Can Our Civilisation Survive the Changes Generated by New Technology? Analysing Society and Media

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LIST OF ABBREVIATIONS

AI	Artificial intelligence
BEUC	European Consumer Association
EBA	European Banking Authority
ECB	European Central Bank
ePD	Directive on privacy and electronic communications
ESMA	European Securities and Market's Authority
EU	European Union
EUROSTAT	Statistical office of the European Union
GDPR	General Data Protection Regulation
DPA	Data Protection Authority
DSA	Digital Services Act
DMA	Digital Markets Act
ICT	Information-communication technology
UNESCO	United Nations Educational, Scientific and Cultural Organization
UCP	Directive on unfair commercial practices
PSD	Payment Services Directive

CHAPTER ONE

INTRODUCTION

The latest developments in the field of robotics and artificial intelligence are bringing a new dimension to technology/human interaction. Questions and concerns about technology, artificial intelligence and survival of civilization cannot exclude people from the equation. There is no artificial intelligence without a human being nor is there likely to be because it is people who create software and deploy it to various devices. Technologies have helped expand human mobility and have had an impact on productivity, cost efficiency and communication between people. Artificial intelligence or "dangerous" algorithmic systems and machine learning, as some refer to a variety of software, are created by people. Can the latest developments of technology destroy our civilization? Technology can lead to existential risk if people write algorithms that instruct computers and other devices to decide about life or death. But if people behave responsibly regarding technology, a threat to civilization is small.

However, civilizations have tumbled in the past, human history is full of civilizations which have developed, reached their peak and then collapsed for various reasons. Life expectancy of free citizens in ancient Greece was as much as 70 years according to some reports (Batrinos, 2008), while hundreds of years later in the Middle Ages life expectancy in Europe was only about 35 years. This proves that things have turned for the worse and hundreds of years have passed before life expectancy increased again. Could fast technological development that we have been experiencing in the past decades lead to a demise of our civilization?

Technology in this book is explored from the viewpoint of internet, a technological tool that enables distance learning, shopping, e-banking, delivering messages, music and similar. Internet and associated technologies are becoming a way of life. Societies have been deploying various types of technology, machine learning and artificial intelligence for decades. From washing machines to air conditioners, surveillance cameras and facial recognition techniques, they all employ some form of software and machine "intelligence".

However, our growing dependence on technology has also increased our exposure to cyber security issues, privacy breaches and other issues. Large parts of e-commerce today are governed by data profiling, algorithmic decisions and recommendation systems on various websites, digital platforms, online search engines, social networks and social media. There are strong economies of scale with low or zero marginal costs which makes it easy for these online platforms to attract new users. Consumers may be misled through design elements of online interfaces. Websites may deliberately deceive customers to do things they did not originally intend to do. Examples of such manipulative practices are hidden charges, fake discounts, subscription traps, fake or misleading reviews, additional charges that are only revealed at the final stage of the online purchasing process and similar.

According to recent academic research, consumers underestimate manipulation and deception practices in online shopping contexts compared to offline shopping. Do the features of particular online intermediaries allow their consumers to be in control of decisions they make on these intermediaries' websites? A point of concern is the intrusive and abusive model of behavioural advertising.

Technology is changing the way businesses operate and deliver products and services to consumers in many sectors. That includes banks. With internet access we can shop online, make and receive payments and pay utility bills. Technology has benefited customers by facilitating cashless transactions at any place and time and from the comfort of home. There are considerable advantages of electronic banking. Digital channels make it possible to have communication with the bank without the need to visit the bank. That proved to be very convenient in the early stage of the COVID-19 pandemic because banks had to expand the range of self-service options available to customers online while ensuring robust security controls so that new customer functionalities were not jeopardised. However, banks' customers must be able to adapt to all these changes. In comparison to traditional in-branch banking, digitalization of financial services brings new risks and threats, including the risk of misuse of personal financial data and cyber-crime. Payment service providers must have appropriate security measures in place such as an effective operational and security risk management framework, processes that detect, prevent and monitor potential security breaches and threats, risk assessment procedures and processes to raise awareness to payment service users on security risks and risk-mitigating actions. The adoption of e-banking by consumers typically depends on a number of factors such as cost, awareness, demographic characteristics and accessibility of internet.

It is not only that all people don't have internet access at home, elderly people, for instance, have lower digital skills and use internet to a much smaller extent than the younger population.

Moreover, there is a growing trend for financial products and services marketed on social networks. Various online intermediaries such as Facebook, TikTok, Instagram, Viber, and other social media and online platforms are a territory in which there is a potential for consumer harm. It takes a touch of a button and a split second to reach billions of people. Some people may look to social media for investment ideas while others may not look for investment ideas but may still be persuaded by some online advertisements to venture into businesses they don't know much about.

Various websites and online platforms bring a world of information to people. The power of a digital platform lies in its ability to reach a large number of people around the world. This enables a platform to shape both, supply and demand sides of the market. However, digital platforms are not only changing the interactions between supply and demand in modern commerce, they have a wider societal impact. One of the analytical elements of the book is social media and its influence on the dissemination of ideas, opinions and information. There is a question of harmful content that can appear on social media. Social media's personalised algorithms depend on user profiling and tracking to recommend content to people. Users of social media should be able to tailor the type of content they want to see. Under the Digital Services Act that has been recently enforced in the EU, "very large" platforms with more than 45 million users have to provide an option to switch off personalised recommendations and have also obligations in regard to fake news and misinformation.

In the European Union (hereinafter: EU) the Charter of Fundamental Rights has set the rules related to fundamental rights, especially privacy, protection of personal data, non-discrimination and the freedom of expression and information, as well as cultural diversity and media pluralism. These fundamental rights should be applied in all European Union member states.

Large tech companies must prioritise the protection of users' privacy and ensure that their data is not used without users' consent although business models of large online platforms and search engines rely on particular data collection about their users. These platforms are not just social networks where people connect with others; they may be also a market place and platforms where users are exposed to news and current debates.

These online platforms are a hybridised form of communication having an effect on other media and can influence political developments as well. Political parties and leaders have taken advantage of social networks to start introducing criticism that can be a strategic tool in electoral communication. A large social network may indirectly contribute to polarisation of public opinion by facilitating a distorted picture as individuals are more vulnerable to being influenced by "fake news" on a social network platform such as Facebook (Stark and Stegmann, 2020). According to Vosoughi et al. (2018) lies on social media spread faster than the truth. Algorithms, i.e. recommender systems on social media, are designed to maximize revenues from advertisements, and divisive and scandalising content is more likely to attract users' attention (Amnesty International, 2021). Media literacy is one way to improve awareness about fake news and misinformation.

Users are often unaware of the cost of the "free" service offered by the social media. While they have usually not paid for anything directly they are in fact paying for the service by providing their personal data that is being sold for profits. Although legislation requires that the social media inform customers about the data collection, e.g. by constantly demanding consent for the use of cookies, in most cases the consumer's consent is a prerequisite for the use of the media so the consumer in reality has no other choice but to accept cookies. At the same time the official control over tracking people on the internet may be largely deficient because it depends on resources available to national authorities responsible for the implementation of the relevant EU legislation.

This book analyses situations that have probably happened to anyone. These situations range from how to be aware of various scams so as not to get ripped-off online to e-commerce practices when shopping online. And how not to be manipulated into buying something not intended to buy and on how to avoid online fake news and/or misinformation. Or at least recognize them as such. There are also situations about content moderation and data and privacy protection as users of various social networks can be influenced by various news and information promoted or shared online. The in-depth case studies and many brief examples throughout the text in each of these areas provide an interesting material to all who find most of these issues becoming more and more relevant in the world of today. Practical presentations in this book are valuable to interdisciplinary researchers, students, data scientists and others who want to further explore persuasive techniques in online apps, digital advertising, recommendation systems and e-commerce platforms. The book also

debunks the fear or idea that computers will acquire consciousness and emotions and take over the civilization.

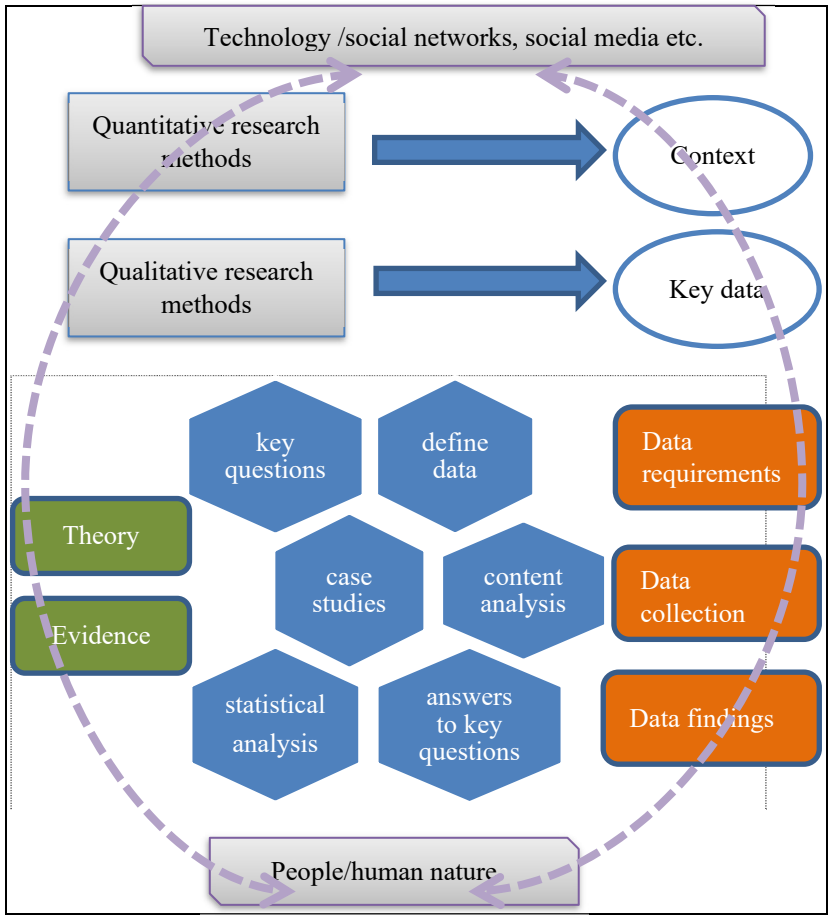
The book does not aim to be highly technical. Nor does it aim to be too theoretical or too abstract. It takes a view of a consumer in an online world by exploring what this world can bring to the lives of people. The book is a comprehensive investigation into specific features of the digital world that can impact people socially, financially, mentally and in other ways. This is illustrated by numerous examples and case studies. The book aims at wider audience. Its language is plain, clear, user-friendly and intelligible.

CHAPTER TWO

ANALYTICAL FRAMEWORK

Researchers have established that a framework-based approach to research should be applied when dealing with complexity in situations involving human interactions (Cilliers, 1998). As a result, an analytical framework combined with relevant theory helps achieve both novel outcomes and creative thinking (Coral and Bokelmann, 2017). There are many analytical frameworks in academic research. For example, analytical framework of communication models based on deficit, dialogue and participation (Trench, 2008). Others focused on an analytical framework for multiple-use commons (Edwards and Steins, 1998), analytical framework for the analysis of drivers and dynamics of historic land-use changes (Coral and Bokerman, 2017) and analytical framework for health care research (Arifin et al., 2019). There is also an analytical framework on institutional analysis and development framework (Ostrom, 2011), analytical framework on debating notions and approaches to radicalisation and violent extremism (Torrekens and de le Vingne, 2020) and other analytical frameworks.

Fig. 2-1: Analytical framework



Source: Authors, 2023

The analytical framework in this study is a "platform" that displays causal connections and relationships of existing trends in the online world. In this respect, the analytical framework illustrates elements of this research that are examined in order to provide answers to research questions (Fig. 2-1).

The analytical framework in this book draws on theory of social networks and literature on consumer behaviour, political science and media. It also draws from social sciences such as psychology, sociology, philosophy and behavioural economics. The analytical framework in this study is in line with established research procedures. The ultimate objective of framework analysis typically aims to "identify, describe, and interpret key patterns within and across cases of and themes within the phenomenon of interest" (Goldsmith, 2021, 2061).

Key data are derived from case studies and content analysis of various e-commerce websites, online platforms, social networks and social media. This includes "experimental" checking and screening of various websites, ads on social media, analysis of terms and conditions of digital platforms on websites and apps, conditions to make online purchases, messages and emails that ask for certain personal information and similar.

The analytical framework in this research enables a critical look at the current state of the impact of technology. It extends this view to the long-term perspective because the relationship between human nature and technology can have long-term consequences that may contribute to a civilization's decline. It must be emphasized that the research agenda here is analysed only within the defined analytical framework. That is in line with the findings that "we cannot have complete knowledge of complex systems; we can only have knowledge in terms of a certain framework" (Cilliers, 2005, 81).

The research questions are:

1. What have been key technological changes in communication between people in the last decade?
2. How has that influenced people's behaviour?
3. What are the benefits of technology developments for people?
4. What are the dangers and perceived risks?
5. How can these changes impact people in the long term?
6. Can that endanger the existence of our civilization?

The book also briefly touches upon artificial intelligence. The fear of new technology, especially artificial intelligence, has been incited in media in recent months by some leaders from civil society, academia and industry and reflects uncertainties about this fast-developing technology.

CHAPTER THREE

METHODOLOGY AND DEFINITION OF KEY TERMS

1. Methodology

Inductive approach is the research approach towards a general plan about how to conduct this study. This approach does not involve formulation of hypotheses. It starts with a research question, collects data and systematically and logically conducts research by analysing data in order to ensure the usefulness of the research findings. The research process aims to find answers to research questions through identifying themes in data in order to generate an understanding of the particular social phenomena researched. The research approach follows theory and practice of research methodologies, including in social sciences, research in media (Wellington and Szczerbinski, 2007) and research approaches applied in academic research (Grønmo, 2019).

The research aims to collect, analyse, and interpret quantitative and qualitative data. The methodology of this research is therefore a combination of methods. The aim is to combine multiple methods and data sources to enhance the clarity of the findings and their validity. With the mixed methods approach to research it is possible to incorporate methods of collecting or analysing data from the quantitative and qualitative methods in a single research study (Creswell, 2003).

Contextual data from the Eurostat are about the context of the phenomena of interest in this book. The methodology in regard to the contextual data is quantitative. It is centred on statistical analysis of data from the databases at the statistical office of the EU, the Eurostat. Some other data sources are also used (e.g. Statista) but to a much smaller extent. Data on households and individuals from the Eurostat that are explored in this study relate to e-commerce, internet use, access to internet, digital skills, e-banking, computer use and trust, security and privacy. Data on e-commerce includes data on internet purchases by individuals, money spent, problems encountered, perceived barriers and financial activities

over the internet. Other data from the Eurostat's databases that are analysed in this study revolve around identification procedures used for online services; trust, security and privacy on smartphones; privacy and protection of personal data; security related problems experienced when using the internet and activities via internet not done because of security concerns. Other data analysed relate to other relevant aspects of people's behaviour on the internet. All data for the above subjects are based on the EU survey on the use of Information and Communication Technologies (hereinafter: ICT) in households and by individuals. It is an annual survey conducted since 2002 with an aim to collect harmonised and comparable information on the use of ICT in households and by individuals across the EU (Eurostat, 2023).

In addition to statistical analysis, the research methodology also includes qualitative methods such as case studies. They are in-depth analyses about specific issues relevant for key research questions in this book. There is plenty of literature about the application of the case study methods in many areas and disciplines, including in sociology (Graessel and Schirmer, 2006), medicine (Crowe et al., 2011) and other areas that have used case study methods extensively, particularly in government, management and in education. Not limiting research to quantitative methods reveals important data that need to be uncovered at the micro level. That is achieved by in-depth case studies. They focus on everyday real situations and as such generate new insights and explanations in line with the theoretic principles of case studies (Crowe et al., 2011).

Multiple sources in this book include online presentation data, archival records, audiovisual materials, other records or documents and direct or participant observations available online. Since the core part of online platforms' businesses is the manner in which information is prioritised and presented to users, the methodology in this study takes that into account by providing numerous graphs, tables and visual presentations of relevant examples and case studies. There are many screenshots in this book. They aim to show how websites and apps attract users and how they can trick and mislead them into certain decisions which otherwise they probably wouldn't make. Websites and apps can prioritise information so that such systems have a significant impact on how users respond to the information online. Visual presentations of the interaction between online interface and people provide a break from textual monotony. Non-textual content such as screenshots, graphs and tables helps a reader to visualise key issues and better understand the features and relationships between data (Franzblau and Chung, 2012). Although the text explains research themes and other relevant facts, the use of visual presentations such as graphs, tables,

screenshots and images makes it easier for a reader to connect information from the text with their understanding of the features explored.

Case studies and numerous brief examples in this book are illustrative in this respect. They aim to explore the facts and patterns found in the process of the interaction between technology and people. In this way social and behavioural attitudes in regard to the key research question can be observed. Case studies enable a view beyond the quantitative statistical results. The idea is to understand people's behavioural decisions through the technology-people perspective. By combining both quantitative and qualitative data, case studies and numerous short examples help explain both the process and the outcome of a particular phenomenon. That is particularly relevant in a complex context (Taherdoost, 2022).

In addition to quantitative analysis and case studies, this research also includes online content analyses. For example, the analysis of terms and conditions of service on some social networks; the design and functioning of interface of online retailers and similar. The general principles of content analysis (Bengtsson, 2016) have been applied in this research. The aim of content analysis in this book is to elicit patterns/themes in regard to online platforms and other online intermediary services in order to align those themes and patterns with the contextual data already collected. Content analyses typically review forms of human communication from visual, verbal or written data in order to identify themes, patterns or biases so as to describe specific phenomena (Downe-Wambolt, 1992). As early as in 1960s content analysis was defined as *"*a research technique for the objective, systematic and quantitative description of the manifest content of communication" (Belerson, 1952, 18). On the other hand others defined this method as "a detailed and systematic examination of the contents of a particular body of materials for the purpose of identifying patterns, themes, or biases" (Leedy and Ormrod, 2001, 155). Content analysis is powerful because "it makes sense of what is mediated between people-textual matter, symbols, messages, information, mass-media content, and technology supported social interactions-without perturbing or affecting those who handle that textual matter" (Krippendorf, 2004, xiii).

The geographical frame of the research is the EU. In line with this, the majority of data and other information relates to the users in EU member states. There are also some examples from the UK and other countries, but to a considerably smaller extent. Tables and figures in this book aim to present current and long-term developments in the EU. There are also comparisons between countries.

2. Definition of key terms

In order to clarify key terms in this book, the following definitions that are in line with the definitions in relevant EU law, apply:

i. "Advertisement" means information designed to promote the message of a natural or legal person, regardless of whether the aim of the advertisement is to achieve commercial or non-commercial gains. An advertisement is presented by an online platform on its online interface against remuneration to specifically promote that information.
ii. "Algorithmic systems": A finite sequence of associated instructions that solve a particular problem or carry out a particular task.
iii. "Artificial intelligence (AI)": Applications based on sorting and analyzing large and diverse data. That is performed by using techniques such as self-learning that makes analyzing able to optimise rationally. For instance, depending on a set of criteria for any given task, these techniques can choose the best action to achieve a specific goal.
iv. "Cognitive bias": people's inherent features that affect their decisions and judments from the rational point of view.
v. "Content moderation" means the activities undertaken by providers of intermediary services that aim to detect, identify and address illegal content or information incompatible with their terms and conditions. That includes measures that affect availability, visibility, and accessibility of that illegal content or that information (e.g. such as demotion, demonetisation, disabling of access to, or removal thereof, or that affect the ability of a user to provide that information, such as the termination or suspension of a user's account).
vi. "Consent" of the data subject means any informed, freely given, unambiguous and specific indication of the data subject's wishes by which he or she, by a statement or by a clear affirmative action, agrees to the processing of personal data relating to him or her.
vii. "Cookie" is a small text file that a website (which a data subject (i.e. user) is visiting) stores on this person's computer or mobile device when they visit the website. Tracking cookies typically collect information such as clicks, the pages a person has looked at within a website, products a person has clicked, shopping preferences, device specifications, geographic location, search history and similar.
viii. "Dark patterns": Online user interfaces that have been designed in such a way that they exert negative influence on the user, and cause

them to take a decision desired by the online platform, online search engine or other websites.

ix. "Disinformation" is the deliberate dissemination of false and/or misleading information in order to undermine trust in institutions, societies and people.

x. "Illegal content" means any information that, in itself or in relation to an activity, including the sale of products or the provision of services, is not in compliance with the EU law or the law of any EU member state that is in compliance with the EU law. The types of content that are illegal are specified either in other European Union legislation or the legislation of the EU member state (national law).

xi. "Intermediary service" means one of the following information society services:
    1. A hosting service. It consists of the storage of information provided by, and at the request of, a recipient of the service;
    2. A mere conduit service. It consists of the transmission in a communication network of information provided by a recipient of the service, or the provision of access to a communication network;
    3. A caching service. It consists of the transmission in a communication network of information provided by a recipient of the service and it involves the automatic, intermediate and temporary storage of that information, performed for the sole purpose of making more efficient the information's onward transmission to other recipients upon their request.

xii. "Online disinformation" (popularly called 'fake news') is not illegal per se, but may impact negatively on trust in the society, create tensions among people and be damaging to democratic elections.

xiii. "Online interface" is the point where the interaction between the person and the computer takes place. It means any software, including a website or a part thereof and applications, including mobile applications. In an online interface a consumer is guided during his/her customer journey in order to reach (or not to reach) some decisions. Online interface typically involves screens with information, check-boxes, input fields and buttons.

xiv. "Online platform" means a hosting service that, at the request of a recipient of the service, stores and disseminates information to the public. The terms "online platform" and "digital platform" are used interchangeably in this book. A social network and/or social media in this book is defined as an online platform through which users share messages, information, ideas, opinions, videos, news and can

generate various content. Users can be private people, businesses, organizations and other entities.

xv. "Online search engine" means an intermediary service that enables users to input queries in order to undertake searches on the basis of a query on any subject. The query can be in the form of a keyword, voice request, phrase or other input. The results returned can be in any format in which information in response to the query can be found.

xvi. "Personal data" is any information relating to an identified or identifiable natural person. This person can be identified, directly or indirectly. For example, by reference to an identifier such as a name, location data, an identification number, an online identifier or one or more factors specific to the economic, genetic, physical, physiological, mental, cultural or social identity of that person.

xvii. "Profiling" is any form of automated processing of personal data that depends on the use of personal data with an aim to evaluate certain personal aspects relating to a natural person. This particularly relates to the analysis or prediction aspects about that person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements.

xviii. "Recipient of the service" means any legal or natural person who uses an intermediary service, in particular with an aim to seek information or to make information accessible. Active recipient of an online search engine (e.g. Google) means a recipient of the service that submits a query to an online search engine. As a result, this recipient is exposed to information indexed and presented on the search engine's online interface. On the other hand, an active recipient of an online platform (e.g. Facebook) is a recipient of the service that has engaged with an online platform. That is done by either being exposed to information hosted by the online platform and disseminated through its online interface or by requesting the online platform to host information.

xix. "Recommender system" is a fully or partially automated system used by an online platform to suggest in its online interface specific information to recipients of the service or prioritise that information. This includes, for example, a result of a search initiated by the recipient of the service determining the relative order or prominence of information displayed.

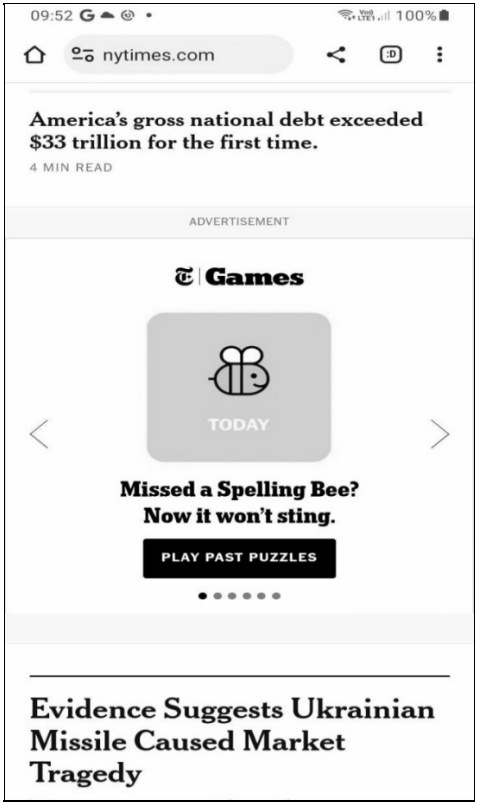
CHAPTER FOUR

TECHNOLOGY IN SOCIETY

Human values vis-à-vis technology have been explored from many different perspectives. Philosophy, for instance. Different theories of ethics encourage unique perspectives on a specific technology system (Bednar and Spiekermann, 2022). Hallström (2022) focused on technological determinism in technology education while Torpey outlined a sociological agenda for the "tech" era stating that the "fixation on the platforms and their devices, meanwhile, has led to concern about the nature and quality of social ties in the face of these new technologies" as users of digital technologies be nudged to "stay glued" to platforms (Torpey 2020, 4).

According to the social network theory, social networks and their structures are new media technologies because of their multiple types of ties, multiple types of actors and multilevel networks. All these have media effects via diffusion and mediated social influence (Liu and Simpson, 2017). This is particularly important in large social networks where actors may be both consumers and producers, while content may be accessed from different sources and using many different types of media.

Fig.4-1: Screenshot of NYT news page, September 19, 2023



Source: Author's screenshot, 2023

Today technology can be observed everywhere, for instance, on digital versions of traditional newspapers such as The New York Times (Fig.4-1). Not only are these advertisements about various products and services, they can also invite readers to play various games. Online games are popular. According to the recent report from BEUC (European Consumer Association) based on a survey of 4,929 consumers in 8 EU countries (France, Germany, Italy, Lithuania, Poland, Romania, Spain and Sweden during February and March 2023) about 59% of respondents said they used online games or other websites where people could purchase virtual items in exchange for real money (BEUC, 2023).

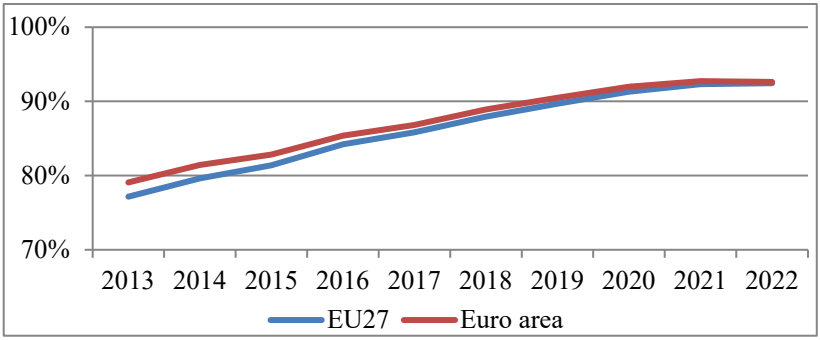
According to research in medicine and psychology in particular, information technology should take into consideration ethical aims when

introducing any technology into people's lives in order to increase their wellbeing (Yaden, Eichstaedt and Medaglia, 2018). Technology shapes people's feelings, thoughts and actions (Steinert and Denis, 2022). Although many claim that technology has the potential to contribute to a more equitable society, data from Eurostat indicates that technology may reinforce existing inequalities. That may be so because values such as justice cannot be incorporated into the technology design and development.

Technology itself is not a problem for the world (Ede, 2019). Technology has made it easier to connect with people regardless of where they are (Pittinsky, 2019). It has also made it easier to find information and access education online (Franklin and Bolick, 2007). Technology is an enabler that can help access information and services, make cost efficiencies and increase productivity, improve data collection, analyses and similar. Although it offers many opportunities, technology has also put people in a position where large tech companies control what people see online and the choices they are given in that respect. These companies influence people's experiences and decisions in a complex way difficult to understand by the average consumer (BEUC, 2023).

Internet is largely available in the EU member states. The European Commission has worked to make it accessible to all (European Commission, 2019). The COVID-19 pandemic pushed the world to move online. That revealed that there were still people who didn't have access to internet, lacked digital skills, didn't have access to supportive technology (to assist people with disabilities) and were not socially included in the digital "world" (European Parliament, 2019).

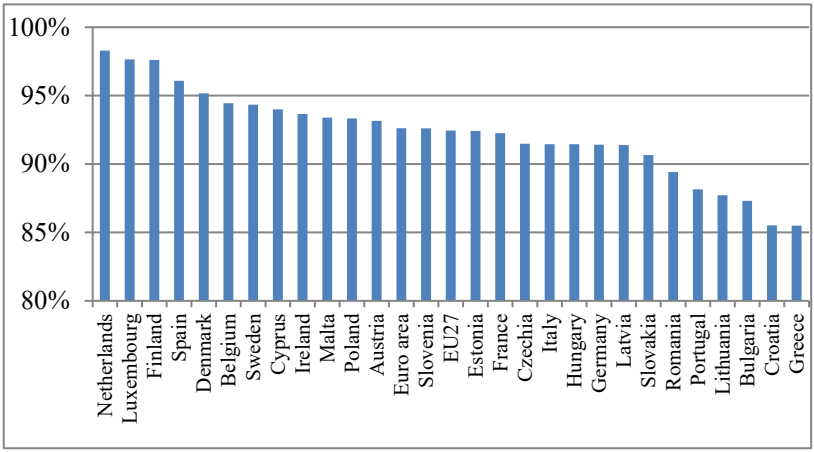
Fig.4-2: Average percentage of households in EU and euro area with internet access at home, 2013-2022



Source: Author's compilation of data from Eurostat's database, 2023

Data from the Eurostat shows that the percentage of households with internet at home in the EU and euro area has grown in the last decade (Fig.4-2). The percentage of households in the EU who had access to internet in 2022 was above 90% on average (Fig.4-2). This is consistent with the fact that internet is a means of communication and communication is the key activity in all areas of everyday life today (Eurostat's database 2023).

Fig. 4-3: Percentage of households with internet access at home in 2022



Source: Author's compilation of data from Eurostat's database, 2023

The vast majority of the north-western EU is online, while people in the south-east of Europe are more offline (Fig. 4-3). Greece has the lowest share of households who have internet access at home. Reasons for not having internet at home vary. Costs may be too high, there is lack of digital skills while older people may have no interest in internet. Still, the percentage of people who use internet at least once a week has been increasing constantly to reach almost 89% in 2022 (Fig.4-4).