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# Redefining Tomorrow

A Comprehensive  
Analysis of AI's Impact  
on Employment and  
Identity

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## **ABSTRACT**

In the rapidly evolving landscape of artificial intelligence (AI), this thesis explores the intricate interplay between AI, employment, and individual identity. Beginning with an examination of AI's disruptive effects on traditional employment structures, the study scrutinizes nuanced shifts in job markets, skill requirements, and the socio-economic landscape. Emergent work paradigms such as remote work, the four-day workweek, and the gig economy are explored. Reskilling and upskilling initiatives are emphasized as crucial responses to evolving job market demands.

Simultaneously, the thesis delves into the complex relationship between AI and individual identity, recognizing the challenges and opportunities posed by technological advancements. By employing sociological and psychological frameworks, the research investigates how individuals navigate evolving employment landscapes and redefine their identities in the face of AI integration.

Moreover, the study probes the role of education and policy frameworks in fostering a harmonious coexistence of humans and AI. Proposing recommendations for adaptive educational systems and inclusive policies, the research envisions a society capable of harnessing AI benefits while mitigating potential pitfalls.

In conclusion, "Redefining Tomorrow" offers a holistic understanding of AI's impact on employment and identity, providing valuable insights for policymakers, educators, and individuals navigating the complexities of an AI-driven future.

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# Introduction

## 1. Introduction to Artificial Intelligence

In an era where technology intertwines with every facet of our existence, artificial intelligence (AI) emerges as a pivotal force, reshaping not only our world but also the very essence of human identity. At its core, AI is the branch of computer science dedicated to creating systems capable of tasks that would normally require human intelligence. These tasks include learning, decision-making, problem-solving, and understanding human language. As AI evolves, it increasingly influences how we perceive ourselves, interact with others, and understand our place in the digital age.

This thesis embarks on an exploratory journey into the profound impact of AI on human identity. We live in a time where AI systems not only augment human capabilities but also challenge our concepts of selfhood and personhood. From digital assistants that predict our needs to algorithms that shape our online personas, AI's influence permeates our daily lives, subtly altering our perceptions of self and others. Additionally, AI's advancement could lead to significant job automation, potentially redefining our identity since we often heavily base our self-definition on our work and professional roles.

The intersection of AI and identity is multifaceted and complex. On one hand, AI's ability to mimic human behaviour and decision-making processes raises questions about the uniqueness of human consciousness. On the other, its role in social media and online platforms confronts us with reflections of our digital selves, often blurring the line between reality and virtual representation. In this context, AI also poses the potential to alter our workforce landscape, challenging traditional notions of career and

employment, and thereby influencing how we view our personal and professional identities.

This thesis aims to dissect these intricate dynamics, offering a nuanced understanding of how AI, in its ever-evolving state, is not just a technological phenomenon but a catalyst for redefining the very concept of identity in the 21st century. Through this exploration, we seek to uncover the ways in which AI both mirrors and molds our sense of self, examining its implications for individual and collective identity in an increasingly digitized world.

## **2. Introduction to Identity**

At the heart of human experience lies the concept of identity, a multifaceted notion that defines who we are and shapes our interactions with the world. Identity can be understood as the distinct characteristics, traits, and narratives that form an individual's self-perception and are recognized by others as representing that person. This concept encompasses various dimensions including personal attributes, social roles, cultural affiliations, and self-identification with certain groups or ideologies.

The Stanford Encyclopedia of Philosophy (2023) elucidates identity as a complex interplay of personal, social, and cultural layers that coalesce to form our unique sense of self (SEP, "Personal Identity"). It posits that our identity is not static but rather a dynamic construct influenced by our experiences, choices, relationships, and societal norms. This perspective underscores the fluidity of identity, highlighting how it evolves over time in response to changing internal and external factors.



Identity is the lens through which we view ourselves and the world, a continuously evolving narrative shaped by our interactions, experiences, and the societal structures around us. It is both deeply personal and inherently social, involving the way we see ourselves and how we are perceived by others.

The significance of identity extends beyond the individual. It plays a crucial role in how societies function, influencing social dynamics, power structures, and cultural norms.

Understanding identity is thus not only a journey into the self but also an exploration of the broader human experience, where individual narratives intersect with collective histories and cultural contexts.

### **3. Purpose and Scope of the Thesis**

The primary purpose of this thesis is to provide a comprehensive analysis of the profound and multifaceted impacts of artificial intelligence (AI) on employment and individual identity in the contemporary world. It aims to dissect and understand the intricate interplay between rapidly advancing AI technologies and the evolving landscape of work, along with the consequential shifts in personal and professional identities.

In terms of scope, the thesis delves into several key areas.

It begins with a critical examination of how AI is disrupting traditional employment paradigms. This includes an analysis of changes in job markets, the evolution of skill requirements, and the broader socio-economic implications. By exploring these areas, the thesis seeks to shed light on the transformative effects of AI on how work is structured and performed in various sectors.

The research extends to emerging trends in the workplace, such as the rise of remote work, the implementation of the four-day workweek, and the growing prevalence of the gig economy. It evaluates how these new work paradigms are intertwined with AI advancements and what this means for the future of work.

Recognizing the dynamic nature of job markets in an AI-driven era, the thesis emphasizes the importance of reskilling and upskilling. It explores how these initiatives are critical in equipping individuals to meet the changing demands of the job market, thus ensuring a workforce that is adaptable and competent in the face of technological shifts.

A significant portion of the thesis is dedicated to exploring how AI influences individual identity. Employing sociological and psychological frameworks, the study examines the challenges and opportunities AI presents for personal identity formation and transformation. This includes how individuals are redefining their roles and self-perceptions in a world increasingly integrated with AI.

The thesis also probes into the crucial role that education systems and policy frameworks play in harmonizing the relationship between humans and AI. It proposes recommendations for adaptive educational strategies and inclusive policies that aim to maximize the benefits of AI while minimizing its adverse effects.

Finally, the thesis aspires to provide a forward-looking perspective. It envisions a society that is not only equipped to harness the potential benefits of AI but also prepared to address and mitigate the challenges it poses. This includes offering insights and recommendations for policymakers, educators, and individuals to navigate and thrive in an AI-driven future.

In conclusion, "Redefining Tomorrow" endeavours to offer a holistic and in-depth understanding of the impacts of AI on employment and identity, serving as a valuable resource for a range of stakeholders in our rapidly changing world.

## **Chapter I – Evolution of AI in the Workplace**

As we navigate the dynamic landscape of the modern workplace, artificial intelligence (AI) emerges as a pivotal thread, intricately woven into our professional existence. This transformation, from its inception as a visionary concept among pioneering computer scientists to its current role as a vital instrument across various sectors, exemplifies AI's extraordinary evolution.

In this chapter, I embark on a historical journey to trace AI's progression from a mere conceptual entity to an essential element in our daily professional tasks. I aim to dissect how AI has redefined job roles, catalysed productivity, and paved the way for unprecedented innovation and efficiency.

### **1. Definition of AI**

Artificial Intelligence (AI) is a field of computer science dedicated to creating machines capable of performing tasks that typically require human intelligence. This encompasses a broad range of abilities such as learning, problem-solving, perception, decision-making, and language understanding. AI represents the pinnacle of human ingenuity, where machines are not just tools, but collaborators, capable of enhancing human capabilities and transforming the way we interact with our world. The historical evolution of AI is a captivating saga that spans decades, reflecting humanity's relentless pursuit of innovation and its aspirations to replicate and surpass the capabilities of the human mind.

This journey began in the mid-20th century, a period marked by theoretical groundwork and conceptual breakthroughs. It was an era where the idea of machines mimicking human thought processes shifted from the realms of science fiction to plausible reality.

As we delve into this narrative, we witness the emergence of AI from its primitive state to its current form, where it's not only a staple of technological advancement but also an integral part of our daily lives.

## **2. A Brief History of Artificial Intelligence**

The philosophical foundations of Artificial Intelligence (AI) have been pivotal in philosophy since ancient times, with philosophers like Aristotle, Thomas Hobbes, and Gottfried W. Leibniz exploring basic cognitive operations, the requirements for a language to describe the world precisely and unambiguously, and the potential for automating reasoning. However, only in the 20th century, with the advent of computers, could experiments begin to address the question of creating artificial intelligence systems.

Our narrative begins over seventy-five years ago with Alan Turing's 1945 design of the Automatic Computing Engine (ACE). Turing's foresight laid the groundwork for AI, with his emphasis on machine learning and problem-solving through exploring multiple possibilities (Copeland & Proudfoot, 2000). The fundamental question in AI, "When is a system designed by humans considered intelligent?", was addressed by Alan M. Turing in 1950 through the imitation game, an operational AI test. This test involves a human interrogator conversing simultaneously with a human and a computer, unable to visually identify them. If the interrogator cannot distinguish between the human and computer

responses, the computer is deemed as intelligent as a human, linking intelligence to linguistic competence (Nilsson, 2005).

The 1950s marked significant milestones: the pilot model ACE, a precursor to the De Ferranti Mark I, the first commercially available computer in 1951 (Copeland & Proudfoot, 2000).

The year 1956 is often cited as the birth of AI due to the Dartmouth College conference, but the actual inception was earlier, in 1955, with the Logic Theorist, the first AI system (Cordeschi, 2007). Created by Allen Newell, Herbert A. Simon, and J. Clifford Shaw at Carnegie Mellon University, it solved theorems from Alfred N. Whitehead and Bertrand Russell's "Principia Mathematica". Despite initial rejection from the Journal of Symbolic Logic, this project was a landmark in AI history (Cordeschi, 2007).

Newell, Simon, and Shaw's further research led to the General Problem Solver (GPS) in 1959, addressing various formal problems and establishing the paradigm of cognitive simulation in AI. Concurrently, John McCarthy at MIT proposed using formal logic-based models for common sense problems, a concept initially criticized but later leading to the development of Lisp language and influencing the logic-based paradigm in AI (Flasiński, 2016).

The 1980s and 1990s marked a shift in AI research towards augmenting human intelligence, known as narrow AI (Proudfoot & Copeland, 2012). This period also saw the advent of automation in manufacturing, initially aimed at reducing labour costs and increasing production (Levin & Rumberger, 1983).

However, the introduction of computers in workplaces often led to increased labour, especially when dealing with system failures and bugs. Levin and Rumberger (1983), observed that many skilled jobs were simplified into routine, machine-operated roles.

The 1980s also witnessed the rise of personal computers (PCs), transforming the workplace and office automation (Hunt & Hunt, 1986). Despite initial concerns about job elimination, this era saw employment growth, albeit accompanied by a reduction in required skills in some sectors (Levin & Rumberger, 1983).

The Bureau of Labor Statistics' prediction of a 22 million job increase from 1978 to 1990 included roles in data processing and computer operations (National Research Council, 1999). However, the number of low-skilled job opportunities surpassed those in high technology fields.

Today's AI, fortified by vast resources and cloud-based capabilities (Pratt, 2015), stands on the cusp of an era where it not only matches but often surpasses human abilities.

### **3. The Impact of Automation on Employment**

Technology is typically seen as a force that will inevitably replace labour. This view, combined with data availability primarily at the sectoral level, has led to numerous studies focusing mainly on job destruction and its likely acceleration due to technological changes (Frey & Osborne, 2017), often overlooking critical analysis at the technological and organizational levels.

In a 1961 TIME magazine article titled “The Automation Jobless” for instance, a pressing concern was highlighted: automation might impede the economy's ability to generate

new jobs. The issue wasn't just about jobs lost to more efficient machines; it was about the inability of new industries to compensate for these losses (TIME, 1961). Unlike past industrial shifts, modern industries often offer limited opportunities for unskilled or semi-skilled workers, the very demographic most affected by automation.

However, this perspective has been challenged, as automation often targets specific tasks within jobs, and jobs rarely disappear entirely. This view overlooks the incremental nature of automation, where technical feasibility does not always equate to economic feasibility, which varies across sectors and firms.

Chairman Bowen (1966) succinctly noted, "The basic fact is that technology eliminates jobs, not work." Automation is typically aimed at replacing labour, but it also complements labour, increases output, and can lead to higher demand for labour. It's crucial to understand how automation enhances the value of tasks uniquely supplied by workers. Despite advancements in labour-saving technology, we haven't seen widespread job elimination. This is because work processes involve a complex interplay of inputs like labour, capital, creativity, technical skills, and intuition. Improvements in one aspect do not necessarily eliminate the need for others.

However, technological change doesn't always lead to more employment. Its impact depends on several factors: how well workers' skills complement automation, labour supply elasticity, and the demand elasticity for output. Over the long term, productivity gains haven't led to a decrease in demand for goods and services. For instance, an average US worker in 2015 could live at the income level of a 1915 worker by working just 17 weeks a year. This implies that consumption demands have risen alongside productivity (Autor, 2015).



Despite not reducing the quantity of jobs, automation significantly alters job quality. Post-World War II, there was a shift away from physically demanding, dangerous jobs towards skilled work. But after the 1970s, this trend slowed or even reversed in some cases.

While high-skill jobs grew, skilled blue-collar and clerical jobs declined (Katz & Margo, 2014).

Jobs are increasingly seen as combinations of tasks, some of which are automated, and others not. Tasks are distinct from skills; they are activities performed by workers, while skills are the individual and collective capabilities workers possess. Workers use their skills to perform a variety of tasks, adapting them in response to technological and organizational changes.

Understanding the impact of information technology starts with its fundamental nature: computers execute tasks as programmed by humans. However, there are many tasks that humans perform effortlessly but can't explicitly define in rules for computers to simulate. This is known as Polanyi's Paradox, emphasizing the challenges in automating tasks requiring flexibility, judgment, and common sense. Autor et al. (2003) identified two task categories resistant to computerization: 'abstract' tasks, requiring high levels of education and analytical capability, and 'manual' tasks, demanding situational adaptability and physical skills.

The phenomenon of 'job polarization,' as described by Goos and Manning (2003), is the growing divide in employment between high- and low-education jobs, with a decline in middle-skill jobs.

Considering Polanyi's Paradox, two paths emerge for overcoming automation challenges: environmental control and machine learning. Environmental control simplifies the environment for machines to function, while machine learning infers tacit rules from context and data. These approaches represent the ongoing evolution in automating complex tasks.

In conclusion, if machines were to render human labour redundant, it would create immense aggregate wealth, but also pose significant challenges in wealth distribution and ownership.

#### **4. Navigating Towards a Jobless Society?**

As we delve into the 21st century, the rapid advancement of automation technology is reshaping the landscape of work, potentially steering us towards a future where human labour becomes less essential. This transformation, driven by breakthroughs in artificial intelligence, robotics, and machine learning, is not just altering the nature of jobs but is also raising the spectre of a jobless future.

Automation has been a transformative force in various sectors, from manufacturing to service industries. The adoption of robotic automation in manufacturing has streamlined production processes, significantly reducing the need for manual labour. In the service sector, AI-driven systems are increasingly capable of performing tasks ranging from customer service to data analysis, roles traditionally occupied by humans.

Amidst a restructuring prompted by AI innovations, Google has already let go of 1,000 employees, and there are reports suggesting that another 30,000 employees may soon face layoffs (The HR Digest, 2023).

The swift actions taken by Google, including the recent layoffs and ongoing restructuring, serve as a stark reminder of the profound impact AI is having on employment across various industries.

As artificial intelligence continues to advance, businesses are faced with both opportunities and challenges. While AI innovations can enhance efficiency and productivity, and even create new job opportunities, they also have the potential to automate certain tasks and reduce the need for human workers in specific roles.

Google's situation exemplifies the broader corporate adaptation to the changing work environment in the AI era. This movement towards automation and AI-centric strategies extends beyond the realms of major technology firms, impacting diverse industries including manufacturing, customer support, healthcare, and finance among others.

The effects of AI on employment are an ongoing discussion, and it's clear that the transformation is already underway. As businesses continue to harness the power of artificial intelligence, the balance between technological progress and workforce needs will remain a critical consideration for companies, governments, and society as a whole.

But the proliferation of automation technology is not merely about machines replacing humans in existing jobs; it's about the fundamental redefinition of work. Automation is increasingly capable of performing complex tasks, including those that require cognitive skills, decision-making, and even creative abilities. As machines become more sophisticated, the range of jobs they can perform expands, encroaching on territories once thought to be the exclusive domain of human workers.

The economic implications of this shift are profound. On one hand, automation promises increased efficiency, lower production costs, and potentially higher profits for

businesses. However, this efficiency gain comes at a potential cost – the displacement of human workers.

The threat of a jobless future emerges as a real possibility in this scenario. As automation becomes more widespread, the need for human labour in many industries could diminish significantly. This shift could lead to significant job losses, particularly in sectors where routine tasks are prevalent. The result could be a paradoxical situation where societies face high levels of unemployment despite having highly efficient and productive economies.

The impact of automation on employment is not just an economic issue; it's a social and psychological one as well. Work is not only a source of income but also of identity, purpose, and social interaction. The prospect of widespread unemployment due to automation poses risks to social stability and individual well-being. The loss of work can lead to increased mental health issues, a sense of purposelessness, and the erosion of social bonds that work environments often provide. I will further discuss this topic in chapter 4.

In navigating this potential future, several solutions have been proposed. One is the concept of a universal basic income (UBI), where citizens receive a regular, unconditional sum of money from the government. UBI could provide a safety net for those displaced by automation, ensuring basic economic security.

Sam Altman, the head of OpenAI, the leading artificial intelligence (AI) lab in recent years, envisions a future where AI's economic benefits are so vast that they could

support a Universal Basic Income (UBI) of \$13,500 annually for every adult in the United States within the next decade (Basic Income Today, 2021). This UBI would be funded by the extraordinary profits generated by future AI technologies. Altman's perspective is that as AI progresses, it will surpass human labour in economic productivity, leading to a significant decrease in the value of human work.

Another approach is the emphasis on education and retraining. As automation changes the nature of work, there will be a growing need for skills that machines cannot replicate easily, such as creativity, emotional intelligence, and complex problem-solving. Education systems may need to pivot to focus more on these skills, preparing the workforce for a changing job market.

Additionally, there may be a need for a societal shift in how we view work and leisure. If automation leads to less need for human labour, societies might need to find new ways to provide purpose and fulfilment outside the traditional work environment.

I will further discuss this topic in chapter 5.

The march towards increased automation is likely unstoppable, driven by the relentless pursuit of efficiency and technological advancement. However, this journey towards a potentially jobless future must be navigated with care, balancing the benefits of automation with the need to mitigate its disruptive effects on employment and society. The future of work in an automated world presents both challenges and opportunities, and it's up to us to steer this course wisely, ensuring a future that benefits all members of society.

## Chapter II – AI-Enhanced Work Paradigms

The onset of the Covid-19 pandemic in early 2020 marked a watershed moment in the world of work, fundamentally altering how and where work is conducted. Prior to the pandemic, the transition to remote work was a gradual and often hesitant process, limited to certain sectors and often seen as a privilege rather than a norm. However, the pandemic forced a sudden, global shift to remote working, as lockdowns and social distancing measures made traditional office work untenable. This shift was not just a temporary adjustment but a radical and universal transformation of the workplace paradigm.

In recent times, indeed, there has been a notable surge in the adoption of flexible work practices (FWPs). These practices empower employees to have greater control over their working hours, location, or workload (Kelly & Moen, 2007). A study focusing on American companies with at least 50 staff members revealed that a vast majority (79%) offer flexible scheduling options, allowing employees to decide their own start and end times. Additionally, half of these companies permit telecommuting, which lets employees work from outside the office. Around 38% offer compressed work weeks, enabling employees to complete a full week's work in less than five days. (Galinsky et al., 2008).

The transition was not just about relocating work from offices to homes. It brought about profound changes in the nature of work, worker-employer relationships, and the balance between professional and personal life. It upended long-standing norms and practices, proving that a significant portion of work could be done effectively outside of conventional office spaces.

## **1. AI as an Enabler in the New Work Landscape**

As the world adapted to remote work, another transformative force was at play: Artificial Intelligence (AI). AI technologies have been pivotal in enabling and enhancing flexible work practices. From smart scheduling tools and project management software to AI-driven cybersecurity solutions, AI has streamlined flexible work processes, making them more efficient and secure. AI-powered communication and collaboration platforms have also played a crucial role, allowing teams to work together seamlessly, regardless of their physical location.

AI is doing more than just making remote work easier; it's transforming the essence of work. By automating mundane tasks, AI allows human employees to dedicate their efforts to tasks that are more intricate, imaginative, and strategic, which necessitate human creativity and wisdom. This change prompts a reconsideration of both the amount of work and the hours spent working, as AI assumes responsibility for the monotonous tasks that used to consume a large part of the workday.

In this evolving landscape, one of the most intriguing developments has been the growing interest in the four-day workweek. As AI and automation enhance productivity, many organizations are exploring the possibility of reducing work hours without compromising output. The argument is that by leveraging AI's efficiency, workers can achieve the same results in less time, leading to a better work-life balance.

The pandemic has already shown that flexibility in work arrangements does not necessarily diminish productivity. Building on this revelation, the idea of a four-day workweek is gaining traction as a way to improve employee well-being, reduce burnout,

and increase productivity. This model is seen as a way to acknowledge the changing nature of work, where quality and output are prioritized over mere hours spent at a desk.

## **2. Remote Work**

Remote work has become an essential component of the contemporary business landscape (Jooss et al, 2020). The term "remote work" generally refers to employees fulfilling their job responsibilities outside the traditional office setup (Hill & Schmutz, 2020). Despite definitional discrepancies stemming from contextual variations among researchers, two widely acknowledged characteristics of remote work are: (1) it takes place away from the traditional workplace, and (2) it relies on information technologies for work tasks (Herbert et al, 2014).

For organizations that operate across geographic boundaries and time zones, remote work has become indispensable for the seamless functioning of various organizational functions, including marketing, finance, and supply chain management (Jackowska & Lauring, 2021).

However, the recent COVID-19 pandemic has brought renewed attention to remote working (Orsini & Rodrigues, 2020). To overcome the pandemic-induced challenges, most businesses have implemented remote work protocols to ensure uninterrupted productivity and reduce the risk of virus transmission (Bonacini et al., 2021). For instance, European organizations are encouraged to adopt remote work policies covering at least half of their workforce in response to the pandemic's second wave (Athanasiadou & Theriou, 2021).



The widespread adoption of remote work has brought significant changes to organizational work practices and how they are executed (Donnelly & Johns, 2021). The proliferation of digital technologies, especially those facilitating communication and collaboration, along with the accessibility of powerful mobile devices, has enabled businesses to establish smarter working systems.

Nevertheless, effectively managing remote work remains challenging due to the rapid pace of technological advancements, prompting many businesses to adjust their working arrangements to support new organizational principles such as autonomy in choosing work settings (Leonardi & Bailey, 2008).

## **2.1 History of Remote Work**

Remote work has been a part of the professional landscape for decades, existing in forms such as homework, telework, and mobile work, a development tracked by Messenger and Gschwind (2016). The concept of 'telecommuting' emerged in the 1970s, partly as a reaction to the oil crisis and the desire to cut down commuting time, a significant issue in California, USA (Nilles, 1975). Telecommuting gained traction in the US during this period, driven by fuel shortages and the resulting need for alternative work arrangements (Ellison, 2004). This led to a rise in working from home, as workers sought to reduce their fuel-intensive commutes, relying on telephones for communication (Bailey, 2022). The 1980s saw expectations that advancements in information and communications technology (ICT) would lead to a new wave of teleworking (Toffler, 1980), with desktop computers and file transfer protocols facilitating remote work (Bailey, 2022).

Further ICT developments allowed companies to relocate work internationally to cut costs and boost productivity (Ellison, 2004), leading to the growth of business process outsourcing (BPO) and the establishment of call centres in emerging economies. These advancements made it easier to transfer knowledge for service-related tasks, resulting in job reallocation across geographical borders.

From the 2000s, innovations like cloud computing laid the groundwork for new outsourcing models via online labour platforms. Prior to the Covid-19 pandemic, some firms permitted remote working, but the pandemic's initial phases prompted a widespread shift to full-time remote work. This has led to a labour market split, with some companies continuing full-time remote work while maintaining traditional employment relationships, and others using online labour platforms for outsourcing, often eschewing conventional employment relationships. This trend has driven firms to become more flexible and responsive to market changes. It has also given rise to 'digital nomads', who are redefining remote work towards a 'virtual office' concept (Messenger & Gschwind, 2016).

## **2.2 Expansion of Remote Work**

The expansion of remote work, propelled by the swift digitalization of the past decade, has been further accelerated by the Covid-19 pandemic. This era has seen a surge in the use of digital tools and technologies, including the emergence of digital labour platforms, reshaping work by altering organizational structures and procedures. This shift involves not only the digitization of tasks previously done in-house but also the externalization of these tasks to remote workers globally through online platforms and technologies.

The Covid-19 lockdowns heightened the realization of remote work's feasibility, including for roles traditionally confined to office settings. Financially constrained firms capitalized on this by outsourcing tasks to remote workers, thereby cutting costs and tapping into international talent pools (Rani & Dhir, 2020). The pandemic also facilitated easier hiring of remote workers from abroad (Brynjolfsson et al., 2020), contributing to the surge in remote employment.

AI and robotics advancements have automated numerous tasks that previously required human intervention, particularly in data analysis, customer service, and even complex decision-making processes. This automation has not only streamlined operations but also allowed businesses to maintain continuity and efficiency with remote teams. Tools powered by AI, such as virtual assistants and customer service chatbots, have taken over repetitive tasks, freeing employees to focus on more strategic and creative work that can be done from anywhere. Moreover, AI-driven platforms facilitate project management, team collaboration, and real-time communication, making remote work more feasible and productive. A study by Owl Labs in 2019 revealed that remote workers reported higher productivity levels compared to their in-office counterparts, underscoring the effectiveness of digital tools in supporting remote work (Owl Labs, 2019).

Major tech companies like Google now permit 20% of their workforce to work remotely permanently, while Twitter and Facebook offer complete remote work adoption if job requirements and employee preferences align (Leonardi & Bailey, 2008).

The pandemic has also expedited the adoption of digital collaboration tools like Teams and Slack in traditional workplaces, providing platforms for remote interaction but also enabling work monitoring and control.

Furthermore, a survey of 1000 US business leaders conducted by Resume Builder (2023) showed that since November 2022, 48 percent of companies have substituted employees with ChatGPT for various tasks such as coding, copywriting, content creation, and customer support.

Furthermore, robotics, particularly in manufacturing and logistics, has enabled a degree of operational autonomy that reduces the need for on-site human workers. Advanced robotics systems can manage everything from assembly lines to inventory management with minimal human oversight, allowing those managerial and supervisory roles to be performed remotely. This shift has significant implications for job distribution and the geographical mobility of the workforce, as employees are no longer bound to live near their places of employment.

A prime example of this occurrence is Amazon's use of robotics and AI in its warehouses and fulfilment centres. Amazon has been at the forefront of integrating advanced robotics systems to automate various processes within its operations.

The company utilizes more than 750,000 robotic units in its warehouses (Amazon, 2023), which assist in moving goods, sorting packages, and preparing orders for shipment. These robots work alongside human employees, but their efficiency and speed in handling repetitive tasks significantly reduce the need for on-site human labour for these specific functions. Additionally, Amazon's use of AI and machine learning algorithms enhances its inventory management, forecasting, and logistics planning, allowing for a high degree of operational autonomy.

This automation enables Amazon to manage its vast inventory and fulfil customer orders with remarkable speed and accuracy. For instance, its robotic drive units, like Proteus, which carry shelves of products directly to the employees who then pick the items for order fulfilment, have drastically reduced the time and effort required for this process (Amazon, 2022). Moreover, Amazon has introduced an advanced robotics system called "Sequoia," which can allow them to identify and store inventory up to 75% faster than before, as well as reducing the time it takes to process an order by up to 25%, which improves shipping predictability and increases the number of goods they can offer for Same-Day or Next-Day shipping (Amazon, 2023).

The integration of these technologies not only optimizes Amazon's operations but also allows for remote monitoring and management of warehouse activities. Managers and supervisors can oversee operations, analyse performance data, and make decisions without being physically present on the warehouse floor, illustrating how robotics and AI enable a new level of remote work in the logistics and manufacturing sectors.

The transition to remote work also reflects broader societal shifts towards flexibility and work-life balance. As AI and robotics make it possible to decouple work from specific locations, employees seek greater control over their work environments and schedules.

This desire for flexibility has been linked to improved mental health, job satisfaction, and employee retention. The "State of Remote Work" report by Buffer in 2020 highlighted that the flexibility to set their schedule and the ability to work from any location were among the top benefits reported by remote workers (Buffer, 2020).

However, the proliferation of remote work raises questions about the future role of physical office spaces and the nature of collaboration and company culture in a digitally

dominated world. While technology enables communication and collaboration, there are concerns about the potential for isolation, the loss of spontaneous interactions that foster innovation and team cohesion, and the challenges of maintaining a distinct work-life boundary. These concerns underscore the need for new management practices and organizational cultures that support remote work while addressing its potential downsides.

Economically, the shift to remote work facilitated by AI and robotics advancements presents both cost-saving opportunities and new investments for businesses. Reduced need for physical office spaces can lower operational costs, but this must be balanced with investments in technology infrastructure and training to support effective remote work. Moreover, as the geographic constraints of employment diminish, companies can access a broader talent pool, potentially increasing diversity, and filling skill gaps more effectively. However, this also introduces competitive pressures as employees can more easily seek out global opportunities, highlighting the need for companies to enhance their value proposition to attract and retain talent.

The impact of remote work extends beyond the corporate sector to influence urban planning, real estate, and environmental policies. The decrease in daily commuting has immediate environmental benefits, reducing traffic congestion and lowering carbon emissions. Cities and regions previously defined by their status as commercial hubs may need to adapt to a new reality where demand for office space declines, prompting a reimagining of urban spaces for residential, recreational, or mixed-use purposes.

### **2.3 Which Jobs Are Suitable for Remote Work?**

The pandemic has spurred extensive research on which jobs are suitable for remote work, particularly in advanced economies. Dingel and Neiman (2020) explored the United States' Occupational Information Network (O\*NET) database and concluded that jobs not requiring physical presence, such as those in computer or IT, education, legal, business, and financial sectors, are more adaptable to remote work. Similarly, Sostero et al. (2020) utilized detailed occupational data to demonstrate a stark contrast in remote work potential between white-collar and blue-collar jobs, with the former being more suited for remote work. This is corroborated by North American firm-level surveys indicating that knowledge-intensive tasks performed by skilled professionals are more likely to be done remotely than jobs in manufacturing or hospitality (Bartik et al., 2020).

Studies like Adrjan et al. (2021) have analysed online job postings across 20 OECD countries, observing an uptick in telework offerings between 2019 and 2021 in certain high-skilled sectors, such as IT and insurance. These studies suggest that countries and sectors with better digital readiness have greater potential for remote work.

Real-time surveys have been key in estimating the number of remote workers and identifying their occupations. In Germany, IT and communications, education, and real estate are among the sectors most engaged in remote work (Möhrling et al., 2020). Cross-national surveys in countries including the USA, China, Japan, Italy, South Korea, and the UK reveal that managerial and professional jobs are more likely to be remote than blue-collar or sales and service roles (Belot et al., 2020). A comparative survey between the US and the UK in 2020 showed significant differences across occupations and industries in remote task feasibility (Adams-Prassl et al., 2020).

Before the pandemic, the rise of automation and AI was already debated for potentially replacing clerical tasks, such as AI 'virtual assistants' performing secretarial work. Currently, remote human workers in countries like India and the Philippines are not only performing these tasks for clients in the Global North but also training the AI systems (ILO, 2021). Additionally, there's an increase in big tech companies outsourcing tasks like data annotation and image tagging to business process outsourcing companies or workers on microtask platforms, often in the Global South due to lower costs (ILO, 2021). A notable example is OpenAI's outsourcing to Kenyan workers to mitigate ChatGPT's toxicity (Perrigo, 2023). While aiming to improve user experience, such tasks can expose workers to psychological risks impacting their mental health. This trend also raises questions about the development benefits for educated workers in these countries.

Remote work's feasibility varies by country and sector and isn't suitable for all tasks or jobs. In developed countries, it may lead to job losses or task reclassification, while in developing countries, it can create new jobs, albeit with significant work process changes.

When tasks are outsourced to countries in Asia or Africa, they tend to be fragmented and low-paid, contrasting with their higher pay in developed countries. This shift in task nature prompts questions about work quality, job content, and the employment relationship. Often, online remote tasks don't align with workers' education levels and offer limited career progression or skill development opportunities (Rani et al., 2023), raising fundamental questions about the nature of jobs being created.



### 3. Four Day Workweek

The traditional workweek has its roots in the early 20th century when Henry Ford adopted a 40-hour workweek, believing it would lead to increased consumer spending. Since then, the nature of work, especially in knowledge-based professions, has evolved, prompting many to argue for a re-evaluation of the conventional work schedule.

The concept of a shorter workweek has become popular in 2020 when New Zealand's Prime Minister, Jacinda Ardern, has proposed a four-day workweek as a strategy to revitalize the nation's economy, particularly its tourism sector, which has been hit hard by the absence of international tourists due to Covid-19 (The Guardian, 2020).

Barnes, the founder of Perpetual Guardian and co-author of "The 4 Day Week", believes the pandemic has encouraged more companies to consider shorter workweeks (Barnes & Jones, 2020).

He notes that the crisis has forced employers to be more flexible, including allowing remote work, which has shown that alternative schedules do not necessarily undermine work ethics or productivity.

Advancements in AI and robotics are also central to this shift, offering unprecedented opportunities to automate routine tasks, streamline operations, and enhance productivity across various sectors. As these technologies take on more of the workload traditionally performed by humans, the rationale for long work hours diminishes. A study by the UK's Henley Business School found that businesses adopting a four-day workweek reported improvements in employee productivity, job satisfaction, and work-life balance (Henley Business School, 2019). This shift is not merely about reducing hours but rethinking the

efficiency and purpose of work in an era where technology can handle a significant portion of operational tasks.

Implementing a shorter workweek varies among companies. Some compress 40 hours into four days, while others simply reduce the workweek to four eight-hour days without pay cuts.

Nevertheless, the adoption of new work schedules has been slow, as the traditional five-day, 40-hour workweek is deeply entrenched in our global work landscape. While some attempts have failed, and implementing this change in industries like hospitality and retail could be challenging, proponents of the four-day workweek argue that it has been effective. For instance, Microsoft Japan's experiment with a four-day workweek resulted in a 40% increase in productivity, challenging traditional assumptions about work duration and output (The Guardian, 2019).

This suggests that, if properly implemented, a shorter workweek could sustain or even enhance economic performance, particularly in sectors where creativity, innovation, and cognitive skills are paramount.

Some companies are adopting the four-day workweek as a cost-saving measure. For instance, journalists at the Los Angeles Times (2020) accepted a temporary 20% pay cut along with a four-day workweek to help the struggling newspaper save costs.

The push towards a four-day workweek also aligns with growing awareness of mental health and the importance of work-life balance. With burnout and stress-related

illnesses on the rise, there is a compelling argument for redefining what constitutes a productive work environment. Research indicates that shorter workweeks can lead to lower stress levels, higher job satisfaction, and improved overall well-being (The Guardian, 2018). This approach challenges the traditional notion that longer hours equate to more work done, suggesting instead that focused, efficient work within a condensed timeframe can yield equal or superior results. Research suggests that the shift towards a four-day workweek is also driven by Millennials' and Generation Z's preference for flexible work schedules (Deloitte, 2023).

The societal implications of a four-day workweek extend beyond the immediate benefits to employees and employers. This model has the potential to redistribute labour more evenly across the population, addressing issues of unemployment and underemployment by freeing up work opportunities for more people. Additionally, a shift towards a shorter workweek could foster a more equitable distribution of domestic responsibilities, contributing to gender equality by allowing both men and women more time to engage in family life and caregiving responsibilities.

Moreover, the environmental implications of a four-day workweek present another compelling argument for its adoption. Reduced commuting times and lower office energy consumption contribute to a decrease in carbon emissions, aligning with broader sustainability goals. A report by the UK think tank Autonomy suggests that transitioning to a shorter workweek could significantly reduce the UK's carbon footprint, highlighting the potential environmental benefits of this shift (Autonomy, 2019).

Despite the potential benefits, the transition to a four-day workweek faces challenges and resistance. Concerns about the feasibility of this model in certain industries, potential impacts on customer service, and the need for widespread cultural and organizational change are significant hurdles. Moreover, the benefits of AI and robotics advancements are not uniformly distributed, with some sectors and job types more amenable to automation than others. This uneven landscape requires nuanced approaches to work reduction, ensuring that the benefits of technological advancements are equitably shared.

The adoption of the four-day workweek represents a significant cultural shift in workplace norms and highlights the evolving priorities and needs of the modern workforce. The four-day workweek exemplifies how technological advancements can be leveraged not only for economic gains but also to foster a more humane and balanced approach to work and life.

As technological advancements continue to revolutionize our daily lives and an increasing societal emphasis is placed on the value of leisure and personal time, it is reasonable to anticipate that a reduction in the traditional workweek will emerge as a significant trend in our economic framework. Such a change promises to reshape our professional landscape in the foreseeable future, potentially leading to a more balanced and fulfilling lifestyle for many.

## **Chapter III – Job Displacement and Reskilling**

The rapid advancement of automation and artificial intelligence (AI) has ushered in a new era in the workforce, bringing forth significant changes in the job market. This technological revolution, while offering immense benefits in terms of efficiency and innovation, also poses a critical challenge: job displacement.

### **1. Job Displacement**

Job displacement due to automation and AI refers to the phenomenon where human labour is replaced by machines or algorithms. This is not a novel concept; throughout history, technological advancements have always impacted the labour market. However, the scale and speed at which AI and automation technologies are evolving today are unprecedented.

The advent of intelligent machinery and automation technologies is now challenging the security of jobs in non-routine, professional, and even creative fields, previously thought to be safe from the reach of automation. The notion that job displacement is inevitable is widely accepted and echoed in the policy suggestions of global organizations, leading consulting firms, and official government documents.

Support for this perspective is found across the political divide, ranging from proclaimed futurists in Silicon Valley to advocates on the radical left. However, opinions diverge when it comes to the implications for the workforce. Those with a techno-pessimistic outlook foresee a bleak future marked by technological joblessness, whereas techno-

optimists believe that complete automation could liberate workers from tedious labour, opening up opportunities for a future beyond work or beyond capitalism.

But for labour prices to drop to zero, AI must achieve a level of generality where it can perform any task a human can but at a superhuman level, a stage referred to as artificial general intelligence (AGI). At this juncture, it's plausible that such systems could supplant a wide range of human labour, both physical and cognitive (McKinsey Global Institute, 2017), with the latter raising significant concerns.

Unforeseen emergent behaviours not anticipated during the AI's initial design could manifest after deployment, potentially endowing AGI with agency, or the capacity to set and pursue its own goals. This combination of emergent properties and agency could particularly threaten cognitive and physical jobs, diminishing the unique advantage of human intellect (Tech Talks, 2022).

Research conducted in March 2023 (Eloundou et al., 2023) revealed that approximately 80% of the U.S. workforce might see at least 10% of their job tasks affected by the advent of Large Language Models (LLMs), with about 19% possibly experiencing at least half of their tasks altered. This study delves into the labour market implications of LLMs, like GPT from OpenAI, highlighting the tasks they can undertake and their potential effects on employment and wages.

Although LLMs have shown impressive abilities, the full scope of their real-world applications and impact on the labour market remains to be fully grasped. The above study suggests that LLMs could directly influence around 32% of the U.S. labour market, especially in roles related to information processing and communication.

History shows that transformative technologies typically augment labour, despite causing short-term employment disruptions. In the past, when technology rendered jobs obsolete in one sector, market forces often generated new industries where human labour found relevance. However, the unique characteristics and capabilities of AGI suggest a different outcome this time, potentially rendering human labour less competitive in both physical and cognitive domains, thereby challenging the traditional market dynamics.

### **1.1 The Impact of Automation**

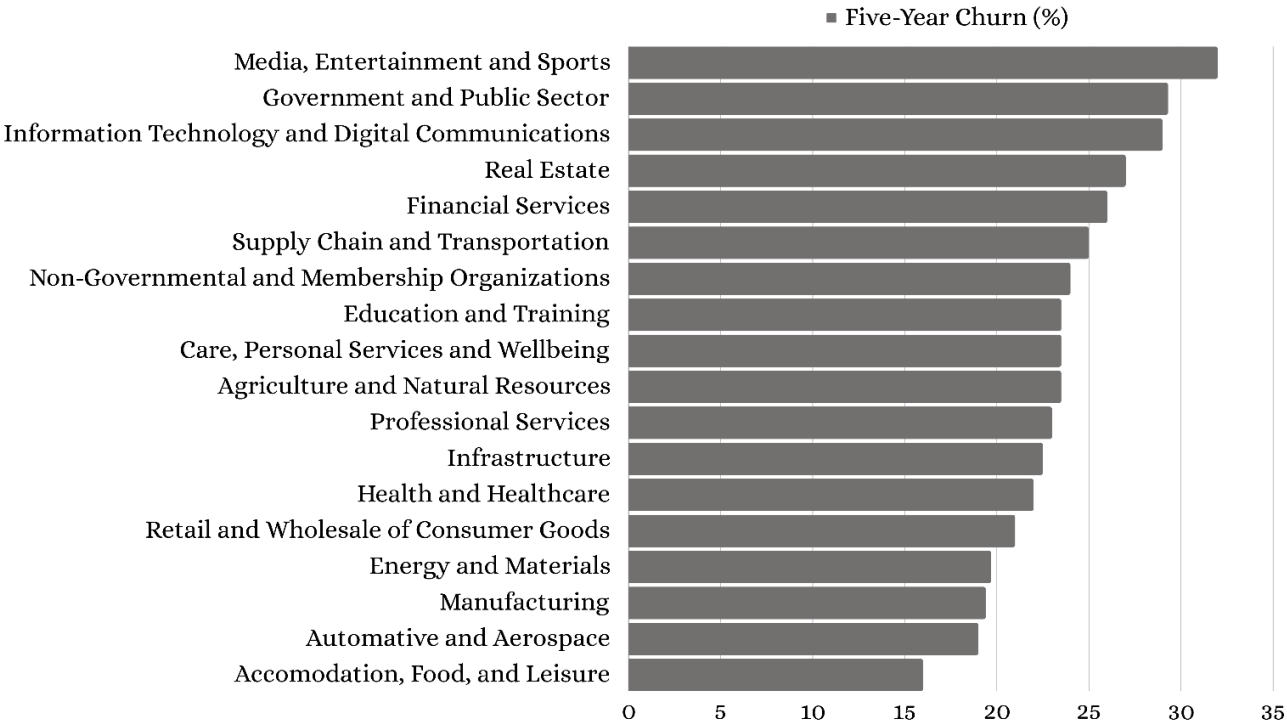
The McKinsey Global Institute report on the future of work estimates that by 2030, up to 800 million global workers could be displaced by robotic automation and AI, signalling a significant shift in the types of jobs that will be available and the skills that will be required (McKinsey Global Institute, 2017). However, this displacement is not uniformly distributed across sectors or geographies. Sectors characterized by routine, as repetitive tasks are more susceptible to automation. Manufacturing, for instance, has seen significant job displacement due to robotics and automated assembly lines (International Federation of Robotics, 2020). Similarly, the advent of AI-driven software has transformed sectors like customer service, with chatbots and automated service platforms taking over roles traditionally held by humans.

While automation displaces some jobs, it also creates new opportunities. The rise of AI and automation has led to an increased demand for roles in machine learning, data analysis, and AI ethics. Furthermore, automation can lead to job transformation rather

than outright displacement. In many cases, automation takes over mundane aspects of a job, allowing employees to focus on more complex and creative tasks.

Over the next five years, job creation and destruction are anticipated to vary widely across different job categories and industries, influenced by overarching trends in technology (Future of Job Reports, 2023).

The concept of 'labour-market churn,' a measure used to quantify expected shifts in labour markets, specifically addresses structural labour-market churn, defined as changes in employment structures within companies due to the creation of new roles or elimination of existing ones, as distinguished from job changes involving replacement hires for the same role.



Source: Brookings Analysis of Webb (2019)



According to the Future of Jobs Report (2023), a mean structural labour-market churn of 23% is projected for surveyed companies across various sectors and countries in the next five years. This percentage reflects the total expected job movement, including both newly created roles and those facing elimination, relative to the current workforce size. This finding underscores how even modest changes in net job numbers can obscure significant underlying shifts in a dynamic labour market.

The survey indicates the fastest-growing and declining jobs, with technology-related roles like AI and Machine Learning Specialists and Sustainability Specialists at the top of the growth list, while clerical roles such as Bank Tellers are expected to decline swiftly. These predictions are consistent with previous Future of Jobs reports, indicating ongoing structural shifts in labour markets driven by technological advancements and automation.

Overall, the analysis projects the creation of 69 million jobs and the destruction of 83 million, leading to a net contraction in global labour markets over the next five years (Future of Jobs Report, 2023). This calculation yields the estimated 23% structural labour-market churn for the covered global workforce.

A study conducted by Michael Webb (2020) revealed that out of 769 occupational descriptions examined, 740 showed a capability pair match with AI patent language. This suggests that at least one task in these occupations could potentially be influenced, augmented, or accomplished by AI. However, this does not necessarily imply that these tasks will be widely substituted, leading to job losses. The statistical reach of AI's capabilities highlights the technology's broad relevance and potential influence. AI is

what Bresnahan and Trajtenberg (1992) describe as a "general purpose technology" (GPT) – a technology that becomes widespread and spurs further innovations.

In examining industry patterns, Webb found that the highest technological advancements, including AI, are seen in primary and secondary sectors like manufacturing, agriculture, and resource extraction.

Industrial Sector	Employment (2017)	Standardized AI Exposure
Agriculture, Forestry, and Hunting	424,020	1.21
Utilities	552,270	0.73
Manufacturing	12,299,590	0.61
Mining, Quarrying, and Oil and Gas Extraction	591,130	0.50
Professional, Scientific, and Technical Services	8,850,270	0.47
Information	2,800,500	0.44
Management of Companies and Enterprises	2,326,030	0.30
Construction	6,903,100	0.28
Administrative and Support and Waste Management and Remediation Services	9,108,240	0.20
Finance and Insurance	5,857,390	0.19
Transportation and Warehousing	5,792,400	0.16
Public Administration	9,661,970	0.11
Wholesale Trade	5,845,600	0.06
Real Estate and Rental and Leasing	2,147,230	-0.07
Health Care and Social Assistance	20,208,050	-0.14
Educational Services	13,042,590	-0.17
Other Services (except Public Administration)	4,141,920	-0.17
Arts, Entertainment, and Recreation	2,370,170	-0.19
Retail Trade	16,009,150	-0.30
Accommodation and Food Services	13,617,690	-0.84
<b>All Industries</b>	<b>142,549,310</b>	<b>0.00</b>

Source: Brookings Analysis of Webb (2019)

Particularly, industries such as motor vehicle manufacturing and textiles show high average AI exposure scores. This can be attributed to the surge of AI applications for controlling robotics, detecting anomalies, recognizing patterns, and more.

For instance, apparel manufacturers are using AI to identify defects in garments efficiently, while car manufacturers employ algorithms to analyse sensor data for predictive maintenance and equipment failure detection.

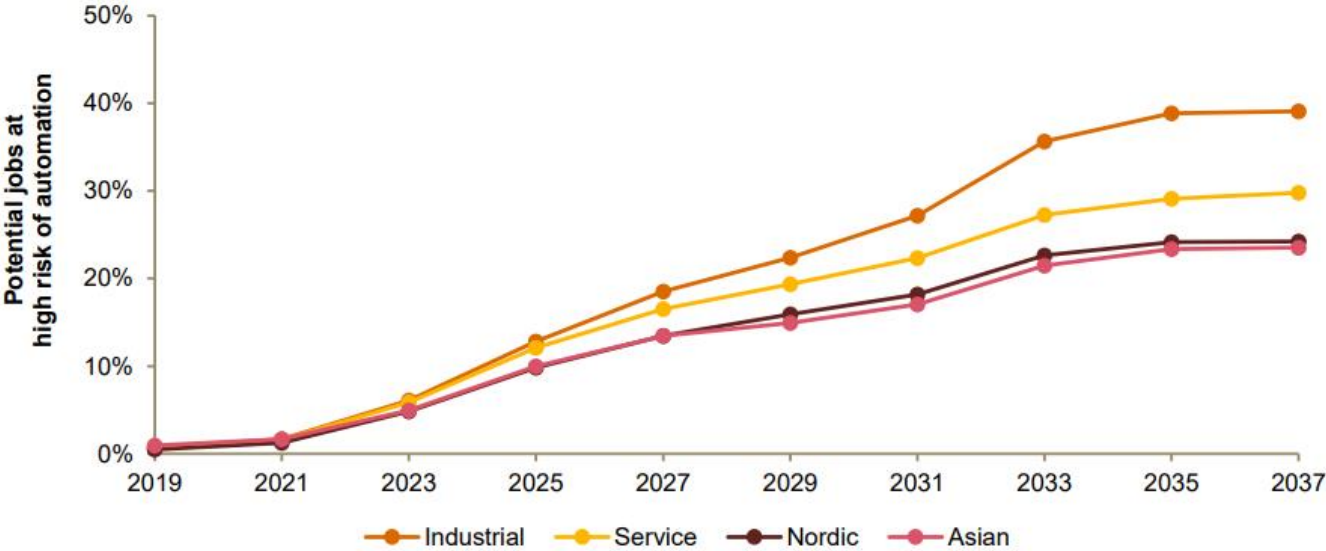
However, according to Webb, the narrative shifts when considering the service sector's exposure to AI. High-tech digital services, such as software publishing and computer system design, previously less susceptible to automation, now show significant AI exposure due to the pervasive use of AI tools in technology. Conversely, large, low-wage service industries, which were highly vulnerable to standard automation, are now among the least AI-exposed sectors, at least for now. Notably, accommodation, eating-drinking services, retail, health, and education industries appear relatively unaffected by AI.

## **2. Reskilling**

In today's rapidly evolving job marketplace, the advent of artificial intelligence (AI) and robotics has initiated a seismic shift, challenging the traditional paradigms of employment and workforce development. As these technologies continue to advance, they bring about both opportunities and disruptions, necessitating a critical focus on reskilling to ensure that workers remain competitive and relevant. The need for reskilling is driven by several factors, primarily the automation of routine tasks, the emergence of new job categories, and the evolving skill sets required in the digital age.

Firstly, automation has significantly impacted sectors traditionally reliant on human labour, such as manufacturing, logistics, and even certain aspects of the service industry. A study by McKinsey & Company suggests that by 2030, as many as 800 million jobs globally could be automated, displacing workers who perform routine tasks and underscoring the urgent need for reskilling initiatives (McKinsey Global Institute, 2017). This displacement is not merely a matter of job loss but a transformative shift in the nature of work itself, where cognitive abilities, problem-solving, and adaptability become paramount.

According to a report by PwC, 30% of jobs across 29 countries are at potential risk of automation by the mid-2030s, with the percentage varying significantly across sectors and countries (PwC, 2018).



Source: PIAAC data, PwC analysis

Furthermore, the integration of AI and robotics into the workforce is creating entirely new job categories that demand specialized skills, ranging from AI and machine learning specialists to robotics technicians and data analysts. The "Future of Jobs Report 2020" from the World Economic Forum underscores the two-fold effect of technological advancement: while it predicts the displacement of 85 million jobs due to changes in how tasks are divided between humans and machines, it also forecasts the creation of 97 million new jobs that better suit the evolving collaboration among humans, machines, and algorithms. This situation highlights the critical need for the workforce to develop new skills that match the demands of these forthcoming positions.

Moreover, the skill sets required in the digital age extend beyond technical capabilities to include soft skills such as critical thinking, creativity, and emotional intelligence. The demand for these skills is increasing as they complement the capabilities of AI and robotics, enabling humans to perform tasks that technology cannot easily replicate. According to LinkedIn's 2023 Workplace Learning Report, there is a growing emphasis on such soft skills across industries, reflecting a broader understanding that the human element remains irreplaceable even in a highly automated world.

Skills in digital marketing, cloud computing, and cybersecurity are becoming increasingly important, reflecting the shift towards a more interconnected and digital-first business environment. The OECD's Skills Outlook 2023 emphasizes the growing need for information and communication technology (ICT) skills, alongside strong social and emotional skills, to navigate the digital transformation successfully (OECD, 2023).

Reskilling, therefore, is not just a response to job displacement but a proactive strategy to empower the workforce with the skills necessary for the future. Governments, educational institutions, and corporations play critical roles in facilitating this transition. Initiatives

like the European Union's Digital Education Action Plan 2021-2027 aim to enhance digital literacy and competencies across the board (European Commission, 2020), while corporations like Amazon have pledged significant investments in upskilling programs for their employees, recognizing the long-term benefits of a skilled and adaptable workforce (Amazon, 2023).

Corporations also have a vested interest in developing their workforce. Initiatives like AT&T's Future Ready program demonstrate the potential of corporate-led reskilling efforts, offering employees access to education and career development opportunities to meet future job demands (CNBC, 2018).

Educational institutions are at the forefront of addressing the reskilling challenge, tasked with updating curricula and adopting pedagogical approaches that prioritize critical thinking, creativity, and adaptability. The rise of online learning platforms like Coursera and edX has democratized access to education, providing flexible learning options that align with the needs of a diverse and global student population. These platforms offer courses designed in collaboration with industry leaders, ensuring that the skills taught are directly applicable to the job market.

The socio-economic implications of widespread reskilling are profound. By equipping the workforce with the skills necessary to navigate the digital economy, we can mitigate the risks of unemployment and underemployment that come with technological disruption. Furthermore, reskilling can help bridge the digital divide, ensuring that all

segments of society have the opportunity to participate in and benefit from the growth of the digital economy.

However, reskilling initiatives must be inclusive and accessible to all, addressing barriers such as socio-economic status, age, and educational background. The World Bank's World Development Report 2019 argues for a human-centred approach to technology adoption, emphasizing the importance of investing in human capital to achieve sustainable development outcomes (World Bank, 2019).

The argument for reskilling is further bolstered by the potential economic benefits. The World Economic Forum (2024) suggests that providing employees with reskilling opportunities not only mitigates the risks associated with technological disruption but also contributes to economic growth by enhancing productivity and fostering innovation. With its Reskilling Revolution platform, launched in 2020 and still ongoing, more than 600,000 people are set to be reached globally by 2030.

Looking forward, the path to successfully navigating the reskilling imperative requires innovation, collaboration, and a commitment to lifelong learning. It involves creating ecosystems where businesses, governments, and educational institutions work together to facilitate the continuous development of the workforce. Moreover, it requires a mindset shift among individuals, encouraging a proactive approach to learning and career development.

In conclusion, the transition towards a digital economy, driven by the rapid advancement of AI and robotics, presents both challenges and opportunities for the global workforce.

The need for reskilling is clear, necessitating a multi-stakeholder approach that addresses the diverse needs of workers and leverages the strengths of governments, the private sector, and educational institutions. By embracing the reskilling imperative, we can ensure that the workforce of the future is equipped to thrive in an ever-changing job marketplace, fostering economic resilience and driving sustainable growth. Looking ahead, emphasizing reskilling will equip people for future job markets and also empower society to adeptly handle the challenges and intricacies of the digital era with assurance and skill.



## Chapter IV – Identity

In the forthcoming chapter, I delve into the profound and multifaceted impact of artificial intelligence (AI) and robotics on the future of employment and, by extension, on the very fabric of personal identity. Historically, work has been more than just a means to earn a living; it has been a cornerstone of human identity, imbuing individuals with a sense of purpose, belonging, and fulfilment. The symbiotic relationship between one's profession and personal identity is deeply ingrained, shaping societal structures, cultural norms, and individual self-esteem. However, as we stand on the cusp of unprecedented technological advancements, the prospect of a jobless future looms large, threatening to unravel this intrinsic connection.

The notion of work as central to personal identity is deeply ingrained in many cultures. Sociologist Max Weber's concept of the "Protestant work ethic" highlights the historical linkage between work, moral worth, and identity in Western societies (Weber, 1905). In a future where employment is no longer the norm, this linkage would be disrupted, prompting individuals to seek new sources of identity and self-definition. Philosophers and futurists, such as Yuval Noah Harari, have speculated that in such a future, people might find identity in pursuits unrelated to traditional employment, such as hobbies, volunteering, or lifelong learning (Harari, 2015). This could lead to a renaissance of personal exploration and creativity as individuals seek fulfilment in activities that reflect their interests and values rather than their economic contributions.

However, the transition to a jobless future raises concerns about the psychological and social impacts of disengaging from the workforce. Work provides not only financial

security but also structure, social connections, and a sense of purpose. The absence of these elements could lead to feelings of aimlessness, social isolation, and a crisis of identity for many. Psychologists have long recognized the importance of work in providing a sense of accomplishment and belonging. Without the routine and community that work often offers, individuals might struggle to find alternative sources of these psychological needs (Blustein, 2008).

The narrative of technological progress has always been accompanied by fears of displacement and obsolescence. Yet, from the First Industrial Revolution to the digital age, technological advancements have not eradicated work; rather, they have transformed it. These shifts have often led to enhanced productivity, the creation of new industries, and the emergence of novel professions, thereby integrating technology into the fabric of the workforce without displacing human participation. Each wave of innovation has been met with adaptation and resilience, as humans have continually found ways to coexist with, and even thrive alongside, the machines of their time.

Contrastingly, the current trajectory of AI and robotics heralds a paradigm shift of a different magnitude. Unlike previous technological revolutions that augmented human labour and opened new avenues for employment, the sophisticated capabilities of AI and robotics are poised to make a significant portion of human work obsolete. The automation of both cognitive and manual tasks that once required human intervention is not merely an enhancement of productivity; it represents a fundamental transformation in the nature of work itself. This shift raises existential questions about the role of work in human life and the future of personal identity in a world where the traditional avenues for achieving purpose and fulfilment may no longer exist.

As we explore this brave new world, we must confront the reality that the disappearance of work as we know it poses profound challenges to our sense of self and societal organization. The potential for a jobless future necessitates a reimagining of personal identity beyond the confines of occupation. This chapter will examine how, in the absence of conventional employment, individuals might find meaning and satisfaction. It will probe into alternative avenues for fulfilment and purpose, considering the role of creativity, learning, community involvement, and leisure in shaping our identities in a post-work era. In doing so, we aim to understand not just the implications of a jobless future, but also the opportunities it presents for redefining human purpose and identity in an age dominated by machines.

## **1. Unemployment and Identity**

As AI technology advances, the spectre of global unemployment looms large on the horizon. However, contrary to fears of economic stagnation and widespread deprivation, the emergence of AI-enabled automation could mark the beginning of a new era characterized by unprecedented prosperity. While the inevitable shift towards AI-driven automation will undoubtedly reshape the nature of work, it is unlikely to result in a decline in overall economic output. On the contrary, the widespread adoption of AI promises to revolutionize productivity, efficiency, and innovation, paving the way for greater levels of advancement and growth.

Furthermore, concerns regarding widespread deprivation arising from AI-induced unemployment can be alleviated by considering innovative policy solutions. Initiatives like Universal Basic Income (UBI) or similar social welfare programs offer a viable means

of ensuring that all individuals receive sufficient compensation to meet their basic needs, irrespective of their employment status. By decoupling income from traditional employment, these policies can establish a safety net that helps mitigate the disruptive effects of automation while empowering individuals to pursue meaningful endeavours beyond conventional job roles.

Given the likelihood that economic stagnation and material deprivation will not be significant challenges for future generations, it is crucial to explore the factors that could contribute to distress among unemployed individuals.

According to Jahoda (1981), a social psychologist, the anguish associated with unemployment arises from the involuntary loss of five hidden or latent benefits of having a job. These benefits include (i) a structured daily schedule; (ii) social interactions outside of the family; (iii) a sense of social purpose; (iv) social status and identity; and (v) regular engagement in activities. When individuals are unemployed, they do not simply enjoy their "leisure" time; instead, they often become disheartened, lose their self-esteem, struggle to maintain a sense of time, and feel marginalized (Jahoda 1981). This, in turn, negatively impacts their daily routines and diminishes their emotional well-being.

Unemployment also poses a threat to an individual's personal identity, leading to a decline in cognitive and judgmental well-being. For instance, societal norms emphasize the central role of work in one's life. A self-concept characterized by the absence of work implies a loss of purpose and fulfilment (McKee-Ryan et al., 2005). Additionally, job loss can disrupt an individual's ability to fulfil other personal roles, such as those of a parent,

spouse, homemaker, provider, or volunteer, among others. This challenge to perceived control over one's life becomes evident (Price et al., 1998). Furthermore, unemployment may erode self-esteem by altering an individual's network of friendships and social support, as the workplace often serves as a primary source of contact with friends. Ultimately, job loss is viewed as a loss of social identity, given the significant stigma attached to unemployment.

The severity of this loss of social identity, however, varies based on various internal and external factors, as well as an individual's coping strategies.

Stigmatization levels can differ between regions and over time. In cases of factory closures, workers typically do not feel personally responsible for their situation and attribute it to external forces beyond their control, expecting the wider society to do the same. This loss of identity may be less pronounced compared to situations where unemployment results from individual layoffs due to personal misconduct (Hamilton et al., 1993). Kelvin and Jarrett (1985) report that during periods of high unemployment affecting a broader segment of the population, stigmatization of the unemployed is less common.

In a future scenario where joblessness becomes the norm due to the profound impact of AI and robotics on employment, the observations of Kelvin and Jarrett regarding the relationship between the prevalence of unemployment and the stigmatization of the unemployed provide a valuable lens for understanding societal attitudes. As unemployment transitions from an individual or localized issue to a widespread societal condition, the stigma traditionally associated with being jobless is likely to diminish. This shift occurs because, as a larger segment of the population shares the experience of

unemployment, it becomes a commonality rather than an exception, fostering a collective understanding and empathy among individuals.

Coping strategies also play a role in how deeply individuals are affected by unemployment. Jahoda (1982) argues that the possibility of emphasizing alternative social roles, such as being a spouse or parent, can partially mitigate the negative impact of unemployment. Waters and Moore (2002) demonstrate that women have a broader range of non-employment-related roles and may redefine unemployment as a return to the traditional roles of homemaker and mother.

These results show that the impact of unemployment on individuals is far greater than what traditional economic theories, which often overlook mechanisms for coping outside the market, would indicate. According to the classical economic perspective, the main detriment of unemployment is the decrease in income, which is seen as the primary measure of unemployment's cost. When people lose their jobs, they not only face financial difficulties due to reduced access to consumption resources but are theoretically offset by the benefit of having more free time. Thus, under the assumption that laid-off individuals maintain their previous income levels, they might be considered better off since they would have the same financial resources plus additional leisure time. However, this viewpoint fails to account for the psychological effects of unemployment, such as the loss of social status or personal identity.

In contrast, research on life satisfaction presents compelling empirical evidence that the misery associated with unemployment extends far beyond material hardships. When asked about their overall life satisfaction, unemployed individuals consistently report significantly lower levels of satisfaction compared to their employed counterparts. This disparity in average life satisfaction persists even after accounting for various other

factors that may influence well-being, such as income, social connections, or health (Winkelmann & Winkelmann, 1995).

One's self-concept is significantly influenced by their integration into social groups and their awareness of this integration. According to the theory of "social identity" in social psychology, an individual's self-concept is not purely individualistic, nor solely derived from their connection to social groups. On one end of the spectrum, individuals may view themselves solely as unique individuals, without recognizing any association with social categories. This "personal identity" is based on an individual's attitudes, memories, behaviours, and emotions that distinguish them from others (Hornsey, 2008).

Conversely, on the other end of the spectrum, individuals may perceive themselves exclusively as members of specific social groups. These social groups define an individual's identity based on the defining characteristics of that group. Each social identity represents a specific group membership and prescribes how an individual should think, feel, and behave within that group (Hogg et al., 1995). The construction of an individual's identity fluctuates between personal and social identity, existing within this range.

The Social Categorization Theory, proposed by Turner (1958), explains that individuals create groups not just to meet common needs but also to define themselves through their affiliations with certain social categories. These categories are formed based on cognitive factors like common destiny, circumstances, or characteristics, which may have either positive or negative connotations.

Belonging to a group significantly impacts an individual's self-concept as the norms, values, beliefs, and ideologies of the group influence and shape an individual's psychology (Turner & Reynolds, 2010). An individual possesses multiple concepts of selfhood, with each identity operating at varying levels of inclusiveness. Social self-categorization occurs when perceived differences between individuals are smaller than the perceived differences between them and other people (out-groups) in a specific context.

In a future landscape characterized by widespread unemployment due to the advancements in AI and robotics, the conventional metrics for social categorization, such as job titles and professional status, would undergo a fundamental shift. As the traditional roles and occupations that once defined individuals' places within society become obsolete, the theory of social identity and social categorization would suggest that new bases for group formation and identity will emerge. In this jobless future, individuals would need to seek alternative dimensions for social categorization and self-definition, moving away from professional affiliations toward other aspects of social and personal identity.

One potential avenue for redefining social identity could be through shared interests, skills, or hobbies that transcend traditional employment roles. For example, communities might form around creative endeavours, environmental activism, technological innovation, or other pursuits that provide a sense of purpose and belonging. Similarly, social categories could evolve based on shared values and goals, such as sustainability, community service, or lifelong learning, which offer new criteria for inclusion and distinction.



Moreover, the emphasis on personal identity elements—such as individual attitudes, behaviours, and emotional experiences—might become more pronounced as people seek to distinguish themselves in the absence of professional markers.

In the context of work, individuals below retirement age and post-education consider themselves part of the broader social group of "working aged people." Sub-categories, like "employed," "unemployed," "engaged in domestic work," and "on leave," may exist on less inclusive intermediate levels. On a personal level, factors such as status within a firm, leadership roles, income, and benefits also contribute to an individual's self-concept.

When individuals are employed, their self-perception is primarily built on personal characteristics and achievements rather than their membership in the "working age" group. However, being laid off emphasizes the values and goals of the broader working-age group, causing individuals to shift towards identifying as "unemployed." This shift can dominate the social identity component and influence one's self-conceived personal identity. Coping strategies, such as redefining one's situation, can mitigate the impact, but if individuals feel unable to escape low-status group membership, they may experience a loss in self-worth and "identity value" (Turner, 1985).

The influence of joblessness on an individual's self-worth may also be contingent upon other facets of their personality. J.B. Rotter (1866), a prominent figure in the development of social learning theory, proposed that an individual's response to life experiences hinges on their perception of their ability to control their own destiny. In

Rotter's framework, "internalizers" are individuals who believe they have significant control over their destinies and, therefore, bear personal responsibility for the outcomes they encounter. They perceive their life's control as stemming from their own inner capabilities.

Conversely, many people consider themselves to be mere pawns of fate, subject to external forces over which they have little or no influence. These individuals perceive their locus of control as external rather than internal, and they believe they bear minimal to no responsibility for the events that unfold in their lives. Rotter referred to this latter group as "externalizers." Rotter's theory suggests that these beliefs about "locus of control" take root early in life through the process of socialization, eventually becoming a facet of an individual's personality and governing their responses to life's developments.

Brehm (1966) contends that when faced with a loss of control, individuals are more likely to respond with "reactance" rather than helplessness. Reactant individuals make efforts to regain control. Brehm later synthesized the theories of reactance and helplessness in collaborative work with Wortman (Wortman & Brehm, 1975). He argued that reactance occurs early, immediately following exposure to an uncontrollable event, while learned helplessness emerges as exposure to such events continues over time.

In a future where AI and robotics lead to widespread unemployment, individuals may initially experience reactance, as they confront the immediate loss of their jobs and the associated aspects of their personal identity tied to their professions. This initial reaction stems from the abrupt disruption of their ability to control their employment status and, by extension, a portion of their identity that is grounded in their work life. However, as this exposure to uncontrollable joblessness extends over time without

effective intervention or the ability to regain employment, individuals may transition into a state of learned helplessness. This state is marked by a diminishing sense of personal agency and a growing belief that efforts to find new employment or to adapt to the changing job landscape are futile. The sustained belief in their powerlessness to effect change could lead to a profound reshaping of their personal identity, potentially eroding self-esteem, motivation, and the perceived value they contribute to society.

The challenge, therefore, lies in developing strategies that mitigate these psychological impacts by fostering resilience, adaptability, and new forms of engagement and meaning for individuals in a rapidly evolving job market dominated by AI and robotics.

## **2. New Hierarchy of Needs**

Maslow's hierarchy of needs, often depicted as a pyramid, is a seminal psychological theory that outlines the stages of human motivation and the sequential fulfilment of human needs.

Proposed by Abraham Maslow in the mid-20th century in his seminal work, "Motivation and Personality" (1954), this framework posits that human beings are motivated by a hierarchy of needs, starting from the most basic physiological necessities to the higher-level aspirations for self-actualization.

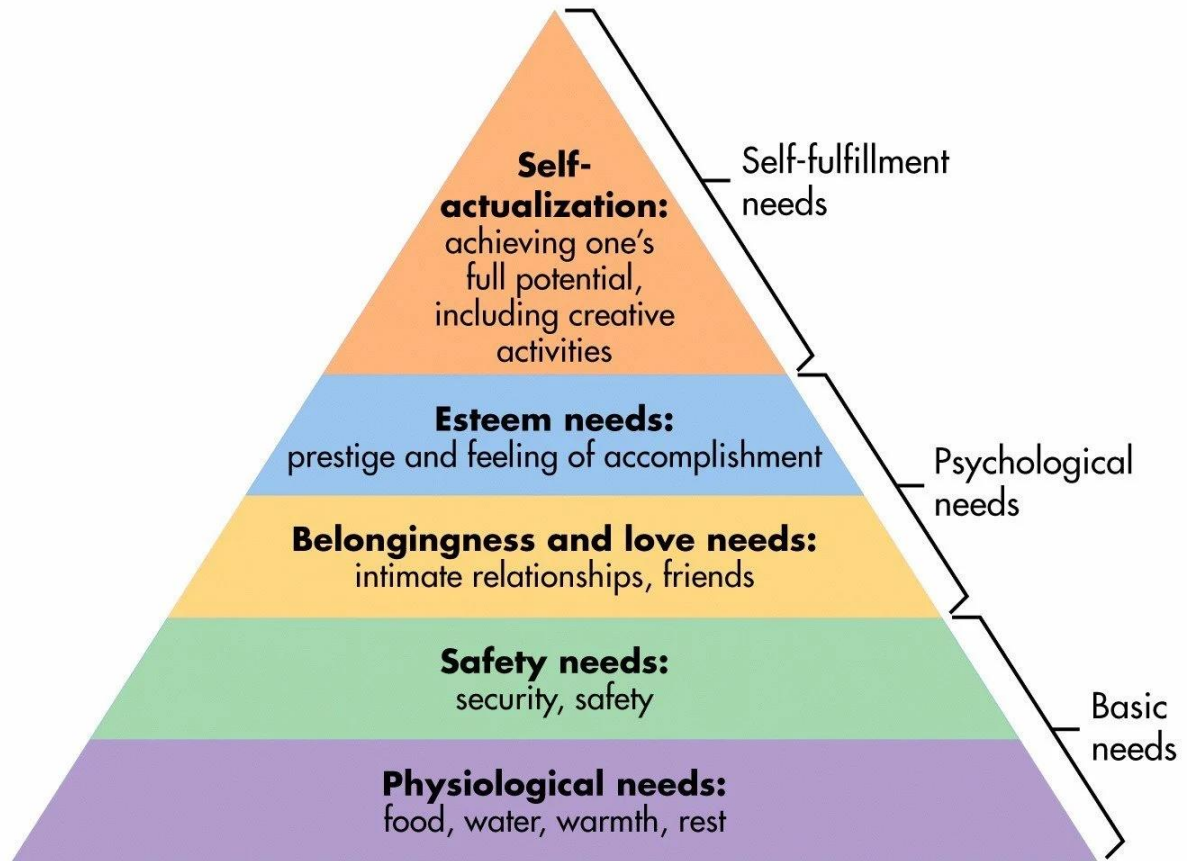
According to Maslow, the individual is viewed as an integrated and organic whole. A comprehensive theory of motivation should encompass the exploration of ultimate human needs and goals that are relevant to the entirety of human existence. Maslow argues that despite the plethora of conscious desires, the fundamental desires of human beings are fundamentally similar. His psychology is grounded in the notion of a shared

humanity that transcends geographical, racial, gender, social, ethnic, and religious boundaries. This foundational premise is deeply rooted in the essentialist philosophical tradition of Western thought, which traces its origins back to pre-Socratic philosophy and endures into the modern era. Maslow posits that human beings possess a higher nature that can be discerned and cultivated in everyday experiences.

Central to Maslow's theory of motivation is the notion that human needs are hierarchical in nature—unfulfilled lower needs dominate an individual's thoughts, actions, and existence until they are satisfied. Once a lower need is met, the next level of needs emerges to be addressed or expressed in daily life. The fulfilment of all basic or deficiency needs—so named because their absence serves as a strong motivator—paves the way for the pursuit of higher needs associated with self-actualization. Indeed, the satisfaction of basic needs is deemed a prerequisite for such pursuit.

In a concise manner, Maslow's theory delineates five levels of human needs.

The first level pertains to physiological needs such as food, air, and water. Safety needs constitute the second level, encompassing aspects like security, stability, and protection from fear, anxiety, and chaos. The third level comprises the need for belonging and love, which involves the exchange of affection and the profound impact of lacking friends, a partner, or family. Moving up the hierarchy, the fourth level denotes the need for esteem, which is gratified through mastery of one's environment and societal recognition. Finally, the fifth level, self-actualization, signifies the pursuit of realizing one's unique potential in life, leading to experiences of transcendence and peak moments.



In a world where digital technology touches every facet of our lives, though, Maslow's theory may no longer capture the full spectrum of human needs in the 21st century. In today's digital age, it's crucial to re-evaluate traditional frameworks that define human needs and motivations. One such framework is Maslow's hierarchy of needs, a pyramid progressing from basic physiological necessities to the pinnacle of self-actualization. But with the rapid advancements in technology and machines set to take over the workforce, how will this hierarchy evolve?

In a future dominated by AI and robotics, where traditional job roles and the associated social status are significantly altered or diminished, the essence of Maslow's pyramid could evolve to emphasize the innate human needs for connection, creativity, self-

expression, and personal growth as fundamental, rather than auxiliary, to our sense of fulfilment and purpose. This shift would necessitate a re-evaluation of the hierarchy's structure to accommodate the changing landscape of human aspirations and societal norms.

Firstly, the physiological and safety needs at the base of the pyramid, traditionally met through employment and economic means, could be satisfied through alternative societal structures, such as universal basic income or community-supported initiatives, ensuring that individuals have access to basic necessities and security without traditional employment.

Secondly, the need for belonging and love, typically fostered through workplace interactions and social status derived from job roles, would require new avenues for connection. Community engagement, shared creative endeavours, and digital platforms could become primary venues for fulfilling these social needs, emphasizing the quality and depth of relationships over professional networks.

As we move up the pyramid, the esteem needs, previously tied to career achievements and recognition, could shift towards valuing personal development, mastery of new skills for personal satisfaction, and contributions to community well-being. This reimagined esteem would derive less from conventional success and more from the impact on and recognition of a close-knit community or collective achievements in non-work-related pursuits.

At the pinnacle of the pyramid, self-actualization and the newly introduced concept of transcendence take on a broader, more inclusive meaning. In a jobless future, self-actualization could manifest through the pursuit of lifelong learning, artistic expression,

environmental stewardship, and other forms of personal and collective growth that contribute to a flourishing human spirit. Transcendence, then, becomes the ultimate expression of human potential, where individuals seek to surpass personal limitations and contribute to something greater than themselves, be it through spiritual exploration, deepening social bonds, or enhancing the well-being of the broader ecosystem.

For humans to fulfil all their needs in such a future, society must foster environments that encourage exploration, creativity, and community. Educational systems would need to prioritize emotional intelligence, social skills, and critical thinking over traditional job-oriented skills. Policies must ensure equitable access to resources, enabling all individuals to pursue their aspirations without the constraints of economic insecurity. Technologies, rather than displacing human roles, should be leveraged to augment human experiences and capabilities, facilitating deeper connections with oneself, with others, and with the planet.

This redefined Maslow's hierarchy in a jobless future not only addresses the challenges of technological displacement but also presents an opportunity to cultivate a society that values human potential and well-being above economic productivity. It envisages a future where fulfilment stems from the richness of human experience, the depth of interpersonal relationships, and the pursuit of a purpose that transcends traditional measures of success.

## Chapter V – Redefining Tomorrow

In the coming decades, the relentless march of progress in artificial intelligence and robotics is poised to reshape the very fabric of our society, propelling us into a future where the traditional concept of employment may become obsolete. This chapter delves into the profound social implications of such a jobless future, compelling us to reimagine our collective approach to life, work, and prosperity. As we stand on the brink of this unprecedented societal transformation, three critical areas emerge as focal points for adaptation and redefinition: the concept of leisure, the structure of our educational systems, and the economic framework supporting individual and collective well-being.

The evolution of leisure in a world where work is no longer a necessity represents a fundamental shift in human experience. We explore how the abundance of free time could lead to a renaissance of creativity and personal development or, conversely, a crisis of purpose and identity. This new paradigm challenges us to redefine leisure not as a mere escape from the rigors of work but as a vibrant space for self-discovery, community engagement, and the pursuit of passions that bring fulfilment and joy.

Education, too, must undergo a radical transformation to prepare future generations for a landscape devoid of traditional employment. The focus of this chapter shifts to how educational systems can move away from a curriculum centred on job-specific skills and towards fostering individual potential, creativity, and the ability to adapt to a constantly changing world. We argue for a paradigm that celebrates curiosity, encourages



innovative thinking, and equips individuals with the tools to navigate a future where the definition of success is deeply personal and ever evolving.

Finally, the economic underpinnings of a society without jobs necessitate a re-evaluation of how we ensure that every human being can thrive. The concept of a Universal Basic Income (UBI) emerges as a pivotal solution, promising a safety net that supports not just the basic necessities of life but also provides the freedom to explore, create, and contribute to society in meaningful ways. This chapter examines the potential impacts of UBI on societal structures, individual motivation, and the collective pursuit of a fulfilling life in a world where financial stability is uncoupled from traditional employment.

As we journey through these transformative ideas, this chapter aims to illuminate the opportunities it presents for societal growth, personal development, and the reimagining of human potential. The road ahead is uncharted, but by confronting these implications head-on, we can navigate towards a future where technology liberates rather than confines, enriching the tapestry of human experience in ways we have yet to fully comprehend.

## **1. Redefining Leisure**

In the possibility of a machine-run, fully automated economy, how will we invest our time? A fundamental question to consider is the very nature of 'work' and its historical and cultural significance. 'Work,' as understood today as non-domestic, paid, and institutionalized employment, is a relatively recent concept, specific to the industrialized world and dating back to the 19th and 20th centuries (Komlosy, 2017). The perception

of work has evolved significantly, from the ancient Greeks' disdain for labour, the Romans' division of work, the Judeo-Christian ambivalence towards work, to medieval philosophy's distinction between action and contemplation, and Protestantism's elevation of work to a spiritual level.

A consistent aspect of work throughout history is the division of labour among different social groups (Komlosy, 2017). The future of this division is uncertain, with as many potential outcomes as there have been historical views on work.

Two considerations are crucial for the future of work. First, regardless of social arrangements or technological advancements, there will always be necessary activities for meaningful individual and societal existence. These activities demand a social division of labour, from childcare to waste management. Post-workerist theories often overlook these essential tasks (Connolly, 1974). Second, understanding the shift in 'work' involves examining associated concepts, which are value-driven and often contentious (Connolly). The current focus on 'efficiency' in a capitalist context has introduced terms like 'task' and 'gig' into the work lexicon. However, envisioning a post-scarcity society with different values like dignity and solidarity could redefine 'work' around concepts like 'meaning,' 'creativity,' and 'service.' The future of work, therefore, could be shaped by social debate and collective efforts beyond current capitalistic definitions.

In a jobless future, where the economy is predominantly machine-run, the redefinition of leisure becomes a pivotal aspect of human experience, presenting both profound challenges and unparalleled opportunities.

Historically, leisure has been perceived as time spent outside the obligations of work, a space for relaxation, personal interests, and voluntary activities. However, in a future devoid of traditional employment due to technological advancements, the abundance of free time challenges the conventional understanding of leisure. This scenario necessitates a broader conceptualization of leisure, not merely as a time for rest or escapism but as a vital component of life that contributes to personal growth, social connections, and cultural development. The work of sociologist Juliet Schor suggests that as work hours decrease, the quality of leisure improves, offering opportunities for creativity, learning, and social engagement (Schor, 1991). In a jobless future, this concept extends further, positioning leisure as the primary domain through which individuals find meaning, contribute to society, and express their identities.

The redefinition of leisure in this context involves a shift towards activities that foster a sense of purpose and fulfilment. With AI and robotics handling the necessities of production and service, human endeavours could focus on creativity, innovation, and exploration. This includes artistic expression, scientific research, and community building—activities that not only provide personal satisfaction but also contribute to the advancement of knowledge and culture. In this scenario, education and lifelong learning play a crucial role, not as means to employment, but as ends in themselves, enabling individuals to explore diverse interests and passions. The rise of online learning platforms, such as Coursera and edX, exemplifies the potential for technology to facilitate access to knowledge and skills across a wide range of subjects, supporting the idea of learning as a key leisure activity.

Furthermore, the concept of leisure in a jobless future emphasizes the importance of social connections and community engagement. With the potential for isolation in a

world where traditional work environments no longer serve as primary social spaces, leisure activities become crucial venues for building relationships and fostering community cohesion. Freed from the confines of work, individuals will have more time to build and nurture relationships, participate in community projects, and engage in social activities that strengthen the bonds of society. This increased focus on community will foster a sense of belonging and collective well-being, counteracting the isolation that can accompany technological advancement. Research by Putnam in "Bowling Alone" highlights the significance of social networks and community involvement for individual and societal well-being, suggesting that leisure can play a vital role in rebuilding social capital (Putnam, 2000).

Additionally, the redefinition of leisure considers the balance between digital and physical experiences. In a technologically saturated society, leisure activities may increasingly involve virtual realities, digital platforms, and simulated experiences. While these technologies offer new realms of exploration and interaction, there is also a growing recognition of the value of nature, physical activity, and tangible experiences for human health and happiness. The concept of "digital detoxing" and the emphasis on outdoor activities and nature engagement reflect a desire for balance, suggesting that leisure in a jobless future will encompass both advanced technological experiences and a reconnection with the physical world (Harris, 2017).

The value we assign to activities will shift dramatically. In a world where the necessity of labour is diminished, activities will be valued not for their economic output but for their contribution to personal growth and societal enrichment. Creative endeavours will be celebrated for their ability to inspire and provoke thought, while volunteerism and

philanthropy will be recognized for their role in addressing societal needs and fostering a culture of empathy and altruism.

Environmental stewardship and sustainability will emerge as vital areas of focus. With more time to reflect on the impact of human activity on the planet, individuals will be more inclined to engage in practices that protect and preserve the natural world. This could lead to a resurgence of interest in gardening, permaculture, and other sustainable practices that connect humans with their environment in meaningful ways.

Furthermore, the concept of success will be radically redefined. No longer measured by professional achievements or financial status, success will be gauged by personal fulfilment, the quality of one's relationships, and the contribution to the greater good. This paradigm shift will encourage a more holistic approach to life, where physical well-being, mental health, and spiritual growth are interwoven and equally valued.

As we navigate this transition, the redefinition of leisure will require a collective reimagining of societal values and priorities. It will challenge us to confront deeply ingrained notions of productivity and purpose, and to embrace a future where the richness of human experience is not bound by the constraints of work. In this jobless future, the possibilities for how humans invest their time are limited only by the imagination, opening up a new era of human potential where what we give value to is fundamentally transformed.

## 2. Redefining Education

In a jobless future where the economy is machine-run, the redefinition of education emerges as a cornerstone of societal evolution. With the obsolescence of traditional employment, the purpose and structure of education will undergo a profound transformation, shifting from a model designed to equip individuals with skills for the job market to one focused on unlocking and nurturing each person's unique potential. This new paradigm of education will prioritize the development of intrinsic qualities—creativity, critical thinking, emotional intelligence, and adaptability—over the acquisition of job-specific skills that are increasingly rendered redundant by technological advancements.

As we have seen in Chapter III, a report by the World Economic Forum predicts that skills such as complex problem-solving, critical thinking, and creativity will be in high demand in the future, even as the need for manual and clerical skills declines (World Economic Forum, 2023). This suggests that even in a machine-dominated economy, human cognitive and emotional capabilities will retain their value.

In this reimagined educational landscape, the central focus will be on discovering and fostering each human's own potential. The concept of education would need to embrace a holistic approach to personal development. In the absence of traditional employment, the purpose of learning would shift towards self-actualization, community involvement, and the pursuit of knowledge for its own sake. This vision aligns with the theories of educational philosophers like John Dewey, who advocated for education as a means of fostering individual growth and social responsibility, rather than mere vocational training (Dewey, 1938). In this future scenario, schools could become centres for exploring human potential, offering flexible and diverse curricula, designed to encourage

students to explore a wide range of disciplines—arts, sciences, humanities, and beyond—without the pressure of conforming to predefined career paths. Education will become a journey of self-exploration and personal development, guided by the interests, passions, and innate talents of the individual. This holistic approach will not only cater to intellectual growth but also to emotional and social development, preparing individuals to lead fulfilling lives and contribute to society in meaningful ways.

The teaching of emotional intelligence and interpersonal skills would also take on new significance. As machines take over the analytical and routine tasks, human interactions and the management of emotional complexities will become more crucial. Educational programs will likely emphasize empathy, communication, and collaboration, preparing individuals to navigate a world where social cohesion and emotional well-being are paramount. This focus is supported by research from the Yale Center for Emotional Intelligence, which highlights the importance of emotional skills for personal well-being and effective leadership (Brackett & Cipriano, 2020).

The role of educators will transform significantly in this context. Teachers will become mentors and facilitators of learning rather than dispensers of knowledge. They will guide students in their explorations, helping them to identify their strengths and interests, and encouraging them to pursue their passions. The relationship between teacher and student will be more collaborative, with a focus on fostering a love of learning and an inquisitive mindset. The school system itself will need to be reorganized to accommodate this shift in focus. Traditional age-based grade levels and standardized testing may give way to more personalized and adaptive forms of assessment that recognize individual growth and achievement. Classrooms will become more dynamic

and interactive spaces, designed to stimulate curiosity, and engage students in project-based learning, problem-solving exercises, and collaborative projects that reflect real-world challenges and interests.

Moreover, technology will play a pivotal role in facilitating personalized learning experiences. Adaptive learning platforms, powered by artificial intelligence, can offer customized educational content that evolves in response to the learner's progress and changing interests. This technology can also help identify each student's unique learning style, tailoring the educational approach to maximize engagement and effectiveness.

Additionally, the curriculum in this future scenario would likely include studies focused on understanding and overseeing AI and robotics. As these technologies play a central role in society, a baseline knowledge of their operation, ethics, and implications would be crucial for all citizens. This would ensure a well-informed populace capable of making ethical decisions about the use and development of technology. Ethics and philosophy would become more central to the curriculum, as questions about the meaning of life, the distribution of wealth generated by machines, and the governance of a predominantly automated society become increasingly relevant.

Beyond the confines of traditional schools, education in a jobless future will extend into the community and the wider world. Lifelong learning will become the norm, with community centres, online platforms, and informal learning groups providing opportunities for continuous education and personal growth. This broader ecosystem of learning will support individuals at all stages of life, enabling them to adapt to the



evolving landscape of a machine-run economy and to pursue their interests and passions without constraint.

This perspective is echoed by the OECD's Learning Framework 2030, which emphasizes the importance of developing learners' agency and a lifelong learning attitude to navigate the complexities of the 21st century (OECD, 2018).

In essence, the redefinition of education in a jobless future is not merely an adjustment of curriculum or teaching methods but a fundamental shift in how we conceive of learning and human development. This includes an emphasis on creativity, emotional intelligence, ethics, lifelong learning, and an understanding of technology. Such an education system would not only prepare individuals to navigate a world where human work is obsolete but also ensure that society as a whole can thrive in harmony with the advanced technologies that define this future landscape.

By focusing on unlocking each individual's potential, education can empower people to lead meaningful, enriched lives, fostering a society that values creativity, innovation, and personal fulfilment above economic utility. The challenge lies in pre-emptively adapting our educational philosophies and systems to anticipate these changes, ensuring that humanity remains at the forefront of progress in an increasingly automated world.

### **3. Redefining Income**

In a jobless future dominated by a machine-run economy, the concept of income undergoes a fundamental transformation, necessitating a radical rethinking of how

wealth is distributed and what it means to live a prosperous life. The conventional linkage between work and income, a bedrock of current economic systems, becomes obsolete, paving the way for innovative solutions to ensure that the benefits of technological advancements are equitably shared.

The most prominent and compelling of these solutions is the introduction of a Universal Basic Income (UBI), envisaged not as a mere financial safety net but as a fundamental human right, reflecting a bold reimagining of societal values and priorities.

The idea of a Basic Income Guarantee (BIG) has been circulating for a long time. Thomas Paine, an American revolutionary, proposed in 1795 a Citizen's Dividend for every U.S. citizen as compensation for the loss of natural inheritance due to the establishment of land ownership (King & Marangos, 2006). Napoleon Bonaparte also recognized that every person has a birthright to a portion of the Earth's resources sufficient for their survival. Martin Luther King Jr., in his 1967 speech "Where Do We Go From Here," expressed his support for a direct approach to eradicating poverty through a widely debated solution at the time: the guaranteed income.

Universal Basic Income represents a profound shift in the social contract, positing that all individuals are entitled to a share of the wealth generated by society, irrespective of their employment status or contribution to the economy in traditional terms. This unconditional financial support promises to liberate individuals from the existential threat of poverty and the constraints of job scarcity, offering a stable foundation upon which people can build fulfilling lives. In this new paradigm, income is decoupled from labour, acknowledging the reality that the vast wealth generated by AI and robotic technologies is the result of collective human ingenuity and, as such, should benefit all of humanity.

Finland already experimented with Universal Basic Income (UBI) as a strategy to reform its social security system to better align with evolving labour market conditions. Starting in January 2017, a randomly selected group of 2,000 jobless individuals aged 22 to 58 began receiving a consistent, tax-free payment of €560 per month, regardless of their living situation (Allas et al., 2020).

But addressing the challenges AI poses to the state's responsiveness is complex, primarily because the exact nature of AI's disruption remains uncertain. Should AI lead to widespread joblessness, enhancing unemployment benefits could seem like an intuitive solution. Conversely, if wages decrease while employment rates stay stable, benefits for those in work could be considered.

However, these solutions have their drawbacks. Navigating the bureaucracy of contemporary welfare systems is often a cumbersome and demeaning process, leading about a quarter of those eligible to abandon their attempts to access benefits. This issue of failing to reach the intended beneficiaries is particularly prevalent in programs that enforce income eligibility requirements under the guise of 'targeting': in contrast, unconditional cash initiatives like the Child Benefit achieve near-perfect delivery rates, as reported by the GOV.UK (2022).

Thus, unconditional cash payments, or specifically, a Universal Basic Income (UBI), might be the most effective method to maintain income stability, regardless of AI's impact. Critics argue against UBI due to the anticipated high costs and the significant tax increases required for funding.

Funding these cash payments could involve broad tax increases on income, although this might negatively affect labour supply. Alternative funding sources, such as a 1% land

value tax or a carbon tax, could generate sufficient revenue while also addressing other societal goals. Each option has its political hurdles, such as the impact on asset-rich, cash-poor older individuals and the regressive nature of consumption taxes. Yet, redistributing tax revenue through UBI typically results in a net reduction in poverty, as cash transfers are more progressive than the regressive impact of the taxes funding them.

Alternatively, carbon prices could raise enough revenue to fund cash transfers.

Distributing the revenue as an equal dividend would lower poverty rates for children, adults, and seniors alike.

Both of these have their own political challenges: the asset-rich cash-poor older generation is a significant bloc, and carbon taxes, like other consumption taxes, have a more regressive impact than income taxes when measured as a percentage of income. But in all of these tax bases, cash is more progressive than the tax base is regressive: a tax funded UBI nearly always reduces poverty.

There are numerous strategies proposed for financing a Basic Income Guarantee (BIG), ranging from reallocating tax revenues, reducing the workweek, to phasing out certain social security benefits like unemployment insurance. Mark Walker (2014), a futurist, suggests implementing a 14% VAT (value-added tax) on all goods and services could fund a basic income, potentially providing \$10,000 to each person in the U.S., though this amount might not be sufficient. The Equal Life Foundation, in its Living Income Guaranteed Proposal (2013), detailed steps for practical implementation. It advocates for significant reforms in socio-economic and political frameworks, including

nationalizing resources, implementing social dividends, reallocating military budgets, adjusting tax policies, maintaining a reasonable minimum wage, ensuring sustainable pricing, embracing automation, enhancing transparency, and digitalizing currency.

The implications of such a radical overhaul are far-reaching. By guaranteeing a baseline income for every person, UBI has the potential to eradicate extreme poverty and significantly reduce inequality, both within nations and globally. With the basic needs of every individual met, people would be free to pursue education, engage in creative endeavours, start new businesses, or contribute to their communities, driven by passion and interest rather than the necessity to earn a living. This could lead to a renaissance of innovation, creativity, and entrepreneurship, fuelled by a society that values and supports the diverse talents and aspirations of its members.

Moreover, the implementation of UBI could have profound effects on global challenges such as world hunger and poverty. By redistributing the wealth generated by a highly efficient, technology-driven economy, resources could be allocated more effectively to ensure that everyone, regardless of their geographical location or socio-economic status, has access to food, clean water, healthcare, and education. This could foster a more stable, peaceful, and cooperative international community, united by a shared commitment to human dignity and well-being.

The transition to a UBI-driven economy would require careful planning and global cooperation to address potential challenges, including inflation, the financing of such a program, and the impact on labour markets. However, the benefits of a system that promotes economic security, reduces inequality, and offers a platform for individual and

societal flourishing are compelling. As we stand on the brink of a new era, the adoption of Universal Basic Income presents a visionary path toward worldwide prosperity, signalling a bold commitment to the belief that the advancements of the future should enhance the lives of every person on the planet.

## Conclusion

The exploration of the advancements in artificial intelligence and robotics within this thesis has illuminated a profound shift towards a future where traditional employment may no longer serve as the primary anchor for human identity. As we stand on the brink of this transformation, it becomes imperative to reconceptualize not only our relationship with work but also the very fabric of our societal constructs—including education, leisure, and income.

The advent of technologies capable of performing tasks once exclusive to humans suggests an impending renaissance in which the notion of self-worth will eclipse net worth in societal value. This shift necessitates a radical re-evaluation of education, tailoring it not just towards job preparation but towards fostering adaptability, creativity, and lifelong learning. Leisure must be redefined from a mere respite from work to a vital component of a fulfilling life. Moreover, the potential for a jobless future underscores the urgency of devising sustainable economic models, such as universal basic income, to ensure stability and dignity for all.

As we look ahead, the idea of an economy without traditional employment is both intriguing and challenging. Successfully harnessing automation could lead us to a new age of wealth and significantly more free time. This would allow us to move beyond lowly and degrading tasks to pursue what genuinely interests us.

The notion that motivation for work is tied to monetary compensation is a relatively modern concept, and the stigma against those who don't earn a wage is even more recent. For women, this shift has happened within just the last two generations. Historically, individuals like aristocrats have been driven by the pursuit of prestige,

power, or the sheer joy derived from activities such as scientific research. Transitioning to a society where self-worth is derived from engaging in voluntary pursuits, rather than earning a wage, is likely to take at least a generation. However, some individuals are already embracing this new paradigm.

As we embark on this journey, our collective challenge will be to create a world where technology liberates us to pursue endeavours that reflect our deepest values and aspirations, ensuring that in the pursuit of progress, we do not lose sight of what makes us inherently human. This thesis posits that by embracing these changes, we can forge a future where the measure of a life well-lived is not the accumulation of wealth, but the richness of one's contributions to a more equitable, compassionate, and interconnected world.





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