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College of Social Sciences

School of Philosophy

MA Thesis

Technological Determinism in Politics:

A Philosophical Inquiry into a Shift in Global Political Paradigms

By

Gedeon Erango Ersado

Advisor: Dagnachew Assefa (PhD)

June, 2025

Addis Ababa, Ethiopia

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Approved by Board of Examiners

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Declaration

I, **Gedeon Erango Ersado**, hereby declare that this thesis, entitled *Technological Determinism in Politics: A Philosophical Inquiry into a Shift in Global Political Paradigms,* is my original work and has not been submitted for any degree or examination at any other university or institution. All sources of information and data used in this thesis have been appropriately acknowledged and referenced.

This thesis has been conducted under the supervision of **Dr. Dagnachew Assefa**, to whom I am sincerely grateful for his guidance and support throughout the research process.

Submitted by:
Gedeon Erango Ersado
Advisor: **Dr. Dagnachew Assefa**
Date: **June 2025**

This thesis has been submitted to be worked on with my approval as University supervisor.

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Date: _____

TECHNOLOGICAL DETERMINISM IN POLITICS:

A Philosophical Inquiry into a Shift in Global Political Paradigms

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Abstract

This thesis examines how technological determinism shapes contemporary political structures and global governance systems. Drawing on Heidegger, Ellul, McLuhan, and Winner, it analyzes how technologies transition from human creations to autonomous systems that restructure power, political identity, and public discourse. The study demonstrates that technologies embed political values into their design, increasingly conditioning governance across both democratic and authoritarian regimes. While recognizing the ambivalence of technological development, the thesis advocates for critical philosophical reflection to reclaim authentic human agency and ensure that technology remains subordinated to human dignity, ethical values, and ecological sustainability.

Thesis Keywords: *Technological Determinism*, *Political Agency*, *Technology and Power*, *Authentic Identity*, *Algorithmic Governance*, *Media Theory*, *Social Constructivism*, *Technocratic Governance*, *Surveillance Capitalism*, *Political Identity*, *Global Political Paradigm Shift*, *Ethics of Technology*, *Autonomy and Enframing*

Chapter 1: Introduction

1.1 Background and Context

We, as global community, have come to such a season where technology has evolved into a fundamental aspect of society which is integrated into every sphere of human life; from communication and transport to healthcare and entertainment, technology has brought a revolution in the way we live and how we interact with our surroundings. It is obvious that one major area where the impact of technology is seen concretely is politics. The rise of the digital era leads us into new ways of political involvement— transforming governance, decision-making procedures, and public conversations forever. As technological advancement continues at such a fast rate, it becomes necessary for us to critically reflect on the relationship between technology and politics but more importantly from a philosophical standpoint. This can bring many unexplored aspects into light that traditional analysis might miss.

Understanding the interplay between technology and politics not only helps us discover the kind of association between them, but also enable us to analyze the possible implication it could ever have in every related aspect. This invites us into looking for necessary intervention we should propose and act upon before it is too late to make corrections.

1.2 Philosophical Underpinnings of Technological Determinism

This thesis arises from a claim that suggests technology now has developed its own autonomy and is now playing a deterministic role in influencing societal structures, values and human actions. Keeping this in mind, understanding the roots of determinism requires exploring the works of influential thinkers and studying key theories connecting technology, with societal transformations.

In this thesis we try to uncover the foundations of determinism by drawing insights from philosophers in the field and theoretical frameworks. The thesis discusses debates on how much technology shapes decision making abilities and the consequences on the political systems. In general, discussing the interplay between technology and politics is at the core level.

1.3 Statement of the Problem and Thesis Questions

The central theme addressed in this thesis is the examination of the function of technological determinism on the political paradigms and the philosophical implications that emerge from this relationship. Showing that we are turning to a new global paradigm due to the evolved state of technology as it is operating in such era. To guide this inquiry, several philosophical questions are presented:

1. To what extent does technology shape political systems and social structures?

2. How does technological determinism influence power dynamics, governance, and decision-making processes from philosophical point of view?

3. What are the ethical and philosophical dilemmas arising from the intersection of technology and politics?

By addressing these questions, this thesis seeks to uncover the complex interplay between technology and politics, providing insights into the philosophical implications of technological determinism in the global political landscape.

1.4 Significance of a Philosophical Inquiry into Technological Determinism in Politics

For the comprehension of the wider societal implications that flow from the connection between technological determinism and politics, unveiling the philosophical framework which underlines the very concept is very critical. This thesis is intended to investigate into the underlying philosophies behind it and therefore give a better understanding into the complex interrelations between technology and political paradigms.

Understanding the philosophical inquiry regarding technology determinism on politics if there is any is significant in manifold. One, it contributes to theoretical discussions on technological determinism by providing essential insights for its philosophical foundation. Two, it improves our knowledge about technology politics relationship in order to carefully consider the political process or at least have comprehensive outlook regarding the polictical process. Three at broader context, this thesis has practical consequences for governance and policy making as it brings out

some ethical social and philosophical questionings that policymakers should ponder about when dealing with the impact of technology on politics.

Moreover, I believe it deepens our appreciation of technology and politics and thus helps us in moving forward in reality regarding the difficulties as well as possibilities that the interrelation of technology with the political process presents.

Hopefully, the significance of the practical aspect of this thesis lies in the guidance it provides to the effective usage of technology in this new paradigm in social structures just beyond the politics reflecting upon its determistic effect, ethical, social, and philosophical dilemmas.

1.5 Overview of the Thesis Structure and Methodology

The thesis is divided into different chapters ranges from general outlook regarding both variables to the overall exploration of technological determinism in politics and social structures particulary from a philosophical viewpoint. The thesis is mainly based on the review of relevant academic literature and philosophical works and their critical comparisons with each other and an attempt to analyze it with real-life scenarios.

Chapter 2: Philosophical Foundations of Technological Determinism

2.1 Introduction

In this chapter, we take an overview into the philosophical foundations of technological determinism, briefly discussing the works of influential thinkers who have contributed to our understanding of the complex relationship between technology and society. By introducing their arguments and theories, we aim to shed light on the philosophical underpinnings of technological determinism and its implications for politics.

2.2 Marshall McLuhan: The Medium is the Message

Marshall McLuhan, a canadian philosopher and communication theorist, is known for his works in the field media and technology. He published a book in 1994 which makes him influential entitled "Understanding Media: The Extensions of Man". In the book he established his claim that says "the medium is the message." McLuhan maintained that the medium by which information is conveyed determines the level in addition to the cultural in addition to the social plus the political consequences of the information. Quoting him,

> *Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication.* (McLuhan, 1967)

The above statement highlights the profound impact of the medium of communication on shaping societies rather than just the information being conveyed. This shows that the way people communicate in any form like oral traditions, written word, television, or the internet, has a significant influence on the structure, values and behaviors of a society. The medium through which messages are transmitted can shape how individuals perceive and interact with the world around them ultimately influencing societal norms and interactions.

Marshal McLuhan's central claim "the medium is the message," carries the idea that the medium through which information is transferred is as impactful as, if not more than, the content of the message itself. McLuhan believed that the medium used to communicate information shapes how the message is perceived and understood, often overshadowing the actual content being

communicated. He argued that different mediums intiate different responses and ways of thinking which eventually altering how individuals interpret and engage with the information presented. In essence, the medium becomes an intrinsic part of the message, influencing the overall impact on society and culture.

According to McLuhan (1994), different type of media have their own respective qualities that influence cognitive perception. Books & newspapers are print media which encourage linear thinking and individualism while television and the internet encourage a more holistic interconnected worldview. McLuhans argues, electronic media capable of transmitting information instantaneously over vast distances would create a new global village, a world in which freedom in communication would undermine political boundaries and established power centers.

We can bring the ideas of McLuhan in the context of technology and politics and correlate its implications for the study of technological determinism. As per McLuhan's suggestion, the emergence of such technology can change political systems and structures and how the people of a given government participate in politics. He further aruges, for some time, it may have seemed like new technologies were encouraging people to get involved in politics. For instance, take the rise of digital media platforms that allowed political news to spread quickly, creating online groups of people with similar views.

2.3 Jacques Ellul: The Technological Society

Jacques Ellul, a french sociologist and philosopher, tried to define the meaning of technological determinism in his seminal work "The Technological Society" in 1954. As for Ellul, technology as an autonomous force affects the whole of society and determines the internal arrangement and values of current civilization as a whole.

Schuurman (1977) explained Ellul's idea that technology follows its own path and logic - Technology transforms society regardless of our intentions. Quoting Schuurman,

> Technology *is both "autonomous"* and *"autonomous it is different from society"* (p. 7)

The above statement contains the meaning that technology operates independently and separate from society, so everyone loves about technology. However, he made a distinction between "technique," which refers to specific tools or methods, and "technology," the broader system of technological progress and its effects on society. Ellul argued that modern society is more and more controlled by technology resulting in a decreased value of human action and a decrease in individual freedom in its true sense.

Looking from the political perspective, Ellul raised concerns about how technology can lead to more power in the hands of experts and bureaucrats, weakening the voice of regular citizens in making decisions. He also warned that technology could be misused by those in power to manipulate and control people.

2.4 Martin Heidegger: The Essence of Technology

Martin Heidegger, the German philosopher, examined core and consequences of technology in his article "The Question Concerning Technology," published in 1954. He argued that technology is more than just set of tools and machines but it is a means of uncovering the world and influencing human life.

Heidegger initiates the question concerning technology by first taking note that with any given understanding of technology, it is necessary to start by giving recognition its essence. He begins by considering the oldest belief concerning the essence of something, concerning what it is. He explained that technology is thought of as a means to an end whereby human activity is involved in setting objectives and arriving at these objectives through the use of tools. He calls this view the instrumental and anthropological definition of technology, whereby means and ends are connected.

Technology is defined by its practical nature, as for Heidegger (1977), where objects are viewed mainly as tools to achieve a goal rather than as entities with intrinsic worth. He stated that such instrumental perspective of the world results in a way of existing he termed "enframing" in which all things are perceived and dealt with as assets to be utilized for human needs. Heidegger suggested to be caution regarding this enframing approach for he believed it hides alternative ways

of existence and connection to the world restricting our comprehension of the real essence of objects.

Heidegger tried to recheck the idea of instrumentalism. He asks questions about what it means for a being to be instrumental and about its relation to causality. He describes how means and ends mutually belong to each other adding that wherever instrumentality operates, causality prevails. Returning to the traditional philosophical creed forwarded by Emmanuel Kant - the "four causes"- material, formal, final, and efficient causes- Heidegger shines light on the being of technology as a means.

He uses the example of a silver chalice to explain how the fourfold causality works to bring an object into existence. It is here that Heidegger explains bringing-forth using the concept to elaborate that technology is the revealing of truth.

Heidegger grapples with the inconsistent nature of technology as he holds forth the revealing of truth as ambiguous and mysterious. He concludes that the question about technology is a playing of revealing and covering which points toward the quest for truth. It is here that he puts forward art, with the perspective from an artist or poet, as a way out of this puzzle in the quest for truth.

Looking at Heidegger's ideas from political point of view, it makes us think about how technology affects power and how we are governed. Seeing technology as just a tool can make politics all about being practical and efficient. This might mean that decisions are made based on what works best and not so much on what's right or what people care about.This may result in the neglect of ethical considerations and the diminishing of human values in political decision-making processes.

2.5 Langdon Winner: Beyond technological advancements

Langdon Winner, political thinker, attempted to highlight the societal and political effects of contemporary technology in his work known as "The Whale and the Reactor: A Search for Limits in an Age of High Technology," (1986). He argued that rather than being just neutral, technology is saturated with the values of politics and power systems. In his work, Winner looks at a number

of case studies like nuclear power plant designs and urban landscape patterns demonstrating how technology can influence social interactions and political decisions in general.

How technology and society interact with eachother has been explored in Winner's work "the Whale and the Reactor" taking into consideration both the possibilities and limits of advanced technology. He argued that technology is highly connected to the social, political, and cultural surroundings of a given community. From Winner's comparison of technology to a whale and a reactor, there are two different ways of thinking about technology.

Accroding to Winner, the 'Whale' represents a traditional way of looking at technology in which we think about how technology affects the bigger picture of society. Winner says this view understands how technology is highly related to everything else looking at the possible dangers and unexpected outcomes.

For Winner, the reactor, on the other hand, represents a very technical and simplified view of technology, focusing only on the technical side or benefits. Winner says this approach often overlooks the social impacts or how deeply rooted technology is in society. This means that accountability and responsibility are often forgotten.

In understanding technology, Winner sugessted that an important change in perspective is to be more critical and wide, expecting ethical and social problems, and political issues. He further emphasized on public dialogue, democratic processes in the development and governance of technology, with preservation of the environment and society.

"The Whale and the Reactor" serves as an alarming signal to society that we are moving in the wrong direction and that a thoughtful and introspective exercise of political power, as well as individual efforts by designers and technologists who benefit from thoughtful reflective designing are necessary to ensure that technology is never viewed as being independent of human or environmental boundaries.

2.6 Others

Apart from works by Marshall McLuhan, Jacques Ellul, Martin Heidegger, and Langdon Winner which has been discussed above, there are a few other philosophical inquiries stated below that could help us further our understanding of technological determinism in politics.

2.6.1. Neil Postman: "Technopole: The Surrender of Culture to Technology" (1993)

In his book "Technopole", Neil Postman, an American media theorist, deals with the influence of technology on culture and society. He argued that thoughtless uncensored adoption of technology can lower the respect for critical thinking, culture pieces and democratic processes. Here Neil tries to indicate a call for a balance and careful relationship between technology and politics in the interest of the public while arguing that technopolies are taking the place of democracies particularly in western nations.

2.6.2. Sherry Turkle: "Alone Together: Why We Expect More from Technology and Less from Each Other" (2011)

In "Alone Together," Sherry Turkle , a psychologist and sociologist, explored the effects of technology on human relations and social exchange. She discussed how the employment of social media, smartphones and virtual reality is changing the way we relate both to ourselves and to others. The work of Turkle is underlined by the way in which digital mediation shapes our experiences of personal communication and social bonds along with the social and political interests of those developments.

2.6.3. Donna Haraway: "A Cyborg Manifesto" (1985)

Donna Haraway, a feminist scholar, in her seminar work “A Cyborg Manifesto” (1985) tried to show the boundaries between humans and technologies (machines). She contended that technology has replaced these boundaries with new formations that create potential rooms of social and political change. In particular, Haraway life as a cyborg raises questions about what it means to live identities and politics among the technologically mediated systems of power and control.

2.6.4. Bruno Latour: "Reassembling the Social: An Introduction to Actor-Network-Theory" (2005)

Bruno Latour, a sociologist and philosopher, proposed another influential proposition known as the Actor-Network Theory or ANT. The latter presents a framework of understanding complicated interrelationships between humans and non-human actors, including technology. Latour in his work stressed the interrelationship of social and technological networks with the way in which these have come to shape politics, power and decision-making processes. ANT gives a rather different twist to technological determinism by emphasizing the role and agency of both human and non-human actors in shaping social and political outcomes.

The additional works mentioned above along with those of McLuhan, Ellul, Heidegger and Winner have significantly contributed to our understanding of technological determinism in politics as we journey into the consequent. They provide diverse perspectives that helps us deepen our insights into analyzing the complex interactions between technology, society and political systems.

2.7 Critical Analysis and Synthesis

The work by McLuhan, Ellul, Heidegger, and Winner offer insights into the philosophical roots of technological determinism in politics. McLuhan agrees that "the medium is the message," whereby technology transforms political systems and structures. Ellul analyzed technological society for risks associated with centralizing power and lessening the authority of individuals with regard to the ability of technology to manage human affairs. Heidegger's analysis raises concerns relating to the instrumental view of the world and its association with the political decision-making process. Winner's argument is that technology is not in itself neutral but carries values of a political kind, and it is in this sense that it characterizes power structures how technology can determine political decision-making and social dynamics.

While these philosophers contribute much to the understanding concerning technological determinism, they also have their critics and alternative explanations have been forwarded. Critics of technological determinism say that social and cultural contexts of technology are overlooked. They maintained that technology in itself is not deterministic but molded by societal factors and human choice. Other views, however, as Lynch (2016) adds, consider the

mutual influence between technology and society. Many scholars have proposed that much as technology has the power to shape society, so has society had an effect on how technology is developed and used. In this view called social constructivism, it is noted that basically social, cultural, and political aspects frame technological developments and their consequences.

As per the aim of this thesis, a more comprehensive understanding of technological determinism in politics can be emerged through an integration of the works by McLuhan, Ellul, Heidegger, and Winner, together with their respective critiques and alternative viewpoints. This makes quite plain that technological determinism is not designed to be a deterministic theoretical framework as it is thought to be but is rather a tool with which to examine the complex interplay between technology and society.

While technology does hold immense power in its abilities to guide political systems and structures, it needs to be claimed by individuals and within social and cultural contexts that holds on to technology. Development, regulation and use of technology in political terms require informed political decisions about the possible implications of technology and the commonly shared values and goals.

Chapter 3: Technological Determinism vs. Social Constructivism: A Philosophical Analysis

3.1 Introduction

The dynamics between technology and society has been tried explained by two contrasting paradigms: Technological Determinism and Social Constructivism. Technological Determinism is a paradigm that assumes technological innovation as the prime factor in societal progress and change. It perceives technology as an autonomous agent with intrinsic momentum, which shapes human values, behaviors, and societal structure. By contrast, social constructivism maintains that technologies are shaped actively by their social and cultural contexts in respect of their development, use, and meaning. According to this view, technology is a product of human agency, negotiation, and interaction rather than an independent force.

This chapter tried to explore these two frameworks from a philosophical perspective. It also tries to discuss each other by applying this synthesis to contemporary technological issues. In so doing, it argues for a nuanced understanding that acknowledges the mutual shaping of technology and society.

Tessema (2021) in his work on Technological determinism versus social determinism discussed the different models in technology plays role by discussing different authors. According to Tessema, speaking to the role of technology writers discuss three models in previous season.

- The technological imperative model: This model tells how a specific technology affects organizational characteristics including structure (Hall, 1962). According to this model, technology is autonomous and has a bigger impact on both people and businesses.
- The strategic choice model: According to this model, human activity produces technology (Child, 1972; McLoughlin, 1999). This approach incorporates a variety of viewpoints. The first socio-technical viewpoint focuses on how human decision-making and choice are used to build a particular technology. Technology is viewed as a dependent variable. The socio-constructionist viewpoint comes in second. This school makes an effort to highlight the significance of a particular technology in relation to its development and sustainability. The third viewpoint is Marxian, which holds that technology serves as a weapon to protect

powerful organizations' political and economic interests. This school holds that designers have the ability to influence technology, whereas employees of a company have little to no influence.

- Technology as a trigger for structural change: Technology is viewed as interference in this model. Technology intervenes in the interaction between human agency and organizational structure. This school maintains that a technology's physical form is unchangeable, even if its meaning evolves with time. The aforementioned models can be used in both comparable and dissimilar circumstances. The growth of technology is typically associated with societal changes, either overtly or implicitly.

3.2 Social Constructivism:

Society as the Architect of Technology

Tessema (2021) stated that according to the social construction of technology concept, people influence technology and vice versa. Humans alter and mold technology to meet their wants. Social groups and technological development flexibility are central to social constructivism. He sited Bijker & et'al (1987) and other social constructivists contend that technological design is flexible. Humans and the natural world are thought to have a complicated interaction. According to social constructivists in Tessema's view, technology's cause-and-effect chain is inherently nonlinear. As the best option they develop an efficient multidirectional model.

Social constructivism approach claims that technology is socially created. Individuals from a variety of backgrounds use, demand, create, and regulate technology. Humans are designing their way of life when they create technology. The process of designing technology creates the alteration of society. Since it is difficult for humans to fully comprehend how a technology works and its effects on the environment and society, we must be aware of its ramifications.

It is thought that the paradigm they propose incorporates both technology items and social groups. This provides a perspective that serves as the foundation for our comprehension of the function of technology. It also describes the elements that contribute to technical advancements, how values are incorporated into the process and how technology and society are intertwined. Obviously,

technological determinism is rejected by social constructivists. In their opnion, no technology has a logical progression. Development of technology depends on a number of variables.

Tessema believed that technologists may create things that are appropriate for sociocultural situations and view the natural world through the lens of human interests. Values in technology are emphasized by social constructivism. Values influence how technology develops and produces tangible results. Technology thus acquires value.

Tessema thought that it is worthwhile to have evaluated technology. Since technology is a part of human connection, he recommended that we should consider how it affects our daily activities before embracing new technologies. Culture is influenced by technology. Diffusion is how new technologies are incorporated into social norms.

New technologies are adapted to by societies. However, ethical issues surface when new technology clash with the interests of various organizations. Social influence and the necessity of ethical consideration are determined to certain extent by who is impacted by a technology.

3.2.1 Brief Philosophical Foundations

Social constructivism states a social determinism by reaffirming technology to be a social product which comes through human agency, cultural norms, and values. The promoters of this theory, generally Brunno Latour, Wiebe Bijker, and Trevor Pinch, claim contextualization, interpretation, and negotiation as the essence to technological development.

Dolwick (2009) discussed the social constructivism in different forms:

1. The Social Construction of Technology: The SCOT framework stresses how technologies are invented through the interactions of different stakeholders like engineers, policymakers, and users. The 19th-century bicycle design and its adoption were related to social preferences for safety, speed, and utility.

2. Actor-Network Theory (ANT): Latour's ANT extends Social Constructivism to treat both human and non-human entities, such as machines and institutions, as actors in a network. In this approach, the co-dependence of technology and society is emphasized.

3.2.2 Implications of Social Constructivism

From social constructivism point of view, technologies permeate with the political, cultural and economic weathers of the times and never have been value-neutral. Issues like privacy versus security within the society often find expression within the design of technologies dealing with surveillance. For social constructivism, different social groups can give different meanings and uses for the same technology. The same social media sites like Twitter could serve as disinformation tools in one setting, and for political activism in another. In addition, social constructivism sees Technologies as always part of larger systems of institutions, power relations, and human relationships. One cannot talk about their creation and use in isolation.

3.2.3 Critques

While social constructivism served to underpin valuable insights about the contingent and negotiated nature of technology, there are a number of limitations in the said field.

Neglect of Material Agency: Most critics indicate that the theory of constructivism neglects material properties and technological affordances. In this case, the electric vehicle will be either feasible or not, depending on the physical limitations of the batteries, rather than anything related to social preferences.

Overload of Complexity: While underlining the many factors making up technology, constructivism risks overloading complexity and losing explanatory clarity.

Disregarded Technological Momentum: When developing certain technologies, they develop a type of "momentum" that is frequently extremely difficult to shift or even oppose. This could

include the worldwide use of fossil fuel during the Industrial Revolution. Constructivism doesn't account for this kind of dynamic.

3.3 Technological Determinism:

Technology as the Prime Mover

One well-known hypothesis of how society and technology interact is technological determinism. Technological Determinism (TD) looks for a single determining factor to explain social and cultural events. Tessema (2021) stated that the word was first used by Veblen, an American sociologist (Ellul, 1964). Technology is viewed by TD as the force of social change. It is the primary driver of societal transformations. The social organization pattern is controlled by technology. Technological determinists contend that technology is the cornerstone of society. They contend that society is being shaped by technology and that technology is changing society. Furthermore, technology has the power to change society. For this reason, the theory's proponents maintain that technology comes first and then human considerations.

There is a claim that technology becomes isolated from human impact, Tessema (2021) argued. It is obvious that technology affects our daily life. According to technological determinism man has no control over any technology. Instead, it takes its own path. Furthermore, technology is beyond human control. The goal of technological determinism is to separate people from their part in the creation and application of technology. Despite reflecting human values, technologies may have unintended consequences. TD believes that advancements in technology are unavoidable.

3.3.1 Brief Philosophical Foundations

Technological determinism is a theory that places technology as an agent of change in society. It bases its description on the Enlightenment conceptions of progress and rationality; it highlights the potential of human innovation for change.

• Thorstein Veblen introduced the concept of "technological determinism" in the early 20th century (Ellul,1964), arguing that technological development determines economic systems and cultural practices.

• Marshall McLuhan (1967) once said "the medium is the message" to describe how communication technologies change human perception and social organization. To McLuhan, it is the nature of a technology, rather than its content, that determines its effects upon society.

• Lewis Mumford (Bailey, 2020) was one who held that the evolution of technology stipulated the course that the civilizations had taken-from agrarian to machine-oriented modern civilization.

Technological determinisms can be of two types: hard determinism and soft determinism. Hard determinism views technology as an independent factor in life, completely unimpeded by human will, through which the outcome of life in society is determined. Soft determinism allows for a measure of human agency but insists that technological development follows an unavoidable course that shapes or influences patterns in society.

3.3.2 Implications of Technological Determinism

Technological Determinism has huge implications in the way societies conceptualize and make sense of progress and adjustment. Amongst the notable scholars, key insights have been given by Chandler (1995), to name a few:

The Linear Model of Progress-Determinism views technological development as an evolutionary process, linearly reaching ever-higher levels of civilization. This can be shown by the transition from an industrial society to a digital one.

Standardization globally: Most of the given technologies tend to make the societies homogenous in a structural way. The recent technology that came in the shape of smartphones made communications homogenous throughout the world without boundaries and cultures.

3.3.3 Critiques

Sometimes, technological determinism is criticized for simplistically rendering the complex relationship of technology and society, yet at the same time signaling or revealing a transformational power of technology.

Neglect of Human Agency: Technological Determinism was criticized because it underestimated political forces, cultural settings, and human choices regarding the development of technologies.

Risk of Moral Breakdowns: It has the potential to relieve individuals and organizations from any moral responsibilities as even technology has been seen as a self-driving agent. One cannot say that the industrial technology alone are responsible for environmental deterioration caused by their intervention; human exploitation is also a contributing factor.

Historical Counterexamples: Technological adoption and adaption are never uniform within a civilization. Whereas some countries have adopted nuclear energy, for example, others have avoided it again for cultural, political and economic reasons.

3.4 Important Questions from Tessema's

Is technology autonomous?

Tessema (2021) presented that some philosophers, like Ellul (1964), believe that technology is an external aspect of society. It is portrayed as an autonomous, self-determining, and self-governing force. Moreover, technology is not regarded as a social product. It cannot be controlled by a human. Tessema mention Ellul (1964) is one of the well-known theorists who embraced this viewpoint. "Technique has become autonomous; it has fashioned an omnivorous world which obeys its own laws and which has renounced all tradition," Ellul asserted with confidence. According to Tessema, for Ellul, no society is able to shape technology and every technological system is being fashioned by technology itself. Additionally according to Postman (1993), "Technique tends to function independently of the system it serves."

Is technology a means or an end?

Tessema mentioned Ellul's (1964) assertion that technology is not a tool to achieve other goals, but rather an end in and of itself. However, he claimed other detractors contend that technology is a tool for satisfying social needs. In this way, it would be difficult to halt the advancement of technology if it became a means. These technological advancements are also hard to ignore.

Is technology neutral?

After analyzing many theories Tessema asserted that technology by itself is neither good nor bad. Instead, it stays neutral. They say that our preferred method of using technology is more important than the technology itself. Furthermore, technology is neither ethically right nor wrong. It is morally reprehensible.

Ellul (1964) argues against the neutrality of technology, arguing that its use mostly determines whether it produces positive or negative effects. He asserts that "technique has its own effects that are independent of how it is used." It has both favorable and bad effects on its own, regardless of how it is used. This goes beyond just purpose. Seeing from this perspective, technology seems somehow neutral in the sense that its use might have a role in molding our activities.

Tessema (2021) stated that technology is not neutral, according to proponents of technological determinism. It is said that our worldview is influenced by the technologies we utilize. Technology is not neutral in Postman's opinion. He contends that "the structure of technology itself determines the uses made of technology." Postman (1993). Furthermore, Winner has a tendency to view technology's political non-neutrality in the sense that it is made to both expand and constrain social options. Additionally, Tessema (2021) contended that technology is not neutral. It is linked to how it is used in society. Since technology is a social product, it cannot be separated it from its social setting.

Tessema (2021) showed that another way that technological determinism can appear is through universalism. Technology may exist outside of a certain historical, social, or cultural setting. However, this does not imply that a certain technology is always linked to the same societal trends.

As a subset of developmental determinism, technological determinism is also known as techno-evolutionism, and its proponents try to understand change in terms of advancement. These theorists define progress in terms of consecutive stages of development. Since technological advancement is a crucial pre-requisite for societal growth, there is a connection between social and technological advancement. Certain social changes are brought about by technological advancements. Technology and society are therefore intertwined.

Is technology creating problems or solving them?

It is true that technology has been advantageous to people, Tessema (2021) argued. People live in a technologically advanced world. Therefore, ethical concerns must to be considered alongside technological advancements before society's moral foundation is undermined and civilization falls apart. Human values need to be taken into account. According to Tessema, some authors contend that technology is still autonomous even though people are keen to take use of it. The key idea is that people must accept technology's shared worth if they are to continue being its subjects. It is thought that technology and society influence each other. They are related to each other. Tessema (2021) needed to emphasize that political and sociocultural factors have an impact on the advancement of current technology.

Winner (1977) attempted to address the relationship between systems of power, authority, and technology in his work "Do artifacts have politics?" He made the case that no specific artifact exists without a particular kind of social arrangement so whenever we adopt a particular technology, we are also adopting a particular social order. In his view, artifacts can enforce social agendas; it is subtle that technology is a collection of artifacts and socio-cultural practices, and that no technology has meaning by itself; a technology can only ever exist and be used in relation to social relationships.

Technology as a material object is created in a social context and functions in complex social arrangements when we recognize that technology is inseparable from society, it becomes clear that no technology remains as an independent entity according to Tessema (2021).

> *Focusing only on autonomous technology is not only an attempt to separate it out from the context in which it was made, but also from the socio-cultural meaning attached to it. P71*

In a similar vein, social practices may not exist without technology. Can man-made material objects come into being in a vacuum? Do they have meaning in a vacuum? Or can they be used in a virtual space?

Tessema (2021) furthered giving an example; Computers are now used in the automotive sector to assist workers with auto repairs. The advent of computer systems has made it easier for mechanics to diagnose automobiles. However he argued that computers lack the ability to communicate with customers. Humans assist them in operating. Do computers experience accountability and responsibility when humans give them specific tasks to complete? Humans are accountable for the technologies they create. He concluded that we must understand technology in the context of society, even though it is a dynamic force that affects it.

3.5 Reconciling the Two Perspectives:

A Dialectical Approach

While Technological Determinism and Social Constructivism are symbolic of these two poles, neither one by any necessity requires the absolute exclusion of the other. It is a dialectical approach that underlines the interdependence between technological and social factors, pointing at their co-evolution.

Feedback Loops: Technologies create societies, but the societies in turn shape the way in which technologies are designed and used. For example, the Internet has changed how people communicate today, but its architecture itself was based on human values of openness and collaboration.

Actor-Network Theory by Bruno Latour: This dialectical approach gets proper meaning if one considers technology and society in the context of one big network of influences. Technologies are not just tools; they are active agents in helping to shape social and material reality.

Here the term “dialectical” is employed to articulate the dynamic, reciprocal relationship between technology and society: one that rejects both extreme technological determinism and pure social constructivism. The dialectical approach allows me to emphasize that while technology is initially shaped by human intentions, cultural contexts, and social needs, once it enters into widespread operational use, it generates new systemic conditions that progressively reshape the structures of human behavior, political institutions, and social consciousness. This is not a linear cause-and-effect process but a continuously evolving interaction where human agency and technological momentum become intertwined, each modifying the other over time.

Through this dialectical movement, each technological innovation emerges as both a product of human creativity and a force that conditions future human possibilities**.** For example, the development of social media platforms was originally driven by human design responding to specific cultural desires for communication and connectivity. Yet, these platforms now exert significant autonomous influence over political discourse and identity formation, structuring how individuals perceive reality, organize political communities, and experience belonging. The dialectical perspective allows me to highlight that while human beings remain agents of technological creation, they are simultaneously re-shaped by the very systems they have constructed, often in unforeseen and unintended ways.

Philosophically, my use of “dialectical” acknowledges that technology and society are locked in an ongoing historical process of mutual shaping, where contradictions between human agency and technological autonomy drive continuous transformation. This dialectical tension forms the core of the global political paradigm shift I explore in the thesis: a shift wherein technologies not only alter political structures but progressively condition the ontological framework within which political identity, agency, and ethical deliberation take place. The dialectical model thus offers a more nuanced understanding of technological determinism: one that recognizes both the continuing relevance of human agency and the growing systemic constraints imposed by autonomous technological development.

Case Studies

Renewable Energies: From the efficiency of solar panels to the political decisions for sustainability backed by public claims, technology provides grounds for every next step toward renewable energies. Herein, both social constructivism and technological determinism meet.

In my view, technology presents itself as fundamentally ambivalent, capable of generating both solutions and crises within the same systemic trajectory. The ecological challenges of climate change, driven largely by industrialization, fossil fuel dependency, and extractive economic models, are themselves the outcomes of earlier stages of technological advancement pursued under the logic of growth, efficiency, and human convenience. These eco-unfriendly technologies reflect historical decisions that prioritized short-term economic development while externalizing long-term environmental degradation. Yet, the very system that produced these destructive consequences also generates new technological responses: such as renewable energy systems, carbon capture technologies, and sustainable infrastructures; which seek to correct or mitigate the harm already inflicted. This duality highlights that technological systems evolve not through linear moral progression but through complex feedback loops, where each technical solution carries the seeds of new challenges.

Ellul's insight into the self-reinforcing autonomy of technical development helps explain this dynamic: once a technology is introduced, it initiates further demands for complementary innovations, often without sufficient ethical interrogation. Renewable energy technologies emerge as responses to climate crises, but they too operate within the same system of technical enframing described by Heidegger; reducing nature to a standing-reserve to be optimized, calculated, and managed. Even as they promise environmental repair, these technologies involve significant ethical and political considerations: resource extraction for rare earth minerals, new geopolitical dependencies, and the potential for emerging forms of **technocratic control** over global sustainability regimes. Thus, technical fixes to previous technical problems often perpetuate the very logic of systemic technical momentum, shifting rather than resolving the underlying dynamic of technological dominance over nature.

Within my view of conditional technological determinism, technologies do not present themselves as inherently "good" or "bad"; rather, they continuously reshape both opportunities and

vulnerabilities, depending on how societies philosophically, ethically, and politically respond. The ambivalent nature of technological systems requires a continuous critical vigilance; one that resists passive optimism about technical solutions while also rejecting simplistic technological fatalism. Authentic human and political agency lies not in rejecting technology itself but in actively interrogating its systemic tendencies, reclaiming ethical responsibility, and embedding philosophical reflection into the governance of technological innovation to ensure that future developments serve not only human utility but also long-term ecological and existential flourishing.

Artificial Intelligence (AI): AI systems are an excellent example of how constructivism and determinism can be combined. While these technologies are the result of social choices, such as how to design an algorithm, they also transform social practices, such as the expectations of privacy.

3.6 Philosophical Implications for Ethics and Policy

More importantly, it has brought into the debate on social constructivism versus technological determinism a set of critical implications for moral judgment and for the development of public policy.

Most common points of convergence upon optismism regarding technonology are found based upon some sort of determinist account of the development of technology as unstoppable, which is considered inherently beneficial. In fact, this only headed towards an uncritical acceptance of technology sans any due consideration of implications upon society.

Social constructionism also calls for inquiries into whose interests certain technologies serve and through which they support the established structures of power. For example, constructivist analyses of AI would point toward critical questions of algorithmic bias and how that hits the least empowered in society.

There is a balance of responsibility with innovation, the realization of dialectics in the approach to the advantages and disadvantages of technological development.

3.7 Conclusive Remarks

In this thesis, I acknowledge that technology is originally a product of human creativity, emerging from specific cultural, social, and political contexts, as emphasized by social constructivist thought. Technologies do not arise in isolation but are shaped through negotiated human interests, power structures, and cultural frameworks. Winner's observation that artifacts carry embedded politics reflects how technological design encodes normative choices from its inception. Yet, while I affirm the validity of social constructivism in explaining the genesis of technological artifacts, I argue that this framework becomes insufficient once technologies enter into complex systemic integration. As Ellul and Heidegger reveal, technologies, once operationalized, often generate a momentum that exceeds original intentions, progressively reshaping the very conditions within which further decisions are made. This is the foundation of my position: a dialectical perspective of mutual influence, wherein human agency initiates technological creation, but systemic technological structures subsequently reconfigure human behavior, values, and political organization.

I contend that we are approaching a critical threshold where certain technologies—especially artificial intelligence, algorithmic governance, genetic engineering, and emerging forms of human-machine integration—may begin to seriously compromise human agency itself. Posthumanist developments such as cyborg enhancement, transhumanism, and AI-mediated decision-making risk displacing the uniquely human capacities for ethical reflection, existential meaning, and political autonomy. These technologies do not merely enhance human abilities; they potentially redefine what it means to be human, replacing the organic richness of human existence with mechanistic logics of optimization, control, and predictive calculation. Heidegger's warning about enframing becomes increasingly urgent in such scenarios, as technology begins to transform human identity into a technically managed project, governed not by deliberative ethical reasoning but by systemic efficiencies aligned with machine values.

While some may argue that technology simply extends human values, serving as a tool to deepen our understanding of nature and society, I maintain that this view underestimates the recursive power of technology to transform those very values. Technologies do not remain neutral vessels of human intention; rather, through their widespread adoption, they reconstitute the parameters of what is considered desirable, feasible, or legitimate. Thus, though socially constructed at their

inception, technologies evolve into structurally deterministic forces that shape global political and social paradigms across diverse cultures. In this way, I reconcile the apparent tension between technological determinism and constructivism by proposing that technological systems exhibit conditional determinism: born of human agency but capable of displacing that agency unless met with critical philosophical, ethical, and political intervention. Consequently, I reject any notion of technological neutrality and argue for a vigilant, reflective engagement with technology, lest we surrender political and existential autonomy to the very systems we have created.

Interaction between Technology and Social Forces

In my thesis, I conceptualize the **"contentious interaction"** between technology and diverse social forces as a dialectical process in which heterogeneous cultural, religious, and political traditions encounter the systemic momentum of technological development. While technologies initially emerge from specific social and cultural contexts, they increasingly acquire a form of autonomy, expanding beyond their origins and imposing standardized structural logics that often conflict with existing cultural norms. As Ellul argues, once technologies are introduced, they tend to evolve according to internal technical demands, often indifferent to the pluralities of human traditions. Heidegger's notion of *enframing* further clarifies how technology restructures human perception and interaction with the world, rendering cultural differences increasingly subordinate to the calculative logic of technological optimization and management.

The role of technologists, particularly those embedded within global corporate structures, innovation hubs, and transnational digital enterprises; reflects the operation of an implicit capitalist-liberal ideology that prioritizes market expansion, efficiency, individual optimization, and perpetual innovation. Though often presented as neutral or apolitical, this technocratic worldview functions as a form of soft political hegemony, shaping global governance structures and economic systems under the guise of technological progress. As Winner emphasizes, technological artifacts carry embedded political choices; the design of digital platforms, data infrastructures, and AI systems encode assumptions about governance, freedom, identity, and social organization. Through these design logics, technologists actively participate in constructing

a global technological regime that increasingly standardizes political and social structures across diverse cultures, even while allowing for superficial variations in content.

Thus, while cultural heterogeneity continues to exist, the interaction between technology and society is marked by growing asymmetry and conflict, as the global expansion of technological systems challenges traditional identities and ethical frameworks. The global political paradigm shift I describe reflects not a homogenization of culture, but a deepening convergence in the technocratic structuring of political authority, driven by systemic technological autonomy and global capitalist interests. My reflection is that this development demands a renewed philosophical and ethical response: one that reasserts the primacy of cultural plurality, political diversity, and existential meaning against the silent expansion of technical systems that risk reducing all human difference to variables manageable within a global technological order. The preservation of authentic human agency requires not technological rejection but sustained critical refelction over the political and ethical trajectories of technological design.

Chapter 4: Technological Determinism in Politics

In this chapter we will focus on analzing technological determinism in politics from philosophical point of view. We will also talk about new technological developments and how they affect political processes: digitalization, artificial intelligence, data-driven decision-making, closely connected to the rise of current social media and its digital platforms and algorithms. Therefore, it goes deeper to unravel the philosophical underpinnings, ethical considerations, and democratic implications that come with these technological shifts, thus shedding light on how complex the interplay between technology and politics has been in the digital age such as ours.

Defining Politics

Here in this thesis, "politics" is defined at its broadest and most basic level:as the entire system of organization through which a society structures itself, defines its values, regulates conduct, coordinates the shared life of its members and ultimately guiding the interactions with the external world. Politics, thus defined, is much larger than election processes, state institutions, or policy debates. It determines every element of social structure, including cultural norms, moral values, power relations, economic organization, and the mediation of meaning in society.

This conceptualization allows for the essentially philosophical character of the question: rather than limiting politics to formal governmental institutions, the thesis considers politics to be the ongoing, interactive process among ruling structures, values, and human agency—altered fundamentally by technology.

It also allows for the thesis to connect the technological determinism with broader political philosophy. The technological context more and more functions as a horizon for the re-negotiation of central political concerns (autonomy, justice, freedom, equality, and sovereignty) within technological imperatives. This is why the thesis is arguing that political philosophy must respond to accommodate the specific challenges posed by autonomous technological systems.

In this sense, the thesis approaches politics not merely as the science of governance but as a philosophical condition that technology intentionally reshapes. This expansive understanding is in accordance with the thesis's ultimate purpose: to have a critical philosophical analysis of the shift of international political paradigms under technological determinism.

The Technological Imperative

With the coming of the digital age, technology has become the new imperative that is directing the course politics and governance take across the world. Digitalization, Artificial Intelligence, and its sidekick (the vast domain of Big Data Analytics) marks an absolutely new age of hitherto unknown deterministic technology. Very often, in many such cases, the imperatives of technology seem to shape political outcomes and the governance process. It has been the theoretical chapter, relating to contemporary manifestations of technological determinism about politics, within the configuration of the philosophical bases, ethical dilemmas, and democratic challenges that the role technology plays in the political arena holds.

Operational Definition to Technological Determinism

Throughout this thesis, technological determinism is employed in a general and inclusive manner. While particular focus is given to contemporary digital technologies: among which are artificial intelligence (AI), social media, algorithmic governance, big data regimes, and surveillance technologies: the thesis is not concerned exclusively with these modern digital expressions. Rather, the thesis conceives of technology as an unfolding and encompassing system that subsumes both past and future technological advancements.

The philosophical foundation (drawing on Ellul, Heidegger, McLuhan, and Winner) treats technology not as isolated instruments or machines, but as a systematic mode of revealing and organizing society. So, though digital technologies are the most prominent and pressing contemporary illustrations, the thesis recognizes that those technologies are extensions of a broader technological advance.

The focus on digital technologies in particular is due to their currently speeding up technological determinism in the political sphere. These technologies most evidently exhibit the deterministic tendencies that are contested by the four philosophers: as they reconfigure identity and participation (McLuhan's media effects and Heidegger's enframing of human subjectivity): they operate with increasingly independent logic (Ellul's concept of autonomous technical progress), and they encode political power relations into their very design (Winner's technological politics).

For instance, AI-facilitated decision-making, algorithmic monitoring, social media echo chambers and the global spread of digital platforms have irretrievably reshaped governance arrangements, policy-making, identity formation and political discourse: all the constitutional concerns of this thesis.

Thus, while contemporary digital technologies supply the thesis's direct empirical reference points, the philosophical inquiry spans a broader historical and conceptual trajectory of technologies that shape political arrangements past, present, and still to be seen.

4.1 Philosophical Foundations of Technological Determinism

Technological determinism refers to the philosophically held view, namely that the development of technology determines and shapes society's way forward based on the exertion of a deterministic effect (usually regarding social structure and culture). Let’s get back to what we have been discussing in the second chapter in this perspective.

4.1.1 Technological Determinism in Politics Through the Lens of Martin Heidegger

Perhaps one of the most debated theories in the interaction of technology with humanities regards technological determinism in structuring the very fundamentals of configuration in society, cultural practices, and political dynamics. Looking at the works of Martin Heidegger develop a set of illuminating insights on the nature of technology and its effect on politics and the human condition in general. Let’s get into Heidegger's critique of modern technology into the political domain through an investigation into the way in which technological determinism shapes power, governance, and political subjectivities. From Heidegger's philosophy, it leads us to understand that technology is not something at the service of humanity but a force in transforming, together with it the very function of politics.

As it was discussed in the second chapter in his most essential essay, "The Question Concerning Technology” Heidegger (1977) points out that what constitutes the essence of technology is not the tool or machine in itself but in the way it reveals the world to us. He introduced the notion of Gestell-that is, a mode of revealing whereby everything (including humans) is reduced to an ordered resource for the purpose of optimization and exploitability. Heidegger does not questioned technological artifacts themselves; rather he questioned the worldview that modern technology has

imposed. As this enframing forms our relationship with the world and others it eventually affects our political realities.

For example, one would find the working of enframing in the existing relation between technology and politics in the adoption of data-driven governance. Many countries around the world use AI, big data, and predictive analytics in policymaking. Such systems, though neutral-looking and effective they frame the citizens as datasets to be managed rather than as human beings with agencies. Heidegger had already warned against enframing: the political system, while set towards maximum efficiency and control, runs the danger of treating human beings as no more than implements of technological procedures.

Technological determinism, in its purest form, posits that technological advancements drive societal and political changes in a linear, inevitable manner. Heidegger's philosophy complicates this view by suggesting that technology does not merely shape political structures but also reshapes the very nature of power and authority. In the modern era, power is increasingly mediated through technological systems, from surveillance tools to algorithmic decision-making processes. This shift exemplifies Heidegger's claim that technology establishes a new paradigm of control and governance.

A pertinent example is the role of social media platforms in shaping political discourse. Platforms like Twitter and Facebook, underpinned by algorithms that prioritize engagement over deliberation, have become central to political communication. These technologies do not merely facilitate political discussions but actively shape the nature of those discussions. For instance, the spread of misinformation and the amplification of polarizing content are direct consequences of algorithmic enframing. The algorithms' logic prioritizes virality and visibility, often at the expense of truth and nuance. Heidegger's concept of enframing helps us understand how such technologies impose a calculative logic on political discourse, transforming it into a resource to be optimized rather than a space for genuine democratic engagement.

Heidegger's critical approach involves the risk of a technocratic government (characterized by the government or control of society by an elite of technical experts) whereby decisions are increasingly lowered to technical experts and technological systems. In such systems, the political sphere is absorbed under technological rationality, shutting out ethical and even philosophical

viewpoints. The analysis developed along Heideggerian lines has suggested that the shift relativizes the participatory and deliberative features of democracy (Heidegger, 1977).

For instance, AI forms part of the judiciary and law enforcement predictive policing algorithms move hand in hand through past crime data in order to predict future criminal activity. While proponents argue that such work comes out efficient and less biased, opponents insist that the tendencies of such systems (which have all been created within the logical framework of enflaming) remain extremely prone to perpetuating systemic inequality through reducing the most complex social phenomena into quantifiable data points and completely eliminating notions of any greater social and ethical contexts. This is the result of how technological imperatives make political decision-making an easy target leaving little room for democratic accountability or oversight. As Heidegger (1977) warned, indeed the moment technology becomes the first technology of governance, it alienates people from politics. In this sense Marxism is exhibited in the digital era of the society like the contemporary season.

Heidegger's philosophy also sheds light on how technological determinism affects political agency and subjectivity. In the age of digital technology, individuals increasingly interact with the world through technological mediations. This phenomenon has profound implications for political participation and identity.

An illustrative example is the rise of "clicktivism" or digital activism, where political engagement is often reduced to online actions such as signing petitions, sharing posts, or using hashtags. While digital platforms have undoubtedly expanded access to political discourse, they have also transformed the nature of engagement. Heidegger's critique of enframing helps explain this shift: by mediating political action through technology, these platforms often prioritize visibility and efficiency over substantive engagement. The result is a form of political participation that risks being shallow and performative, raising questions about the authenticity and impact of such actions.

Additionally, the technological mediation of identity through social media has implications for political subjectivity. Platforms like Instagram and TikTok encourage individuals to construct curated digital personas, often shaped by algorithmic incentives. This curation affects not only personal identity but also political identity, as individuals align their views and actions with the

performative logic of social media. Heidegger's insights reveal how technological enframing transforms the self into a resource to be optimized, even in the political realm.

Heidegger's question concerning technology is highly appropirate in the context of artificial intelligence. To the extent that these systems become part of governance, they raise very urgent questions of ethics, accountability and autonomy. For instance, autonomous decision-making systems in public policy can optimize resource allocation but at the same time potentially exacerbate existing inequalities. Heidegger's warning against enframing reminds us that such systems are in no way neutral tools but themselves the articulation of particular values and ways of being, which then shape their findings.

A second major concern for Heidegger with obscuring algorithms in AI for content moderation that is for the detection and deletion of offensive content on YouTube, Facebook, and other platforms often with no public accountability, is lack of transparency regarding the process. They can even make decisions having strong political consequences in terms of framing public opinion or suppressing the views of those in opposition to official policy. If anything, Heidegger's comments emphasize the need to interrogate precisely those technologies in their function of transmitting political power and agency.

Martin Heidegger's critique of technology serve as a sobering optic for interrogating ways in which technological determinism impresses its effects upon politics. Heidegger (1977) argues that his notion of enframing, as an existential modality of revelation, exemplifies the manner through which technology constitutionally shapes political and economic systems with the very essence of subjectivity and political agency. Enframing the Earth and its people as resources to be maximized, technological framing is at risk of jeopardizing deliberation, participation and accountability that underpin democratic governance.

Heidegger's ideas might also be employed to argue that triumph is possible. It is precisely by putting into question the very essence of technology that we regain agency in determining political futures and struggle against its determinism. The strategy here would be one of adopting technologies critically and reflectively, placing human values before technological imperatives.

In a time when technology takes over nearly everything related to politics, Heidegger's theories come as a strong contrast. He presents a kind of politics beyond the unavoidable reason and his insight encourages looking toward a new relationship between man and technology.

Doing this may perhaps give us yet another look at times when technology serves merely as the path to attainment, whereas a life fully flourishing in mankind is the main result remaining in pursuit.

4.1.2 **Technological Determinism in Politics Through the Lens of Marshall McLuhan's "The Medium is the Message"**

Again as it was discussed in the second chapter, the most well-renowned concept dealing with the transformative effects communication technologies have on politics is Marshall McLuhan's "The Medium is the Message," (1994). Not focusing on the content of the communication but on the medium itself, McLuhan advances a convincing argument in relation to how technologies reshape political landscapes as an effect of reshaping perception, interaction and patterns of power in the human element. Here we try to discuss McLuhan's insights into their application to technological determinism in politics based on historical and modern examples.

Perhaps the core of McLuhan's philosophy is given in the concept "the medium is the message," or differently said, the properties of media rather than its content, are what determines the influence that medium has on a person and society. McLuhan saw each medium as one reorganizing human cognition and social organization, changing the very way humans experience the world. While content may well inform or entertain, it is the medium that really shapes the interactions of humans and by extension how politics is conducted.

For instance, as McLuhan notes, the printing press spread information, but also rearranged society along lines of linear thought and individualism. This shift in technology thus provided the conditions under which modern political forms, such as liberal democracies, boasting of rational debate and individual participation have flourished. In the same manner the Internet and social media, with immediacy, connectivity, and decentralization, remake political discourse. McLuhan

invites us to follow such shifts in media technology in the changes within the dynamics of political power and governance.

At the center of McLuhan's media theory stands the profound distinction between medium and content. While content refers to the explicit information communicated (political speeches, policies, ideologies) the medium refers to the technological form through which this information is transmitted. McLuhan's famous assertion that "the medium is the message" signifies that the structural properties of the medium exert a deeper and more enduring influence on individuals and societies than the transient content itself. Each medium reorganizes sensory perception, cognitive patterns, and social interactions, subtly but fundamentally shaping how individuals engage with political discourse and how collective identities are constructed.

Applied to political identity, this insight reveals that media technologies do not merely distribute pre-existing political ideas but actively generate new modes of political subjectivity. For example, the linear, analytical nature of print media historically fostered rational deliberation, nationalism, and legalistic political institutions, promoting stable, institutional forms of identity. In contrast, digital social media platforms—through their logic of immediacy, virality, emotional amplification, and fragmented attention—transform political identity into performative and reactive forms of engagement. Individuals increasingly define themselves through algorithmically curated digital personas, while collective political alignments are shaped by real-time emotional resonance rather than sustained rational debate. Political belonging becomes fluid, affective, and transient, reinforcing echo chambers and polarizing tribal affiliations.

Thus, following McLuhan, I argue that the medium itself constitutes a determinative force in reshaping political identity under technological conditions. In the digital age, political agency is increasingly mediated by algorithmically engineered environments that structure what is visible, who is heard, and how belonging is constructed. The technological form of media conditions not only the content of political life but also the very being of political subjects—reshaping how individuals perceive themselves, others, and the political possibilities available to them. This structural transformation of political identity formation contributes directly to the global paradigmatic shift described in my thesis, wherein technological systems operate not merely as

neutral tools, but as ontological forces that redefine the landscape of human political existence itself.

Most striking about McLuhan's work is how he looks at a developing power through the way media technologies do their work. Traditional media (newspapers, television,…) put information in the hands of the gatekeepers: journalists, editors, broadcasters. Media forms that assimilated hierarchical political structures commanded top-down communication and control.

Digital media (social media, the internet and the like) have radically decentralized communication. Twitter, Facebook, and TikTok enable users to create and publish themselves, bypassing the traditional gatekeepers. But where such decentralization seems democratizing, McLuhan's insights show how the medium exercises novel modes of control: algorithms control visibility and engagement, creating echo chambers that give pride of place to sensationalism over deliberation. The manifestation of this has been the proliferation of populist leaders using social media as a conduit for immediacy and emotional appeal, thereby bypassing traditional institutions and going directly to their base.

For example, Donald Trump's use of Twitter during his presidency as an example of McLuhan's thesis: whereas Trump's tweets often bypassed mainstream media filters, setting the political agenda and speaking directly to supporters, the medium's characteristics-breathlessness, immediacy, virality-shaped the content and tone of political discourse, privileging polarization and reducing complex issues to excerpts. McLuhan's argument helps us understand that the medium's structure rather than its content, drives these political transformations.

McLuhan's insight carries through into political participation and engagement. The shift from print to electronic to digital media changes dramatically the degree to which citizens participate in politics. Print encouraged a culture of reading and reflection that comports well with the ideal of deliberative democracy. McLuhan argueed that television focuses attention on the visually appealing and emotionally resonant, favoring the charismatic leader over meaningful argument.

Another paradigmatic shift is digital media, especially social media and the internet. To the extent that these platforms make possible wider participation, they also fracture public discourse. Hashtag movements like #BlackLivesMatter and #MeToo have made visible in which ways social media

can organize basic activism and center voices otherwise marginalized. McLuhan's thinking here helps us remember to ask how those movements are shaped by the characteristics of their medium. An emphasis on immediacy and visibility often translates into performative activism, where sharing or posting replaces sustained engagement.

Additionally, McLuhan's notion of "global village"—a world interconnected by electronic media—highlights the paradox of digital political engagement. While social media connects individuals across geographic boundaries, it also creates localized echo chambers. Algorithms curate content to align with users' existing beliefs, reinforcing polarization and reducing opportunities for cross-ideological dialogue. McLuhan's work helps us critically assess whether digital media enhances democratic participation or exacerbates division.

Another critical contribution of McLuhan's philosophy is his exploration of how media technologies reshape human identity and also political identity. According to McLuhan (1994), each medium extends human faculties, altering how individuals perceive themselves and their role in society. For instance, print media emphasized individualism by fostering private reading and reflection. In contrast electronic media, such as radio and television, created collective experiences, shaping a more communal sense of identity.

Social media further transforms political identity by encouraging performative and selected personalities. Platforms like Instagram and TikTok incentivize users to construct digital identities optimized for visibility and engagement. This logic extends to political identity, where individuals align their views and actions with the aesthetics of the platform. For example, the phenomenon of "Instagram activism" reflects McLuhan's observation that the medium shapes not only how messages are conveyed but also how individuals understand themselves as political agents.

While the approach of McLuhan has been very useful, thus providing a good basis to understand technological determinism, critics also unavoidable. According to scholars, McLuhan's emphasis on the role of the medium threatens to undermine human agency and the role of social, cultural and political contexts within which media are consumed. For example, social media platforms shape political participation but are also shaped by users and movements. For example, the so-called "Facebook revolution" of the Arab Spring has shown how digital platforms have been used by activists for political mobilization and how media technologies are contested rather than pre-

determined.

Further, McLuhan's focus on the structural effects of media leads him to underestimate the role of content. The medium may condition receipt, but content can be the driver of political change. For example, the video of George Floyd's murder went viral on social media and set off protests all over the world. However, here content broke through the structural confines imposed by medium.

McLuhan's conclusions can amazingly appropirate with regard to modern development in technology like artificial intelligence for example. Fake videos and tailored news feeds are just some examples of how the artificial intelligence driven media system makes this dissolution between medium and message, with McLuhan's proposition standing forth. Technologies such as these raise very serious questions about the authenticity and reliability of political communication since they are molders of reality, other than being information utilities.

One hypothetical case could be the application of AI-generated fakes in election campaigns in order to distort reality through mediums. A fake video about a political candidate would influence popular sentiment not because its content is true, but rather because the medium has been able to create an illusory impression which looks convincingly real. While McLuhan has insisted that it is the medium that shapes human perception, therefore, the critical judgment on how AI technologies remold political realities needs urgent consideration.

The work of Marshall McLuhan, "The Medium is the Message," constructs a framework that is incredibly profound in which to set one's understanding of technological determinism in politics. McLuhan, shifting the focus from content to medium, lays out a way in which communication technologies shape political structures, engagement and identity. His insights challenge us to consider not only the opportunities presented but also the risks that come with emerging media technologies.

In this world where digital media has taken over and AI has become part of it, McLuhan's work is even more current. His work thus invites us to reflect critically on how media technologies shape political dynamics while envisioning how these may be harnessed toward democratic ends. Being able to convert this message of the medium into normal language will see us through the complexities wrought by technological determinism and those it has caused in the political sphere.

4.1.3 Technological Determinism in Politics Through the Lens of Jacques Ellul's "The Technological Society"

In The Technological Society, Jacques Ellul elaborates the sharp analysis of technological determinism, placing at the heart of his approach how technological development shapes and constrains human behavior, societal structures, and political systems. The work by Ellul insists that technological progress operates independently, imposing its logic on all aspects of human existence including politics. Let's try to look into the autonomous technology itself and the implication of the same on the political structures, and the relevance of the same in the modern and contemporary political context from Ellul's philosophical point of view.

The central argument in Ellul's The Technological Society (Schuurman, 1977) is that technology develops according to an internal logic independent of human control and ethical considerations. He contends that technological advance is self-accelerating because once an invention appears in a technological environment, it creates further conditions that in turn advance and create a self-generating cycle. This autonomous process promotes efficiency and optimization often at the expense of traditional values, cultural practices and political ideologies.

Although most thinkers believe in the neutrality of technology, Ellul is firm in insisting that technology is intrinsically deterministic (Schuurman, 1977). Technology changes human conceptions and social standards by bringing about new possibilities that society cannot bypass. The invention of the printing press revolutionized not only the dissemination of information but also the very sense of literacy, education and political discourse. Similarly, digital technologies have reshaped political communication, governance and citizens' engagement in ways quite in line with Ellul's proposition.

In that respect, technological autonomy in the thought of Ellul (Schuurman, 1977) underlies how technology dictates the development of political structure. Schuurman (1977) emphasized that Ellul argued that "Political institutions show an increasing conditioning by the imperatives of technological efficiency rather than by ideological or other principles and values." This is well reflected in the growth of bureaucratic governance whereby decisions are increasingly being made

via analysis, algorithmic exercises and technical awareness rather than by democratic deliberations.

One example is how the industrial revolution influenced governance. The said industrial modes of production were called to bring in new kinds of political arrangement in the factor of managing economic complexity. It gave way to centralized states and institutions of regulation. By that very virtue, there's technocratic governance in the aftermath of digital technologies whereby decision makers at the policy level depend upon Big Data analytics, AI and surveillance systems for arriving at decisions. While they enhance efficiency, they also result in centralizing powers and are hence a question of accountability and transparency.

For example, the Chinese social credit system clearly reflects Ellul's concerns about technological determinism: using advanced surveillance technologies and AI to monitor the behavior of some citizens, it rewards or punishes them by altering access to services and opportunities. Although it has been justified as a means of improving social order, the system clearly reflects how technology, efficiency, control,and optimization can come to dominate over democratic values and individual freedoms.

But the actual root of Ellul's critique of technological determinism is actually a critique of "technique" which his word for the means created to pursue efficiency. To Ellul (Schuurman, 1977), modern politics has been brought into submission by technique; technical solutions crowd out political discourse and moral judgments. This phenomenon clearly expresses itself in the way that governments attempt to tackle complex problems like climate change, economic inequality and public health.

For example, the same reservation of Ellul find their vivid illustration in such so-called global responses to the COVID-19 pandemic as contact tracing apps, vaccine distribution algorithms and predictive modeling. Technological remedy it would seem, which governments fell back upon in order to attempt the management of the crisis. Often deployed by downplaying public deliberation, they are being used in ways that perpetuate ethical disputes over privacy, equity and states-citizen balance. However, Ellul (Schuurman, 1977) reminds us that no number of technological fixes will substitute for political processes indispensable to the relief of greater social tensions.

Probably the most important contribution from Ellul's analysis is the tension between technological determinism and democratic values. According to him (Schuurman, 1977), logic at times stands in direct opposition to a number of big principles of participatory democracy such as transparency, accountability and citizen empowerment. While technological systems have grown in ever-increasing complexity, operability and intelligibility depend on specialized knowledge; hence, a split opens up between technocrats and ordinary citizens.

This is manifested in the growth of algorithmic governance whereby resource distribution, policing and welfare become increasingly controlled by algorithms. Examples run from predictive police algorithms in the United States, criticized for targeting minority neighborhoods and perpetuating structural injustice, to the most common aspects of bureaucratic practice. It is here that Ellul's critique of method really lies at the heart of how such institutions lock in power relations and diminish democratic accountability.

Even in the deterministic approach, it is still possible to work against technological domination, according to Ellul (Schuurman, 1977). Schuurman recalled that according to Ellul, society must critically weigh in the progress and its implications regarding technology, recover the initiative prior to autonomous progress. In return, such resistance requires ethical reflection, cultural resilience and political will as a counter movement against uncritical adaption.

Consider for example the worldwide movement for digital rights: activists labor for policies protecting personal privacy and ensuring transparency in regard to and equal access to, digital technologies. This constitutes no less than an attempt to recover political agency faced with technological determinism and thus falls under what Ellul meant by an ethics of technology.

That is countertrend to some growing movements in the sustainable technology revolution, whereby lies a tension to defy even the logic of efficiency and optimization. Examples being, to name a few, the developments around free and open-sourced software, beginners community-owned renewables and AI for the public interest. The above are examples of emergent movements that constitute one avenue through which agency may be redeemed and technological innovation again aligned to democratic ends that serve ethics.

Ellul's analysis is the most relevant to the discussions of contemporary debates upon recent technological developments like those dealing with AI, automation and digital platforms. They are also manifestations of the self-accelerating character of technological progress since improvements in one area encourage further progress in other areas. For example, the recent expansion of AI applications has created immense demands for huge data collection, raising ethical questions of surveillance and privacy.

A very relevant example in this vein is the use of AI in the electoral process. With microtargeting and sentiment analysis, political campaigning has given the way to so far unknown dimensions of profiling and personalization toward the electors. Although these technologies reinforce efficiency within campaigning, they have concurrently brought many different concerns with respect to manipulation, polarization and overall public trust of democratic institutions to the forefront of the discussion. In other words, Ellul's critique of technological autonomy invites us to consider how those very technologies shape political behavior and power relations.

However, more than that Ellul's insights are indispensable for the proper geopolitical framing of technological determinism. Global competition in technological expertise. For instance, between the United States and China, reflects how technological development secures the struggle for power internationally. Such competition defines world governance, trade policies and military strategies once more underlining the pervasiveness of technology in political decisions.

One of the important solving approaches to technological determinism in politics is represented by Jacques Ellul in his work The Technological Society (Schuurman, 1977). He gives a very meaningful interpretation of such phenomena as autonomous technology, politics subordinated to technique, and the ruin of democratic values in the context of technological progress. In his work, Ellul (Schuurman, 1977) reveals how technological advancements apparently determine the features of political systems and their shift from ethical positions to mere functionality by using both historical and contemporary examples.

The call of Ellul to resistance against technological determinism is curiously appropirate in today's rapidly changing technological ecosystem. As society struggles with challenges thrown up by AI, digital platforms and algorithmic governance, his work has much to contribute to ethical reflection and political engagement. Agency has to be regained by means of critical interrogation of the role

of technology in shaping political systems, such that technological progress is coincided with human values and societal goals. The legacy of Ellul beckons us to dream about a future wherein technologies would serve human beings, rather than humans serving technology.

The nexus of technology and power: synthesis

The nexus between technology and power lies at the heart of the global paradigmatic shift I describe in this thesis. Technological development does not unfold in a political vacuum but is deeply enmeshed with existing structures of economic and political authority. As Ellul illustrates, each new technological innovation initiates further dependencies that serve the interests of those already positioned to control and benefit from these systems. Heidegger further warns that technology transforms not only material conditions but the very way reality is disclosed, reducing both nature and human beings to resources subject to technical management. In the global capitalist context, this convergence enables economic elites, technocratic institutions, and transnational corporations to consolidate control over infrastructures, data, and public discourse, producing a political order increasingly governed by technocratic rationality rather than democratic deliberation.

This systemic transformation fundamentally alters the nature of politics itself. Political participation is no longer situated primarily within traditional forums of collective debate and ethical judgment, but instead increasingly mediated by algorithmically curated media environments that shape identity, perception, and public discourse, as McLuhan's media theory elucidates. The very architecture of political power becomes embedded within the design of technological infrastructures, as Winner demonstrates, privileging efficiency, predictability, and systemic control over participatory agency. This global paradigmatic shift signifies not merely a new configuration of rulers and institutions, but a deeper ontological reordering of how human beings relate to governance, belonging, and political subjectivity under the expanding logic of technological systems.

Yet, I maintain that humanity is not without alternatives. The response to this unfolding transformation lies in cultivating a philosophical awakening capable of critically interrogating the unquestioned momentum of technical development. Drawing from Heidegger's call to *question technology*, I argue that authentic political agency requires societies to embed ethical reflection,

cultural plurality, and democratic oversight directly into the governance of technological innovation. Rather than rejecting technology itself, this alternative envisions a **post-technocratic order** in which technological systems are consciously subordinated to human values, existential meaning, and long-term ecological and political sustainability. Such an approach demands that we reclaim political spaces for ethical deliberation, resist the reduction of existence to calculable data, and cultivate the reflective capacity necessary to ensure that technology remains a servant of human flourishing rather than its master.

4.2. Recent Technological Developments: A Philosophical Analysis

The last couple of years have been unique in the digital developments that have made transformed politics and governance absolutely unavoidable. Just to name a few, digitalization, artificial intelligence, big data analytics, social media platforms, digital platforms, and algorithms are all such. Looking at this technological development from a philosophical perspective helps to go into the underlying assumptions, normative implications, and ethical considerations trying to bring out how technology shapes political processes and institutions. Looking at the rapid trajectory of technological advancement serious investigation has to be made in order to take appropriate intervention before it is too late.

4.2.1 Digitalization and Governance

Digitalization had come with the big sign of changing governance through the enforcement of efficiency, transparency and citizen engagement. On the other side, it also raised concerns about data privacy, the rise of digital divides and the degrading of public confidence. That is to say, from a philosophical point of view, the digitalization pushes one to questions of power, accountability and legitimacy about governance. Philosophical analysis enables us to transform critically the balances between efficiency and transparency, innovation and privacy, and security and liberty entailed within this new digital environment.

The digitalization of governance processes has brought new possibilities for responsive and citizen friendly governance. Basically, the governments are using digital technology for reductions in administrative tasks, reduction in bureaucratic diffictulties and improvement in service delivery.

Case Analysis:

- This is normally cited as an excellent example of digital governance, given that it is already using digital ID cards and systems of online voting. In other words, those innovations did not only reduce excessive bureaucracy in administrative procedures, but also increased citizen participation and runs service delivery. In Estonia (Kattel, 2004), digital platforms put one in possession of effective and transparent means for conducting government.

- Singapore's Smart Nation (Chia, 2016) is powered by digital technologies and data analytics in pursuit of better governance and at the same time, citizens' quality of life. Hence, it has instituted measures such as smart transportation systems, digital payment platforms and data-driven urban planning to provide a technologically advanced and efficient city-state that shows how digitalization can turn into concrete governance.

4.2.2. Artificial Intelligence and Data-Driven Decision-Making

Artificial intelligence and data-driven decision making algorithms henceforth fast bring in a new era of governance. These new algorithms take on a more central role in decision making processes, promising improved efficiency and objectivity but raising deep ethical and philosophical dilemmas according to Charles & et'al, (2022). From inquiries into algorithmic bias and discrimination to transparency and accountability, philosophical analysis helps us interrogate the normative foundations and democratic legitimacy of algorithmic governance. With artificial intelligence and algorithms of machine learning incorporated into governments, they will be better placed in analyzing vast amounts of data that can help advance evidence-based policymaking and predictive analytics.

The big data quantitative measures policymakers are empowered to utilize today allow one to identify patterns, trends, and correlations that might inform the development of policies. For instance, data on healthcare use patterns and disease could be efficiently utilized to garner resources for better health outcomes. Second, data-driven governance enables citizen engagement by providing customized services—making life easier. Therefore, chatbots and AI interfaces can provide service and information to people when needed, increasing convenience and accessibility. Navigating the realm of data-driven governance is not free from related challenges. Protecting data privacy and security is first and foremost in securing public trust. Moreover, algorithmic biases and the necessity of accountability and transparency of decision processes demand alertness and measures as well. AI revolution from the perspective of philosophy is further discussed in the next chapter of the thesis.

4.2.3. Social Media, Digital Platforms, and the Algorithmic Public Sphere

In the current period, social media and digital platforms have emerged as important means of political communication, mobilization and persuasion. But the algorithms that keynote these often give primacy to virality and engagement over factually accurate civic deliberation (a cause of the emergence of echo room that fasten polarization). Doing philosophical analysis will help in convert how algorithmic content selection and moderation have consequences for democratic discourse and intended democracy, particularly in forming collective identity in a digital age.

With the rise of social media and online platforms effects upon political participation and consequently upon public opinion have become widely felt. Social media has turned into a strong field of political discourse due to its power in facilitating ways by which politicians are able to talk to citizens directly for support. Social media is interactive in real time enables rapid information exchange and in turn political activation. In this case at least human judgment is excluded from the decisions of most digital platforms on what content reaches whom. Social Media now has more than 4000 data points on an individual. Algorithms show the content which is getting much more personalized towards an individual's taste and behaviors that give rise to echo filter bubbles decreasing one's exposure to a wide variance of opinion. Recently in the context of political campaigns, social media have become strong tools because they enable them to conduct targeted advertising and messaging within demographic segments. Further, this fact transformed the

political campaign greatly: today, it can reach an even bigger audience in minimum time with very low expenses. Also, concerns related to the influence of misinformation, fake news and manipulation of public opinion have also come to the front.

Digital platforms have ravaged traditional structures of information that controlled access, broke media monopolies and gave way to citizen journalism and other alternative news sources. That, of course, is good in the sense that it affords ease of access to diversity but also brings in questions as to the reliability and credibility of sources.

Case analysis:

- It was the case of the 2016 United States presidential election where, according to Ekwueme & Folarin (2018), "social media platforms and algorithms started to pull political discourse towards a new direction: some political targeting with personal data exposed, gained through Facebook. The “Cambridge Analytica” scandal unfolded serious concerns with data privacy and algorithmic manipulation introduced by social media into democratic processes.

- Social media gave a lot of wind in the sails to the "Black Lives Matter" movement (Carney, 2016). Activists would use the hashtag #BlackLivesMatter to bring attention to racial injustice and police brutality. Be it for organizing protests or sharing video evidences of incidents to stir public support, social media was with the way for all of it.

4.2.4. Technological Developments and Political Processes:

Sheltered in the core of the contemporary world are technological developments that have set in motion immense changes in political processes at all levels. Particularly digital technologies changed political communication through the opening of new avenues by which politicians, parties and citizens could make contact and be engaged. With little doubt, the emergence of platforms such as social media made real time conversations possible. Politicians can now reach their constituents and propagate their message directly.

At the same time, digital tools offer capabilities for providing room for underlining movements to raise awareness and organize support for the causes they value most. Online activism and digital campaigning have become an important driving force to change political landscapes and fight for social and political change. These technological innovations have given rise to democratizing access to political participation by lowering the threshold of entering voices of previously excluded groups. In addition, emerging technologies like the Blockchain present potential solutions toward enhancing the transparency and security of political processes, including identity preservation of voting systems and increased trust in the process of campaigns.

Case Analysis:

- The 2008 Barack Obama presidential campaign rallied support and engaged with voters through the use of digital technologies and social media platforms, as commented by Hughes & et'al (2010). Online platforms were used by campaigns targeting a huge audience for sharing messages of the campaigns and basic events. That marked the turning point in political campaigns and showed the power of digital tools in mobilizing support.

- The Arab Spring, series of pro-democracy uprisings initial in 2010 (Alhinidi & et'al, 2012), is a concrete example of the use of digital technologies for political mobilization. At the ground level, many have used Facebook and other social media technologies. At the network level, the protesters have taken advantage of Facebook and twitter in various forms of activities from the preparation and taking of action to the coordination of the movements. These social networking technologies have significantly boost the public image and increase in numbers of the participants of the movement.

4.2.5. Philosophical Reflections on Recent Technological Developments

In other words, the philosophical approach to the current development of technologies in the political sphere promises to offer informatics about how technology shapes processes, institutions, and norms of politics. Such critical analysis of the presupposed tenets of digitalization, artificial

intelligence, data-informed decision making, social media and digital platforms among others, represents a huge source of insight into the complex interplay of technology and politics in the digital era. Future demands an interdisciplinarily large level toward policy makers, researchers and society as a whole for the integration of ethical reflection in technological innovations that will uphold democratic values, protect human rights and promote social justice in the digital era. It is here that philosophical reflection and critical engagement may guide us in negotiating the ethical complex that technological development presents in politics toward a more just, fair and democratic future.

4.3. Ethical Considerations and Philosophical Dilemmas

Talking about the technology and politics, a concern of ethics and democratic consequences will arise. Philosophical analysis can help uncover the ethical difficulties technological developments in politics pose, from privacy, surveillance and protection of personal data to questions of the legitimacy of algorithmic decision making procedures and democratic decay. The democratic consequences of new technological developments would mean a movement toward the end of frameworks in moral decision making, democratic rule and social justice in the digital era such as ours.

4.3.1. Privacy and Surveillance

Digital technological proliferation raises concerns about privacy, surveillance and data protection. Philosophical analysis such as like this helps us to guide the battle of war regarding security versus privacy, transparency versus secrecy and individual rights versus collective security in the digital age when one suggest measures that would address protection of privacy rights, improvement in transparency and democratic atmosphere in the use of surveillance technologies.

For example, according to Andregg (2016), the Snowden revelations in 2013 about the depth of government surveillance programs, like that of the PRISM program by the NSA, exploded into a huge debate on topics related to the balance between national security and individual privacy. They were mass collections of data from Internet users around the world, emails, chats and surfing

history, perturbingly related to mass surveillance, civilian liberties and the erosion of rights to privacy.

Ethical dilemma: Security versus Privacy Debate: The ethical dilemma lies in that governments justify surveillance programs that have been in place or will be initiated on grounds of national security, while on the other side, critics crying out argue that they are going to infringe on individual privacy rights and civil liberties. From this philosophical point of view, what it really turns on is one of lawfulness for state surveillance, the scope of government powers, and what rights people have toward privacy and autonomy in light of the emerging digital age.

Such examples as government surveillance programs underscore perhaps the most timeless debate between security issue and the right to privacy of individuals. It creates ethical concerns of what must be arrived at or considered regarding the scope that ought to be assumed by government surveillance, the use of security apparatus in relation to civil liberties and protection of the individual's privacy in digital environment. Philosophically, this dilemma shows the sensibility brought about by autonomy, transparency and accountability in democratic governance.

4.3.2 Algorithmic Bias and Discrimination

Most algorithms that are used in any decision making process are generally trained on biased information pool, which further propagate algorithmic bias and discrimination. Through its inputs to this debate, philosophical analysis adds an appreciation of the ethical dimensions of algorithmic bias, taking up questions of fairness, justice and accountability in algorithmic decision making processes and calling for reduction of bias and increase in transparency toward more algorithmic accountability in governance.

For example, predictive algorithms have been used by law enforcement agencies in the identification of areas that stand at a high risk of committing a crime and deploying their forces in such areas. Such algorithms have recently faced a lot of criticism as they keep going racial bias and discrimination. According to studies, predictive policing algorithms normally target the marginalized communities of society, causing over policing and disproportionate enforcement actions against minority groups.

Ethical Dilemma: The ethical dilemma focuses on how fair and accountable algorithmic decision making in policing is. Much as the predictive policing algorithms are tools for preventing crimes and ensuring public safety, they have been associated with algorithmic bias, racial profiling and systemically other forms of discrimination. A number of philosophical questions arise with respect to the role of technology in continuous systemic inequalities, the responsibility resting upon the designers of policymakers and the requirement for transparency and oversight within the realm of algorithmic decision making.

Reflection: Addressing Algorithmic Bias and Discrimination The example of predictive policing algorithms helps illustrate broader ethical issues that algorithmic decision making raises in law enforcement. That algorithms are biased and carry out discriminatory practices raises some very important questions of fairness, justice and accountability within a government. Philosophically, it calls for a critical examination of the assumptions and values entailed in the algorithmic systems and their implications for social justice, equality and human rights.

4.3.3 Democratic Legitimacy and Governance

The increasing utilization of digital technologies in governance gives way to questions that concern democratic legitimacy, participation and accountability. Philosophical inquiry can be of great importance in the critical examination of the bases of digital governance founded on the principles of democratic representation and political accountability in the digital age. The recommendation is for steps that would secure democratic participation, transparency and accountability within the processes of digital governance.

For example, as stated by Wyatt (2008), there are concerns about democratic processes cast over the increasing use of Social media platforms like Facebook and Twitter to influence public opinion during elections and related campaigns. Social media algorithms have been manipulated to spread disinformation, polarize communities and undermine trust in democratic institutions by foreign actors, political actors and special interest groups.

Ethical Dilemma: Here the ethical dilemma concerns the integrity and legitimacy of democratic governance in the digital age. The problem with manipulating social media for political landscape

is basically one of electoral integrity and it represents the role that technology is taking up in modeling public discourse. Philosophically, it questions the rights and responsibilities of social media companies, regulatory frameworks for democratic processes and the roles of every citizen in fighting misinformation and promoting digital literacy.

Reflection - Democratic Integrity: The case-study with manipulation of content on social media and disinformation campaigns provides a basic example of the ethical concerns to preserve democratic processes and institutions in their new and disruptive form within the digital age. The proliferation of misinformation and manipulation inside social media platforms is raising serious questions about the integrity of elections, the legitimacy of democratic governance and more fundamentally, the role that technology plays in shaping public discourse. Philosophically, one may locate the crisis of this dilemma in part from a requestioning of democratic norms, digital literacy and responsibilities of technology companies, policymakers, and citizens toward democratic values more generally.

4.4. Deterministic Role of Technology in Politics

The deterministic role of technology in politics manifests as a profound restructuring of the very foundations of political power, discourse, and human subjectivity. As Ellul contends, the self-propelling nature of technical innovation gradually subordinates political authority to technocratic expertise, where algorithmic systems, AI, and big data analytics displace democratic deliberation with a regime of quantification and optimization. Politics, once grounded in ethical dialogue and participatory agency, is increasingly governed by systems whose inner workings remain opaque to the citizenry they govern. Heidegger's notion of enframing reveals a deeper ontological shift: technology reconstitutes the human subject as a resource—a data point within vast algorithmic logics—transforming citizens into objects of administrative calculation rather than active participants in their own governance. McLuhan's insight that the medium itself becomes the message further elucidates how contemporary digital platforms fragment political discourse, privileging immediacy, spectacle, and emotional resonance over reflective, reasoned engagement. Meanwhile, Winner demonstrates that political power is not only wielded through institutions but

also inscribed into the very architectures of technological systems, embedding hierarchies within the design of infrastructure itself.

These phenomena operate through several interwoven mechanisms that constitute the machinery of technological determinism. Ellul's autonomy of technical development asserts that every new technology demands its own adoption, setting in motion irreversible chains of dependency that foreclose alternative pathways. Heidegger's reduction of social complexity into data serves to simplify the political world into calculable fragments, eroding the qualitative dimensions of human existence. McLuhan's media conditioning restructures perception itself, filtering political understanding through the affordances and biases of each technological medium. Winner's analysis uncovers how the material design of technological artifacts silently predetermines social organization, embedding political choices at the level of technical configuration. Together, these mechanisms form a self-reinforcing system wherein politics is increasingly shaped not by human intentionality, but by the inner logic of the technological apparatus itself.

Hence, the chapter is a philosophical analysis of aspects of technological determinism in contemporary political life. It pays attention to current processes of technological change and their possible implications for political procedures, institutions and practices. We will be doing this through a critical assessment of these developments, given their ethical dimensions and philosophical bearings, in deep detail, in order to familiarize ourselves with complicated points of technology and politics in the digital era. What is called for now is ethical deliberation, democratic dialogue and interdisciplinary collaboration by policy thinkers, researchers and all of civil society in the quest for a way to make technological innovations ensure democratic values, human rights and social justice in the digital era. In this regard, philosophical reflection and ethics can provide a sort of different map for surfacing through technological landscape to a path leading toward a more just, equitable and democratic future.

4.5 Technology in Non-Democratic Systems

In my thesis, I have emphasized liberal democratic systems (particularly the United States) because they offer clear and visible examples of how technological determinism restructures political participation, identity, and discourse within societies that formally uphold democratic values, free

speech, and individual autonomy. However, I fully recognize that the global paradigm shift I describe cannot be confined to liberal democracies alone. Indeed, one of the most significant aspects of technological determinism is its capacity to operate **across regime types**, reshaping political communities regardless of whether they are democratic, authoritarian, or hybrid systems. The logic of technological systems (as Ellul, Heidegger, McLuhan, and Winner reveal) is fundamentally systemic and indifferent to political ideology. Once adopted, technologies tend to generate autonomous dynamics that embed themselves into the structure of governance itself.

In authoritarian and non-democratic regimes, the convergence of technology and power often manifests even more starkly. Technologies such as AI-driven surveillance, predictive policing, biometric tracking, and behavioral scoring systems are deployed to entrench political control, suppress dissent, and manage populations with unprecedented precision. China's extensive social credit system and facial recognition infrastructure serve as paradigmatic examples of how algorithmic governance can become a tool for state control, shaping not only behavior but identity and even ethical norms. In such systems, technologies not only transmit information but actively limit informational plurality, suppress alternative narratives, and centralize epistemic authority within the state or ruling elite. McLuhan's media theory remains highly applicable here: even when content is controlled, the *medium itself* (its structure of access, visibility, and surveillance) conditions political consciousness in profound ways.

The ethical challenges in non-democratic settings are therefore particularly acute. Unlike liberal democracies, where there is at least nominal space for public discourse, transparency, and ethical critique, authoritarian systems often prevent open ethical reflection on technological governance. The risk is not only the loss of individual rights but the systemic erosion of collective moral agency, as technological systems reorient populations toward behavioral compliance and algorithmic governance. This raises profound ethical questions concerning human dignity, autonomy, and the preservation of existential meaning in political communities where technology becomes the primary instrument of domination. The global paradigm shift I propose thus includes both liberal and non-liberal contexts; while the mechanisms may vary, the structural logic of technological determinism operates across diverse political environments, reinforcing the urgent need for global philosophical reflection, not merely liberal reform.

4.6 "Digitizing Ethiopia" – The case for Ethiopia

The Ethiopian case offers a vivid example of how technological determinism operates not only globally but also within emerging national contexts. In June 2020, the Ethiopian government launched the "Digital Ethiopia 2025" strategy, an ambitious national digital transformation plan aiming to comprehensively integrate technology into all sectors of governance and the economy. While this initiative reflects an important step toward modernization and economic development, it also exemplifies the very concern my thesis raises: the absence of a philosophical and ethical framework guiding such transformations leaves critical questions of human agency, political inclusiveness, and cultural identity unaddressed. As Ellul warns, the drive for efficiency and optimization risks marginalizing ethical reflection, allowing the technical system to evolve according to its internal momentum rather than consciously negotiated human values. The enframing Heidegger describes is already evident here—technological systems begin to redefine not only economic activity but the entire structure of political participation, social control, and identity formation.

In the Ethiopian context, the deployment of digital infrastructures appears increasingly influenced by the interests of political and economic elites who possess privileged access to technological capital, knowledge and global networks. As these groups consolidate control over digital platforms, financial services, surveillance mechanisms and administrative data, the majority of Ethiopian citizens often experience these transformations without meaningful participation or even awareness, effectively becoming subjects of systemic technological governance. Winner's observation that technological artifacts embody political structures becomes particularly relevant: technology here not only reflects but reinforces existing inequalities, exacerbating internal tensions within a society already struggling with ethnic fragmentation, social instability, and unresolved conflicts. Rather than stabilizing the political order, unchecked technological expansion in such a fragile context may unintentionally fuel further instability, as marginalized groups perceive digital transformation as yet another mechanism of elite domination. Thus, Ethiopia's digital transition vividly illustrates how technological determinism does not eliminate political diversity but increasingly imposes a shared technocratic logic of governance that transcends formal political structures while potentially destabilizing societies lacking the ethical and participatory capacities to govern these technologies wisely.

4.7 Political Ecnomoy of Technology

The political economy of technology lies at the very center of contemporary technological determinism, not merely as an external factor but as an intrinsic force shaping the trajectory of digital systems. As new technologies emerge, they are embedded within global capitalist structures that systematically privilege those who possess technological capital; transnational corporations, financial elites, and politically dominant actors who control digital infrastructures. This dynamic creates an emergent digital class hierarchy where economic inequality is reproduced and amplified through technological means. Ellul's conception of autonomous technical progress becomes deeply intertwined with economic power, as new innovations continuously serve the interests of those who control the mechanisms of technical development. Heidegger's enframing further illuminates this condition, as vast populations are reduced to calculable data resources, their value assessed according to their instrumental role within expanding digital economies.

This emerging digital underclass experiences not only material marginalization but also existential and epistemological subjugation. As McLuhan explains, the media environment itself reshapes human consciousness long before content is engaged. Digital platforms, governed by opaque algorithms, filter information access, reinforce cognitive echo chambers and engineer affective responses that subtly condition political beliefs and behaviors, often without individuals' conscious awareness. In this way, the economically vulnerable are rendered not only politically disempowered but epistemologically dependent, inhabiting mediated realities crafted by the interests of digital elites. Winner's observation that technological artifacts carry embedded political choices becomes increasingly evident as the design of these infrastructures systematically reproduces the hierarchies of digital capitalism.

Thus, technological determinism today cannot be separated from the global logic of capital accumulation, which extends the political implications of technology far beyond questions of utility or innovation. The convergence of technological systems and global political economy risks establishing a self-reinforcing regime of digital domination, where authentic political agency is increasingly displaced by systemic structures of control. Without critical philosophical reflection and active political interventions to interrogate and democratize technological development, humanity risks surrendering not only its political autonomy but also its existential capacity for

ethical reflection and meaning-making. The defense of human dignity under conditions of accelerating technological determinism, therefore, demands a radical reconsideration of both our technological future and the global political economy that drives it.

Chapter 5: The Human Experience within Technological Determinism

Technological determinism is the idea that technology not only enables but also shapes society, politics, and the very nature of human life. In this chapter, we examine how technology influences human agency, autonomy, identity and power, drawing on the critical perspectives of the afero mentioned philosphers. As discussed above, most of them warn that technology is not a neutral tool but an enframing force that orders reality, inscribes political power and can alter human values. We begin by exploring how deterministic forces affect individual freedom and selfhood, then analyze power dynamics and inequalities, illustrate these issues with real-world case studies and finally consider debates about humanity's future in a tech-saturated world. Throughout, we embed the philosophers' insights and empirical examples (e.g. data surveillance, AI in justice) to critically assess whether technology drives us toward emancipation or new forms of domination.

5.1 Impact on Human Agency, Autonomy and Identity

Technology's pervasive reach has profound implications for individual agency and identity. Heidegger (1977) argued that modern technology "enframes" the world – it reveals everything (including people) only as resources or "standing-reserve" for human use. In other words, we now view nature and increasingly human beings too, only technologically – as raw material for technical operations. This enframing reduces human beings to objects in systems, eroding our sense of authentic existence. Similarly, Jacques Ellul insists that the ideas, judgments, beliefs and myths of the man of today have already been essentially modified by his technical context, so that modern people's "state of mind is completely dominated by technical values" (Ellul, 1964). Ellul suggests that once we internalize technology's priorities (efficiency, progress, utility), genuine autonomy fades: "the political world is today defined through its relation to the technological society," not the other way around.

From McLuhan's media-theory perspective, technology (especially communication media) actively shapes our social self and identity. He observes that the medium is the message: the form of a technology (e.g. TV, smartphone) restructures human attention and relationships irrespective of its content. In his words, "We shape our tools, and they in turn shape us" (McLuhan, 1964). Social media and smartphones thus become extensions of the self, molding how we present our

identities and relate to others. The global reach of the Internet even creates a “global village” in McLuhan’s sense, where identities merge and local differences blur. While connectivity may empower some (e.g. giving marginalized voices a platform), it can also impose new social norms and surveillance (“likes”, algorithms) that limit spontaneity or genuineness. Modern individuals often find themselves curated by algorithms – a form of external determination of taste and behavior – and this raises questions about true autonomy in forming one’s identity.

Langdon Winner (1980) brings a political-technology view to personal autonomy. He suggested that technologies often carry “political” qualities: built-in biases and control structures that affect people unevenly. For example, complex “autonomous” systems (from traffic control to AI assistants) can outstrip any one person’s understanding or control, making individuals dependent on tech infrastructures. Winner cautions that it is a fallacy to assume humans fully use or control technology (“the tool-use ethic” is obsolete). As systems become increasingly sophisticated and networked, individual actors may have less and less real choice in how those systems operate in their lives. In sum, these philosophers suggest that under technological determinism human agency can become constrained: our choices, values, and sense of self are mediated by systems beyond our full control.

In today's world, this has material forms. To provide just one example, the prevalence of smartphones has been shown to leach mental attention and encourage superficial focus. A person can spend hours scanning social feeds in the isolated system of his/her machine, gradually re-forming habits of mind. Algorithmic personalization also restricts exposure to new ideas, indirectly restricting the bounds of thought and agency.

When technology and architecture decide even the language used, autonomy becomes an illusion. Such philosophers urge us to question the design of each device and system: do they preserve or undermine human freedom and identity?

5.2 Technology, Power Dynamics, and Social Inequalities: A Philosophical Inquiry

Technology is a very significant factor in power relations and can both critique and reinforce social inequalities. Winner (1980) states that "not only human action, but also the materialized action of

things is political." In his view (1980), “Technology is politically significant in its own right… the machines, structures, and systems of modern material culture… embody specific forms of power and authority.". What is being suggested here is that the design and the deployment of the technology distribute the power: infrastructural choices have embedded different social classes, writing class/racial prejudices into built form. Winner suggests large technical systems (transportation, energy, communications) are "decentralized bastions of technological power" over which few if any, including governments, exercise control. This creates an asymmetry: those that create or hold technologies (often corporations or states) have unequal power.

Ellul (1964) also identifies technique as a new social order that subordinates politics to efficiency. For him, modern political and cultural spaces are "situated" within the technological system – not just affected by it, but positioned within it. In practice, this can work to the advantage of current actors who can harness bleeding-edge tools (big data, automation) to consolidate their position. For example, governments and commercial organizations use online tools and AI to spy on citizens or consumers, while more vulnerable groups (minorities, the poor) are more likely to be exposed to threats like discriminatory policing or intrusion into privacy. Indeed, research on facial recognition technology today illustrates that this surveillance is already biased at the algorithmic level: Black and minority groups are disproportionately likely to be selected or misidentified, perpetuating existing inequalities.

McLuhan (1964) also says that mass media environments tend to have homogenizing effects. McLuhan described that media technologies "guarantee culture diffusion," but in so doing also standardize life and thought, especially if managed by economic elites. His concept of the global village stresses that media condense distances and bring the world together but understands that that connectedness has a non-neutrality aspect: Social Medi brought people from other cultures… and made them feel members of a single community. Social Media has not only changed the world into a small village but also affected each part of human social life. That is, new media in theory give a voice to all, but in practice give a megaphone to some voices and tendencies (the "mass mind") and mute others, tending to entrench existing ideologies overall. Thus, McLuhan's (1964) technological determinism presupposes that media forms will rearrange power relations in unforeseen ways: old hierarchies will overturn (national borders dissolve), but new ones (platform monopolies, influencer cliques) emerge.

Taken together, these perspectives warn that inequalities of power tend to ride on technological currents. Wealthy states or corporations can set rules for emerging platforms, leaving individuals and small groups with little say. The principle of democracy – that social decisions reflect collective will – is challenged by opaque algorithms and uncontestable infrastructures. Ellul (1964) feared that "psycho-sociological techniques…render [humans] happily subordinate to [the technical milieu]". Winner (1980) would insist on democratic oversight of technology's development to prevent such subordination.

5.3 Case Studies in Technological Intervention in Human Experiences

To help us explore further, let's try to examine real-world examples where technology has intervened in social and political life, with profound effects on people. These cases illustrate the interplay between technological determinism, power, and human agency.

• Cambridge Analytica and Political Persuasion - 2016 US/UK Elections (Berghel, 2018):

In one of the largest data scandals, a British firm linked to the Trump and Brexit campaigns harvested ~50 million Facebook profiles of voters and used them to profile personalities and micro-target political ads. As whistleblower Wylie (Berghel, 2018) described, they exploited Facebook to harvest millions of people's profiles…and built models…to target their inner interest. The technology (social media algorithms + big data analytics) thus became a tool for manipulating electoral choice. Voters' autonomy was compromised by unseen technological forces exploiting psychological vulnerabilities. This case demonstrates Winner's insight that the "machines…of modern material culture embody specific forms of power and authority": digital platforms empowered political actors to influence at scale, beyond traditional campaigning methods. It also confirms McLuhan's point that the medium (social media) dramatically reshapes human behavior, here by extending propaganda's reach into private online spaces.

China's Social Credit System:

China's government has rolled out a nationwide surveillance network often called the Social Credit System (SCS), which assigns behavioral scores to citizens and companies based on data (including

online activity, purchases, social behavior). According to Creemers (2018), the aim is to "monitor, assess, and shape the behavior of all citizens". Under this system, obedience to government rules (or even one's social associations) can affect one's ability to travel, secure loans, or access services. Here technology and data analytics literally shape citizens' life experiences. This exemplifies Ellul's warning that technology can become a coercive environment: social rewards and punishments are automated by the technical system, reducing individual choice. Many critics argue the SCS erodes individual autonomy and privacy in favor of a highly managed society. Winner's perspective would highlight that such a system inscribes political authority into algorithmic form: compliance is enforced by the apparatus, not by open democratic deliberation. This case also raises identity issues: people may adapt their self-presentation (even offline behavior) to game the tech scores, potentially altering cultural norms.

Surveillance and Facial Recognition:

In cities around the world, governments and police have deployed facial-recognition cameras and AI-driven CCTV to monitor public spaces. While claimed to increase safety, some studies show these technologies often misidentify women and people of color at much higher rates. Critics (Wang & et'al, 2024) note that "facial recognition…enables more precise discrimination, especially as law enforcement agencies continue to make…predictions that disproportionately impact marginalized populations". In other words, a technology intended as neutral actually exacerbates social bias, turning communities of color into a "standing-reserve" of data to be analyzed. This fits Winner's thesis: the design and deployment of tech reflect existing power structures and biases, so marginalized groups bear the brunt of errors and intrusions. It also resonates with McLuhan's idea that media can reshape social life – here the media are surveillance networks that redefine public space as always observed, altering how people behave and see themselves.

Algorithmic Decision-Making in Justice (COMPAS):

The COMPAS risk assessment tool is used in U.S. courts to predict defendants' likelihood of reoffending. A ProPublica investigation found that COMPAS was significantly biased: it incorrectly flagged Black defendants as higher risk far more often than white defendants. Such algorithmic interventions in critical human experiences (judgments of one's liberty) highlight a

new inequality: lack of transparency. The software's logic is proprietary, so defendants cannot challenge or even understand its criteria. This case exemplifies Winner's claim that technological systems "solidify…social injustice and control" unless explicitly challenged. It shows that without careful oversight, tech meant to improve objectivity can instead mask prejudice under the guise of neutrality. (Washington, 2018)

Social Media and the Filter Bubble

Platforms like Twitter and Facebook use algorithms to show users content they are likely to engage with. Research (Bozdag & Hoven, 2015) suggests this can create echo chambers: people are less exposed to opposing views and more divided into ideological landscape. Following McLuhan's logic: while a modern phenomenon, each new medium reshapes cognitive habits. Here, the medium's message is a fragmented informational reality, potentially weakening public discourse and polarized politics. This can affect identity too: online communities can reinforce narrow aspects of identity (e.g. nationalist or partisan identities) while marginalizing others, sometimes radicalizing individuals (e.g. far-right or conspiracy groups online). According to Ellul, when we are situated entirely within a technological context, even our social selves are molded by its internal logic. Filter bubbles show how media dynamics can segment society, raising concerns about collective understanding of truth.

These concrete examples reinforce that technology is a medium of power. As Winner (2000) puts it, "both the intentional and unintentional doings of things are political," and unintentional consequences can be especially significant. In other words, a technology may seem politically neutral at design time, but its widespread use can produce broad social effects that entrench control or inequality.

5.4 Authentic Human and Political Agency

While the deterministic forces of technology reshape the political sphere with formidable momentum, the thesis defends the enduring possibility of authentic human and political agency. This agency arises first through critical consciousness, echoing Heidegger's call to "question technology" by unveiling how technological systems frame perception, value, and power.

Authentic agency requires resisting the passive acceptance of technological progress as inherently virtuous, and instead engaging in reflective scrutiny of its ontological and ethical implications. Ellul deepens this call by emphasizing the necessity of ethical deliberation, where societies deliberately construct normative frameworks that transcend efficiency and instead prioritize the human good. This act of ethical orientation requires slowing the unchecked momentum of technological acceleration, allowing space for moral and cultural dialogue. Winner extends this imperative to the sphere of political governance, insisting that citizens themselves participate in shaping technological design and implementation. Democratic agency is thus reclaimed through participatory processes that embed human values into technological architectures rather than surrendering control to the silent logic of technical systems. McLuhan complements this vision by advocating media literacy and reflexivity as essential tools, empowering individuals to decode and resist the unconscious conditioning of their political perceptions by media environments.

To actualize such agency amidst the pervasive influence of technology demands a comprehensive societal reorientation. Education systems must be reformed to incorporate not only technical skills but also robust philosophical and ethical reflection, fostering a generation capable of critically navigating the complexities of technological systems. Public spheres must be revitalized through spaces of deliberative discourse, where citizens can confront and influence the governance of technology in transparent, inclusive forums. Institutions require structural mechanisms capable of decelerating and regulating technological adoption, ensuring that innovation serves democratic values rather than becoming an end in itself. Finally, as emphasized in the thesis's conclusion, youth mentorship and empowerment are crucial: programs that guide young people to rediscover meaning, cultivate responsibility, and develop creative potential amidst technological complexity can offer a powerful antidote to the nihilism fostered by uncritical technological expansion. Authentic agency, then, does not reject technology but insists on governing it through the primacy of reflective human judgment.

"Authentic Identity"

In my view, authentic identity is the individual's capacity for self-understanding rooted in existential reflection, cultural belonging, and ethical engagement with the world. It is the capacity to live as a conscious being, not merely reacting to external inputs but actively interpreting one's

existence within a meaningful horizon. As Heidegger warns through his concept of enframing, modern technological systems increasingly threaten this condition by reducing identity to data—calculable behavioral profiles shaped by algorithms designed to optimize consumption, predict behavior, and manage populations. The individual's subjectivity risks being displaced by externally generated digital personas, assembled through behavioral data patterns that flatten the complexity of human existence into mechanized categories. Thus, authentic identity, in my argument, requires resisting this reduction by preserving spaces for ethical reflection and existential self-determination beyond algorithmic framing.

Even when technological systems claim to operate on objective, trustworthy data within frameworks of so-called technological sovereignty, biases persist at multiple levels. Data itself is never value-neutral; while the raw facts may appear objective, their collection, categorization, and interpretation are shaped by human-designed algorithms that inevitably encode cultural assumptions, normative judgments, and political priorities. As McLuhan insightfully observes, the very media that mediate information condition perception before any content is even consciously processed. Thus, even highly sophisticated data-driven systems often reinforce power asymmetries by privileging dominant norms and marginalizing alternative experiences. Those who control technological infrastructures—whether governments, corporations, or global elites—retain disproportionate authority over what is measured, how knowledge is produced, and whose interests are served.

Crucially, these technological biases do not displace pre-existing non-technological biases but often amplify and institutionalize them within digital architectures. Structural inequalities related to race, gender, class, and historical exclusion become mathematically codified within algorithms that reproduce past injustices under the appearance of technical neutrality. Predictive policing models, biased credit scoring systems, and AI-driven hiring platforms illustrate how long-standing systemic discriminations are perpetuated and even legitimized through algorithmic governance. As Winner emphasizes, technological artifacts carry embedded political structures; they are not neutral tools but political agents inscribed with power relations. Thus, while technology presents itself as an instrument of progress, it can also become a sophisticated amplifier of domination, deepening social asymmetries under the guise of data-driven objectivity unless rigorously questioned through continuous ethical, political, and philosophical reflection.

Here, I argue that while technology exerts profound influence over identity formation, it cannot fully or deterministically define human identity in isolation from deeply rooted cultural, ethnic, religious, or gender-based frameworks. Foundational identity categories such as ethnicity and religion are anchored in historical memory, shared narratives, and intergenerational practices that shape existential meaning in ways not easily erased by technological mediation. Yet, as McLuhan emphasizes, communication technologies fundamentally alter the modes of perception and interaction through which these identities are expressed, contested, and reinterpreted. The digital sphere offers new performative arenas (such as social media platforms) where identities are curated, fragmented, and exposed to algorithmic amplification, introducing layers of fluidity and manipulation that were historically absent from identity formation processes.

The biases embedded in technological systems differ from traditional social biases by their systemic, automated, and opaque character. Whereas historical forms of discrimination (rooted in ethnic exclusion, gender inequality, or religious marginalization) often operated through explicit social structures and interpersonal interactions, technological biases are increasingly codified into algorithmic systems that perpetuate exclusion under the guise of neutral technical operations. Predictive algorithms for credit, employment, law enforcement, and digital visibility incorporate historical inequalities into calculative models that reproduce systemic asymmetries on a massive, depersonalized scale. As Winner argues, these artifacts carry embedded political choices, silently organizing power relations into the very design of technological infrastructures. Ellul's warning about the autonomy of technical progress underscores how these biases become self-perpetuating logics once operationalized, often escaping democratic scrutiny.

Thus, I maintain that identity under conditions of technological determinism is not wholly redefined but increasingly mediated, performed, and governed within technological frameworks that alter both its visibility and political significance. Authentic identity, in my analysis, requires a reflective capacity to resist algorithmic reduction and remain rooted in cultural, ethical, and existential dimensions that transcend systematized data profiles. Technology does not erase foundational identities but modulates the arenas within which they are negotiated, often amplifying historical injustices while simultaneously introducing new forms of identity commodification and political fragmentation. The challenge, therefore, lies in developing philosophical, ethical, and political frameworks capable of safeguarding human dignity against the flattening tendencies of

technological enframing, preserving the complexity of human identity within an increasingly mediated world.

5.5 The Future of Humanity in a Technology-Dominated World: Debates and Arguments

In the future, philosophers debate basically different visions of a current and forthcoming technology-shaping future. Will we be capable individuals or only parts of a technological system? The debate tends to follow on traditional lines of a traditional techno-optimist and techno-pessimist. Heidegger, Ellul, McLuhan, and Winner each anticipated this in different ways.

At one end, techno-optimists and transhumanists foresee futures where technology augments human capabilities and provides answers to fundamental questions. Transhumanists see futures from mass life-extension and AI assistants to collective intelligence through brain interfaces. Transhumanism, for instance, affirms transformation of the human condition through applied reason…by creating technologies…and sharing them widely, even defeating death. Futurists and technology visionaries think that biotech and AI can eliminate scarcity, illness, and perhaps usher in a worldwide enlightenment. In this picture, autonomy is applied: human beings control their world, bodies, and minds in ways previously unimaginable. McLuhan's global village could very well be an actual, enlightened human community. Winner's values of democracy would demand these transformations be guided by common values, not secretly do tech oligarchies.

Opponents, on the other hand, anticipates for a terrifying result in case technological determinism remains unchecked. In the Ellulian spirit, Frank Fukuyama (Fukuyama, 2018) holds that unchecked biotechnology and electronic control can "violate basic human rights" and blur "the line between natural and artificial," potentially destroying aspects of humankind. Heidegger worried that when technology is our only mode of revealing, we lose sight of greater truths or meanings – a situation he called nihilism (meaninglessness). In the future of AI and algorithms, the fear is that machines will ultimately become responsible for decision-making (from voting to warfare), and we'll be helpless. Ellul’s pessimism resonates here: he saw technique as an unstoppable logic that would “enslave” human ends, leaving individuals submissive to system.

Present controversies highlight these poles. Ethical concerns over artificial intelligence, for example, range from utopian (AI helpers to justice, effectiveness, even global harmony) to apocalyptic (the "singularity" or AI alignment disasters). UNESCO's present AI ethics recommendations reflect this ambiguity: they acknowledge AI as a force for making more equitable systems (e.g. more just court decisions) but caution against new manipulation or discrimination. Public discussion of autonomy and control in technology is polarizing: do we embrace, say, self-driving cars making safety decisions for us, or insist on human intervention? Do we embrace, or ban, electronic enhancement of human beings (e.g., neural implants)? The featured philosophers would likely stress caution: ask always whose values the technology represents. Most importantly, Winner (2000) insists on active, democratic molding of these futures.

To him, technological design should be a public matter of deliberation, so that innovation does not consolidate single-sided interests, social injustice and domination over others. This means that debate regarding human enhancement and AI is not technically natured but political in essence. Heidegger would also add that debates should involve taking into account being – the type of world and man we truly want. Ellul would have reminded us that unless there are new ethical principles to govern them, technique will be master over itself. McLuhan would likely remind us to observe closely as new mediums emerge (AI, VR, social networks) and analyze their unseen effects on human psychology and society.

In sum, the future of humanity in a tech-dominated world remains contested:

• Tech-Utopian View: Technology is fate for the good. Human potential is expanded through enhancements; political differences can be settled by open electronic media; inequality could decrease if technology is provided and regulated equally. (Optimists also look to promises of global access to information, disease cures, and global warming solutions.)

• Tech-Dystopian View: Technology leads us towards homogenization and domination. Human freedom is undermined in overly complex systems; scrutiny increases; inequalities are exacerbated as the marginalized are denied individual information or work to machines. (Pessimists fear scenarios like ongoing surveillance regimes, AI discrimination, or loss of meaning in algorithmic worlds.)

• Technocratic View: Others advocate a middle path: pro-actively steer technology (Winner's (2000) democratic technology assessment) to minimize harms. This would be by citizen panels, rigorous ethics, and legal regulation to ensure technology serves the public interest.

Debates about what it means to be human in the 21st century are part of this discussion. Will future humans be “Homo sapiens 2.0” (as transhumanists hope) or merely entangled in the machines we’ve built (as Heidegger feared)? As Marshall McLuhan reminded us, each technological revolution is also a change in human consciousness and social structure. The conclusions of Heidegger, Ellul, McLuhan, and Winner all caution that it cannot be left to engineers and the marketplace to decide how we should live well in a technological world. It needs to be accompanied by critical consideration of human values, political authority and the kind of society we wish to create.

In short, technological determinism towers above politics and human existence. By examining the effects of technological determinism on agency, power and identity and by examining particular examples, we can see that technology is never neutral: it bears the imprint of its creators and amplifies social forces. Heidegger's concept of enframing alerts us to the risk of seeing everything (even ourselves) as quantifiable data. Ellul maintains that our objectives and minds become attuned to technical targets. McLuhan depicts how we change our being by changing our media. Winner reminds us we must actively oppose the politics of every machine. Together, their insights underscore a crucial thesis: if we are to preserve human dignity and democracy in the presence of a technological age, we must reflect on technology's role, be involved in its design and re-establish values over efficiency. On this alone perhaps we might even hope to control the direction of technology rather than being controlled by it.

5.6 Global Paradigm Shifts

The thesis does not suggest that a singular, homogenous global political paradigm has fully emerged that overrides all political diversity. Instead, it argues that technological determinism is producing convergent structural dynamics across diverse political systems — dynamics which manifest a shared logic of governance that transcends specific cultural and institutional variations.

In this sense, what is emerging is not a uniform global political model, but rather a shared technopolitical paradigm driven by the self-reinforcing autonomy of technology as analyzed by Ellul, Heidegger, McLuhan, and Winner.

Despite the diversity of political traditions, ideologies, and governance models across the world, we are witnessing a growing convergence around several technological imperatives that transcend these differences and operate across political regimes. One of the most striking areas of convergence is the rise of algorithmic governance and data-driven decision-making. In both liberal democracies and authoritarian states, political authorities increasingly rely on complex computational systems to guide public policy, law enforcement, and resource allocation. For example, predictive policing technologies such as CompStat and PredPol in the United States apply algorithmic analysis to crime data to inform policing strategies, while China's expansive social credit system uses similar algorithmic mechanisms to evaluate citizens' behavior across multiple domains. Although these technologies are applied for different ideological purposes, they share the same technical logic of reducing governance to processes of calculation, prediction, and optimization.

This convergence is also evident in the global proliferation of surveillance infrastructures, which have expanded across political systems irrespective of regime type. In Western democracies, programs engage in mass data collection under the justification of national security, while in China, advanced AI-driven facial recognition systems enable extensive monitoring of public spaces. In both contexts, surveillance technologies establish a new modality of political control founded on the continuous extraction and analysis of personal data, creating an environment where governance increasingly depends on real-time information management.

Furthermore, digital media platforms have radically transformed political discourse across cultures in ways that reflect McLuhan's insight that "the medium is the message." Platforms like Twitter have become central to populist political movements in the United States, while messaging services such as WhatsApp play decisive roles in shaping electoral outcomes in countries like Brazil. Despite the diversity of the political content disseminated, the structural features of these platforms: virality, brevity, emotional amplification, and algorithmically curated visibility—reshape public debate in strikingly similar ways across disparate societies. Thus, while the outward

expressions of politics remain heterogeneous, a deeper structural convergence is emerging, driven by the shared global logic of technological mediation.

Thus, I propose a globalizing technological structure of political operation: not erasing diversity of content, but imposing a shared technical form of governance. This structure is largely indifferent to cultural particularities, operating beneath ideological variations, and produces a political convergence at the level of form rather than of values.

Contemporary technologies are actively reshaping political dilemmas in concrete and complex ways. One pressing issue is the growing crisis of political participation, where many citizens feel increasingly disenchanted with traditional democratic processes. In response, some states have introduced e-participation platforms aimed at fostering more direct forms of civic engagement. Estonia's e-governance system, for example, offers a highly efficient digital infrastructure that allows citizens to engage directly with government services and participate in decision-making. Yet, as Heidegger's analysis of enframing warns, such technological solutions risk reducing political participation to mere data inputs—streamlining processes while potentially eroding the depth and substance of democratic deliberation. Political participation, thus, becomes quantitatively efficient but qualitatively shallow, shifting from rich, reflective discourse to algorithmically managed interaction.

Social media technologies have similarly exacerbated political polarization and fragmentation, a dynamic starkly observed during the 2016 U.S. presidential election and the Brexit referendum. Through algorithmically curated content, these platforms foster echo chambers that reinforce existing biases and emotional resonance, privileging spectacle over reflective debate. McLuhan's insight that "the medium is the message" illuminates this phenomenon: it is not simply the content that polarizes, but the structure of the medium itself, which incentivizes virality, brevity, and emotional provocation at the expense of nuanced discourse.

In authoritarian contexts, technology has enabled new forms of highly efficient governance that extend control and behavioral management. In China, AI-powered systems combine mass surveillance, behavioral scoring, and predictive analytics into a sophisticated apparatus of political control. As Ellul predicts, the autonomy of technical development allows such technologies to rapidly proliferate and deepen the state's capacity to shape citizen behavior while minimizing dissent. Here, technology does not merely serve policy—it becomes policy.

At a more existential level, digital technologies have profoundly disrupted the formation of identity, particularly among younger generations. Platforms like Instagram, TikTok, and others promote performative digital identities, where individuals curate idealized personas for public consumption. This continuous self-performance, driven by the logic of algorithmic visibility, fuels an underlying identity crisis and existential emptiness. I argue, this condition parallels Heidegger's diagnosis of nihilism and the loss of authentic being within modern technological enframing, where individuals become detached from deeper sources of meaning, purpose, and grounded identity.

This perspective does not deny cultural and institutional diversity but rather proposes that technological determinism introduces structural convergence beneath this diversity. The content of politics may vary widely, but the technological forms increasingly condition how political processes operate everywhere. The global political paradigm shift is thus one of deep structural convergence under technological systems: a convergence that paradoxically allows for surface-level political diversity while aligning the fundamental architecture of governance along shared technological lines.

Chapter 6: Conclusion - Rethinking the Human Place in a Technologically Determined World

6.1 The author's stand on the discussion

In this thesis, I adopt the position that technology, while still the creation of human agents, is increasingly moving toward a condition in which it may supersede human agency and reorient the future course of human existence according to its own internal logic. I do not argue that technology has fully become autonomous in the strict sense, but rather that it is on the verge of assuming autonomous momentum, increasingly constraining human choice and reshaping social structures in ways that risk marginalizing human agency if left unexamined. Technology originates as a human product, born of deliberate invention and design; yet, as Ellul argues, once a new technology is introduced, it initiates a chain reaction of innovation, dependency, and systemic integration that develops largely outside the original sphere of human intention. Heidegger's concept of enframing furthers this insight by revealing that technology not only produces material tools but transforms human perception, reducing both nature and humanity itself into calculable resources to be managed within an ever-expanding technical system.

Thus, I do not deny that humans create technology, but I emphasize the dangerous trajectory by which technology increasingly reconfigures the conditions of human action and narrows the space for authentic political and ethical agency. McLuhan's media theory and Winner's political analysis of artifacts demonstrate how technologies embed structural values into their design, which then shape and limit the range of political possibilities available to societies. My position is neither one of complete technological determinism nor naive constructivism. Rather, I argue for a conditional or evolving determinism, wherein technology progressively assumes a governing role over human systems unless deliberate philosophical, ethical, and political interventions are made. The looming risk is not simply that technology advances, but that it advances uncritically, displacing human deliberation with algorithmic efficiency and normative structures that serve systemic technical expansion rather than human flourishing. Without critical reflection and intentional resistance, we stand at the threshold of a world in which technology might govern for its own logic, rather than for human values. My thesis therefore calls for an urgent philosophical awakening that seeks not to reject technology, but to reclaim conscious, value-driven agency within its accelerating domain.

6.2 The Technological Trajectory: A Crisis of Control

The most dire consequence of this thesis is perhaps the apparent trajectory along which technology moves outside of human agency. It is no longer a theoretical proposal, but one that has been post-experienced. Heidegger's "Gestell" (enframing) thesis warns that technology imposes a blue print on human thinking, calling us to think about the world: and ourselves: to be made optimal (Heidegger, 1977). Where technology is the paradigm for comprehending all that is, it displaces broader, spiritual, or existential forms of thinking. The universe becomes a standing-reserve, and human existence risks being drawn into the calculation.

We may follow this path in the global networks of digital surveillance, algorithmic rule, and trading in personal information. These are not mere instruments employed by states or corporations; they are new epistemic ecologies restructuring our vision and practice. As Ellul (1964) warned us in The Technological Society, technique becomes autonomous: it unfolds according to its own internal processes and optimization, independent of ethical and democratic responsibility.

The product of this freedom is ominous: human beings more and more are not the masters of technology, but its slave. This turnabout of its head of mastery is a watershed moment in the history of human beings: a juncture requiring shrewd philosophical and political reaction.

6.3 Humanity in the Grip of Technology: Inversion of Power

Langdon Winner's (1986) insight that there are politics of technologies is especially apt here. If infrastructures entail technologies, they organize social orders, distribute power, and even demand obedience. We witness it in the concentration of digital platforms, where a few corporations yieldunprecedented power over public debate, consumer existence, and election campaigns.

In addition, McLuhan's (1964) "the medium is the message" dictum has never been more relevant. Social media, for instance, doesn't merely transmit messages: it constructs novel social worlds. The form of the medium warps the shape of the communication itself, affecting how individuals are positioned toward truth, authority, and one another.

These dynamics involve humankind being increasingly comprised of technological systems instead of merely controlling them. This transformation is not only political in nature but also philosophical crisis. With machinic networks, codes, and protocols spilling over into agency, the very definition of human autonomy becomes questionable.

6.4 Ethical and Existential Consequences: The Human Condition Revisited

The atrophy of human autonomy and agency has moral and existential implications. Heidegger warns us that unless we ask questions about technology, we are beneath its yoke. That submission is not passive-it changes us. We become beings whose telos is not truth or justice or beauty but performance, efficiency, and optimization.

Ellul contends that technical efficiency is the most obvious of the values in contemporary society and trumps the others. Choices are going to be determined more and more not by ethical decision but by whether or not they are productive or cost-saving. This utilitarian method dehumanizes human life and negates the very possibility of ethical action.

Identity itself is fragmented further. Human beings are not considered a unit but as points of data, consumer profiles, or behavior metrics under the culture of surveillance and algorithms. Quantification of the self results in alienation and meaninglessness.

6.5 Global Inequalities and Technological Imperialism

Technological determinism is not universal in its application to the rest of the world. It reinforces prevailing inequalities and creates new means of domination. Langdon Winner's work shows us how technology design and infrastructure can exclude, marginalize, and institutionlize systemic injustice.

For example, technological innovation in the South is felt as dependency, not empowerment. The introduction of digital platforms, surveillance networks, and AI technologies uncomplicated by localization to context overrules local conditions and re-presents colonial relations in the guise of

development. Such technological imperialism undermines political autonomy, cultural identity, and knowledge systems based locally.

McLuhan would point out that this global electronic village also has the potential to homogenize difference, in the sense that contact is amplified even as it becomes mediated through hegemonic spaces that reflect and amplify dominant ideology. Technology in this way becomes a weapon of soft power that quietly coerces rather than hard-handedly orders.

6.6 Toward a Philosophical Reorientation: Reclaiming Agency

Despite the gravity of these trends, this chapter is urging a philosophical recasting of our relationship to technology. This recasting will have to start in the mind—a radical challenging of the nature of technology and our position within it.

Heidegger invites us to remain within the "saving power" of technology through rejecting enframing and reclaiming a sense of poiesis—the bringing-forth of being which enables openness instead of domination. This requires cultivating modes of art, spirituality, and community which refuse technological reduction.

Ellul argues for the building up of counter-forces to society—ethical systems, democratic structures, and educational systems—that are capable of braking the independent momentum of technique. It also calls for developing critical awareness that is both of the limits and the promises of technology.

McLuhan underscores the need for media literacy-that is, knowledge as to how media environments construct perception. Only through that acknowledgment, one can gain autonomy by realizing the messages contained in the media.

Winner proposes that democratic deliberation be infused into technological design and deployment. If there is politics in technologies, then their design has to be open to political processes. This includes public involvement, ethical assessment, and control mechanisms that rest on common values.

6.7 Recommendations: Philosophical Guidance for Reclaiming Technological Sovereignty

Referring to Heidegger, Ellul, McLuhan, and Winner, one can see that humanity needs a deliberate and complete reorientation in order to regain human sovereignty and achieve a future where technology is servile, not sovereign, of human life. These proposals, which flow from profound philosophical reflection, are also practical and theoretical, and provide a model for individuals, groups, and institutions worldwide to reimagine their relationship with technology.

6.6.1 Reawakening to the Nature of Technology (Heidegger)

Martin Heidegger warned that human life might be enframed by technology — perceiving the world only as utility and efficiency. To counter this, Heidegger advocates a meditative mode of thinking, which is opposed to calculative thinking. Meditative thinking provides space for reflective consideration of the nature of technology, differentiated from unreflective acceptance of its operations.

Recommendation:

- Make philosophy and ethics an integral part of the STEM course curriculum so critical understanding can be gained about what technology is and what it should become.

- Establish places for reflection such as cafes with philosophical debates, cultural forums, or digital Sabbath, prompting citizens to leave the technocratic matrix and connect with reality.

- Encourage artistic and poetic reactions to technological advancements, since art and poetry can make possible avenues for other modes of truth disclosure than utilitarian logic.

6.6.2 Constructing Ethical Technological Infrastructures (Jacques Ellul)

Jacques Ellul believed that technology systems are self-sustaining and independent. Techniques change by actualizing their own logics, not concerned with human values, as per him. That is why

Ellul advocates the radical moral and religious position wherein technologies are tried and established through trials of humane and religious values.

Recommendation:

- There should be independent national and international ethical boards to assess social consequences of new technology prior to its application

- Open technology production and use. Require social impact assessments like environmental audits.

- Make it easier to decide on good technologies-good in context equipment and buildings that are green and people-scale-especially in the Third World.

6.6.3 Reconfiguring Media Consciousness (Marshall McLuhan)

Marshall McLuhan's key observation — "the medium is the message" — tells us more powerfully about the ways that media forms constitute human consciousness and social reality than their own claims of significance. McLuhan's media literacy is more valuable in a time of algorithmic assistance and echo chambers of the virtual world.

Recommendation:

- Put in place a curriculum of comprehensive media literacy training at all levels of education in order to engage technologists, not consumptive recipients.

- Redesign online places in the spirit of discussion, diversity, and richness instead of clickbait and fragmentation.

- Battle for public media and independent public sites to facilitate longer-form, investigative, and local-style reporting in favor of algorithmic hype.

6.6.4 Democratizing Technological Decision-Making (Langdon Winner)

Langdon Winner thinks technologies are political in nature — they encompass and convey types of power. Hence, design and development of technology cannot be solely the domain of engineers or corporations.

Recommendation:

- Institutionalize participatory technology assessment procedures wherein citizens participate in evaluating and shaping the development of technologies that affect their lives.

- Require tech firms to have ethicists, sociologists, philosophers, and marginalized people sit on their boards of governors.

- Encourage open-source technology and people's innovation schemes that enable local communities to create instruments according to their own needs and values.

6.6.5 Encouraging Technological Humility

In all four philosophers, then, is the recurring appeal to humility — a recognition of the limitations of human ability and knowledge, and of the truth that all which can be done, does not need to be done. Technology born of the desire for mastery of nature and society must be restrained by the expectation of unforeseen consequences and moral responsibility.

Recommendation:

- Create research and development cultures that reward long-term thinking, ethical anticipation, and humility in preference to short-term gain and technophilia.

- Promote international agreements and philosophical declarations that articulate principles of technological humility, including the precautionary principle of environmental law.

• Provide opportunities for interfaith and interphilosophical dialogue on technology, since traditions within diverse world views can provide rich lessons on boundaries, responsibility, and stewardship.

6.6 Redesigning the Good Life in the Technological Age

Finally, the challenge isn't so much the regulation of technology as it is learning how to redescribe human flourishing in an all-pervasive technological culture. What does it look like to live a good, networked, and ethical life when every aspect of life — from politics to intimacy — is mediated by machines?

Recommendation:

• Establish pedagogical spaces that give higher value to humanistic studies — philosophy, history, arts, theology — in an attempt to deepen technical education and instill a consciousness of higher purpose.

• Establish cultural incentives and policy that favor slow living, local citizenship, and community resilience as countermeasures to the accelerationist thinking of current technology.

• Establish transdisciplinary research projects that explore concepts of good life in the post-technocratic world draw on philosophy, anthropology, ecology, and indigenous epistemic systems.

These are not pleas to slow the pace of technological progress but to change its direction toward a path deliberately guided by human values, democratic principles, and moral thought. Each is a call to restore agency in a world increasingly automated by the day — one that will need courage, wisdom, and the common will to think anew.

6.8 Conclusion: A Call to Responsibility

The trajectory of technological advance holds human society both unprecedented opportunities and profound existential risks. As the previous chapters have shown — from the philosophical underpinnings of technological determinism to its political correlates and impact on the human condition — we stand in the midst of a world paradigm shift. At its core, the transformation threatens not our tools per se, but the fundamental character of how we exist, govern, communicate and perceive ourselves.

6.8.1 A Personal Reflection

Technological determinism is no longer a speculative theory; it is a lived reality. As someone who has been pondering with this question, I am increasingly concerned by a simple but fundamental question: Are we in charge of technology, or is technology in charge of us?

Mostly the current path indicates the latter.

We are living through an age when surveillance capitalism (Zuboff, 2019), predictive policing and algorithmic government define broad coverage of public and private life. Heidegger warned us that in such a time, human beings are threatened with being nothing more than a resource — standing reserve — to be exploited at the will of technology. Ellul foresaw an age when technique gains an independent existence, outside of domination by ethical or political impulses. McLuhan underscored the way our media environments reorganize our senses, making a world where content is derivative of the form. And Winner illustrated that our technological infrastructures are always political: they distribute power, constitute norms and shape possibility. If we don't take this seriously, if we allow the power of unchecked innovation to drive us into the future without philosophical reflection: we risk finding ourselves in a future in which the human person no longer calculates all things, but is manufactured as a product of systems that it is no longer capable of understanding or controlling.

6.8.2 Humanity in the Hand of Technology

Let us speak plainly: technology is not any longer in the hand of man; man is more and more in the hand of technology. This reversal is not only figurative. It is realized in our daily lives: in algorithms that define our wants, anticipatory systems that close off choices, and infrastructures that define the limits of democratic participation.

Retaking some sovereignty in such a condition means more than policy reform or technological innovation. It means changing the way we think, re-engineering our values and re-committing to philosophy. As McLuhan would say, it is not enough to change the message: we need to challenge the medium. As Ellul would argue, we need to challenge the values of the technique. As Heidegger would have us demand, we need to live in proper alignment in the world, not merely work well in it. And as Winner recommends, we need to democratize design and management of our technical systems.

6.8.3 Reclaiming the Future: Final Reflections

The recommendations aforementioned in this chapter are not end results but a beginning. They will need to be carried forward by stakeholders liketeachers, legislators, technologists, philosophers and most importantly citizens. In case the future needs to be human, it needs to be a place where reflection precedes implementation, ethics precedes efficiency and dignity precedes utility.

This thesis is an invitation to a world slowdown: not an abandonment of innovation but a temporary pause in the rush. Not merely to inquire what we can do, but what we should. Not merely what we can construct, but what we ought to construct. Not merely what we can do well, but what is good.

Technology has always been a mirror of reflection, bouncing back to us our hopes, our fears and our dreams. Now it is also a map, plotting courses that take us into futures that we do not wish to inhabit. If we are to plot another map to a future of human flourishing, we must become more architects of our own destiny: not merely data-driven but wise.

Let us conclude with a final philosophical call:

- From Heidegger, let us remember to pause, to question the essence and to allow truth to unconceal itself beyond mere functionality.
- From Ellul, let us adopt the courage to resist where resistance is necessary and to assert ethics over inevitability.
- From McLuhan, let us cultivate awareness of how forms shape our consciousness and disrupt the unconscious grip of media environments.
- From Winner, let us democratize technology: embedding justice, inclusivity and deliberation into its very fabric.

6.8.4 Toward a Philosophy of Responsibility

The new world order we are living in demands a new ethics of responsibility: an ethics that acknowledges the wisdom that technological power is above all human responsibility. That is to say, constructing a system in which innovation is not bought at the expense of reflection and in which the good life of future generations is taken into account in every decision.

This is a call to teachers: to educate young minds to code, but to question.

This is a call to governments: to govern with philosophical wisdom, not corporate pressure.

This is a call to technologists: to code not with binary thinking, but with empathy, humility and wisdom.

This is a call to citizens: to reclaim your agency, ask more discerning questions and demand more from the systems that govern your lives.

And thus, our shared destiny in the technological age will not be determined by machines, but by the wealth of our mind, the strength of our values and the energy of our collective will.

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