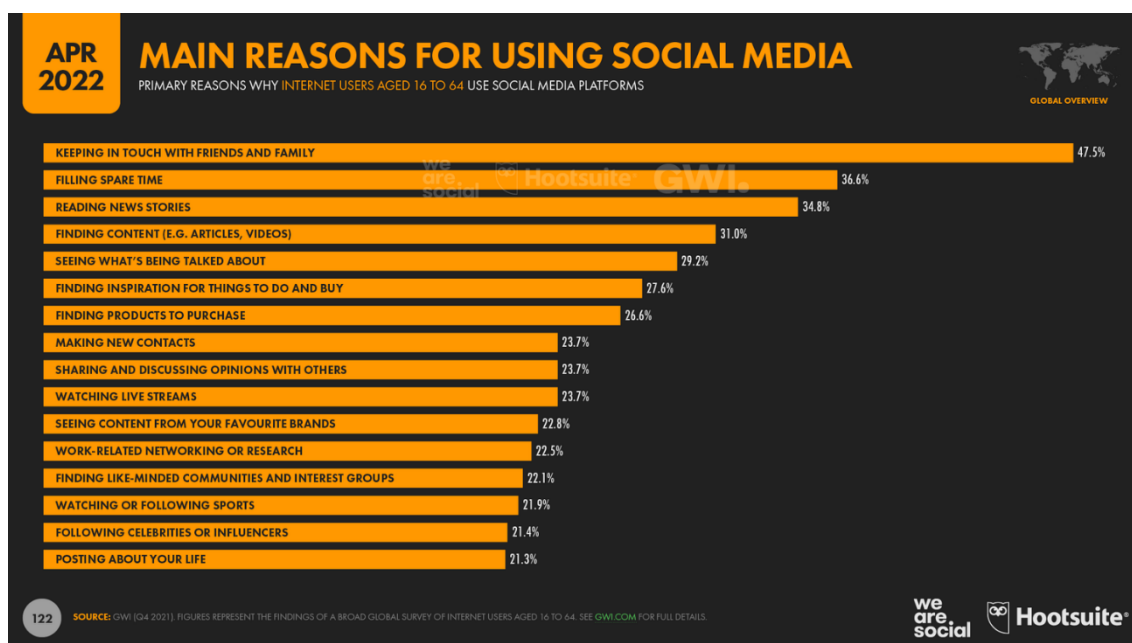


Fig 10 – Main reasons for using social media Study by GWI

With so much time spent online, it's clear the influence it has in socialization. Depending on what we hear or read, who we follow, who are friends and what content they post and share, opinions are formed, and we will always find people who agree and disagree with us, generating healthy discussions and also arguments with others who don't see our point of view.

¹¹ <https://bluesyemre.files.wordpress.com/2021/04/social-media-report-by-gwi.pdf>



Social media allows people to create online identities, communicate with others and build social networks. These networks can provide valuable support and commodity.

It can also be used for entertainment, self-expression, to expose current events, allow interaction across geographic barriers and teach about a variety of subjects, including healthy behaviours. Social media that's humorous or distracting or provides a meaningful connection to peers and a wide social network might even help avoid depression.

Since everything is discussed online, all these elements can change the way a person thinks about all kinds of different topics, such as social, ethical, environmental, educational, political, etc.

In 2018, a study found that 97% of teenagers aged 13-17 years old use social media platforms¹². In still developing minds, too much contact with such platforms can create a huge impact on what type of people they become. What accounts they follow on Twitter, what groups they are part of on Facebook or what videos they watch on YouTube.

What happens online can make them distracted, isolated, disrupt sleep, expose to bullying, rumour spreading, unrealistic views of other people's lives and peer pressure. All these things change the course of one's life and decisions.

Besides that, a huge problem right now is social media addiction, with an estimated 210 million people addicted¹³ damaging social and family relations and academic and professional lives.

6.2.1 Privacy Threats

This connects tightly with advertising technologies to target ads. In general, social media platforms, which collect and store huge amounts of personal information with limited governmental oversight, serve as attractive targets for bad actors seeking to use that data to perpetrate fraud and theft and it's leveraged by companies to better target advertising to their users, sometimes, sharing their data with third-party entities, without users' knowledge or consent.

Most common threats found in social media include:

- 1) Data Mining - companies collect data on user behaviours to sell to third-party entities;
- 2) Phishing Attempts - presents itself as a message from a legitimate organization, tricking people into sharing sensitive data;
- 3) Malware Sharing - malicious software is designed to gain access to computers and the data they contain. Once malware has infiltrated a user's computer, it can be used to steal sensitive information, extort money, or profit from forced advertising
- 4) Bot Attacks - automated accounts that create posts or automatically follow new people whenever a certain term is mentioned. A large group of bots can form a network known as a

¹² Study from Pew Research Center <https://www.mayoclinic.org/healthy-lifestyle/tween-and-teen-health/in-depth/teens-and-social-media-use/art-20474437>

¹³ Study from <https://www.matthewwoodward.co.uk/work/social-media-addiction-statistics>



botnet. Bots and botnets are prevalent on social media and are used to steal data, send spam, and launch distributed denial-of-service (DDoS) attacks that help cybercriminals gain access to people's devices and networks

With all these security problems people need to take in consideration all the risk there is to use social media platforms.

6.3 Online Gaming

In 2020, global gaming revenue jumped 20% from 2019¹⁴, this explosive growth of gaming during the pandemic has shown that many have found a new outlet for much-needed connection in isolation times. But although the concept of socialisation in a game is new to many, video game enthusiasts have been using tech like this to build friendships online and stay connected for a long time.

There have been many discussions and debates as to whether online gaming is a social outlet or a place where people go to isolate themselves. There has been a debate about how online gaming increases aggression and addiction. Some research shows that online games may have an effect on social development, self-esteem, social inadequacy, and social anxiety¹⁵.

It is true that it improves children's brains to function quicker and overall memory power, as some online games require extensive planning and problem solving skills. On the other hand, too much gaming causes addiction, making gamers forget about the world around them, damaging social and personal relations. Another problem is the toxicity that can exist in the community, making users experience cyberbullying, this is especially dangerous in young gamers, causing trauma and social fear in the future.

Whether good or bad, we can be sure that online games have been a huge part of the digital age, and that they can play a positive role in shaping a person's personality, or social capability. And as online games continue to evolve, and their massive library continues to grow we can be sure that online games will continue to have an impact on our social behaviours.

7. Conclusion

The ubiquity of Digital Media and its effects on society suggest that we are at the start of a new era in industrial history, called the Information Age, perhaps leading to a paperless society in which all media is produced and consumed on computers. However, challenges to a digital transition remain, including outdated copyright laws, censorship, the digital divide, and the spectre of a digital dark age, in which older media becomes inaccessible to new or upgraded information systems.

We can safely assume its risks and advantages, taking in account all the topics addressed in this research assignment. Starting at the idea of Mass Media, until its evolution to

¹⁴ Study by Newzoo <https://www.thewrap.com/global-video-game-revenue-expected-to-jump-20-this-year-to-175-billion/>

¹⁵ Cole, H. & Griffiths, M. (2007) *Cyber Psychology & Behavior* 10(4), from EBSCOhost.



Digital Media, the techniques to reach mass audience and the social implications they hold in the consumer and in socialization.

In this new age, filled with fake news and clickbait all around, one must be careful on what they believe, always taking in account different positions and sides of the story. It's a complex subject, the Internet and all that is part of it, is connected to not only other technologies, but to us as a society.

The consumer is influenced by what they experience in the digital world and how they interact with the Internet and with others, if we add all that up, we create new rules and settings for socialization amongst people that can be studied in more depth, for years to come.

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