

# STUDY GUIDE

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# European Parliament

1. Establishing the Social Climate Fund
2. Harmonized Rules on Artificial Intelligence



# European Parliament Study Guide

European Union Simulation in Ankara (EUROsimA) 2022  
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## Letter from the Secretary General

My name is Batuhan Bera Karagüzel and I am a senior student of International Relations at the Middle East Technical University. As the Secretary-General of the EUROsimA 2022, it is my utmost pleasure to welcome you to the 18th annual session of our conference on behalf of our Director-General Ms. Beyza Güler, and the entire EUROsimA 2022 team.

Two of the foundational bodies of the European Union; Council of the European Union and the European Parliament are often referred to as the co-legislators of the EU. This is because the Council and the Parliament share the responsibility of “law-making” for the Union. Within the scope of EU competences, all regulations and legislations passed through the process called the “Ordinary Legislative Procedure ” that requires a rigorous debate and collaboration between the Parliament and the Council.

In EUROsimA 2022, we will simulate the Council of the European Union and the European Parliament in accordance with the “Ordinary Legislative Procedure”, hence the delegates of both of these committees will have an opportunity to understand a crucial aspect of the European Union’s decision making process, as they will focus on simplified versions of two EU legislative proposals regarding Social Climate Fund and Artificial Intelligence Act.

As you can imagine, designing a simulation for the European Parliament is not an easy task, but the Academic team members responsible for the Parliament did an exceptional job preparing this committee. Without the Under-Secretary-General Mr. Sinan Akyol’s experience and academic skills, preparation of such a complex committee structure would have been an impossible task. Academic Assistant Ms. Eylül Temizkan quickly adapted to her ever-changing role throughout this year and displayed an exemplary performance. I feel extremely lucky to have them as my team members.

I highly encourage participants of the European Parliament to carefully examine this study guide in order to fully grasp the legislative proposals that will be the basis of debate during the conference.

Kindest Regards,

Batuhan Bera Karagüzel Secretary-General of EUROsimA 2022

## Letter from the Under-Secretary-General

Most distinguished participants,

I am Sinan Akyol, a third year Political Science and Public Administration student at Middle East Technical University. It was an honor to be part of the preparation of a study guide to be used in the Ordinary Legislative Procedure in this exciting event, and a delight to make a contribution to one of the most prestigious conferences in Turkey. I, unfortunately, will not be able to attend the conference because of its concurrence with my Erasmus program; yet I will be more than happy to assist all those who contact me with regards to the content of the study guide.

The co-legislators of the European Union, namely the European Parliament and the Council of the EU, will be discussing vital agenda items in EUROsimA'22. One of these items, the Proposal for a Regulation of the European Parliament and of the Council establishing a Social Climate Fund, is a response to the social impact of the green transition. The effort to establish a working Social Climate Fund is essential for vulnerable households across the Union. The other agenda item is about one of the most drastic socio-economic transitions awaiting the EU: that of Artificial Intelligence. In order to cope with the life-changing impact of this revolution, policy makers will have to take into consideration numerous strategies to increase the Union's capacity to adapt. However, the debate leading up to EU's response will undoubtedly have its sources of contention. Co-legislators will have to embark on a difficult task of consensus building to overcome their differences and to come up with creative and inclusive solutions to amend the Proposal.

I would like to express my admiration for Mr. Batuhan Bera Karagüzel. His genuine interest in making this event an intellectually stimulating one deserves sincere appreciation, and I am sure that this conference will, once gain, be the setting of many fruitful and exciting debates. In addition to my admiration, I convey my gratitude for his acceptance of my flexible nature regarding deadlines, not everyone would be as patient as him. I would also like to praise the excellent work done by Eylül Temizkan who has added immense amounts of quality to our work and has considerably lessened the burden on my shoulders. Lastly, I applaud our unimaginably dedicated and hard working organization team led by our Director General, Ms.Fatma Beyza Güler.

I wish everyone an unforgettable, stimulating experience and I encourage all participants to contact me if they have any questions.

Sincerely, Sinan Akyol

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## **I. Introduction to AI**

AI is using technology to automate tasks that “normally require human intelligence.”<sup>i</sup> And the technology of AI is often focused on automating specific types of tasks: those that are thought to involve intelligence when people perform them.<sup>ii</sup>

For instance, when humans play chess, they employ a range of cognitive capabilities, including reasoning, strategizing, planning, and decision-making<sup>iii</sup> and the technology of AI allows us to simulate the process of cognitive thinking in computers. In short, when engineers automate an activity that requires cognitive activity when performed by humans, it is common to describe this as an application of AI.<sup>iv</sup>

However, how human an AI is debated upon fiercely and there are tests that are run to determine the human-likeness of an AI entity such as: The Turing Test, The Cognitive Modeling Approach, The Law of Thought Approach and The Rational Agent Approach, which will be detailed later.<sup>v</sup> When the topic of Humanity is in the debate, the first concepts to come to mind are the rights of a human and morality, which can be summed up under the topic of ethics. When approaching the possibilities of AI theoretically, it can be assumed that because of machine learning a particular AI may be able to reach a point where it simulates the human learning process, thus opening the discussion of Humanization of AI. For instance, leading technology companies are building self-driving cars, which will benefit the elderly and disabled people by reducing driver error; however, in an emergency, should a self-driving car prioritize the lives of the passengers or the lives of pedestrians?<sup>vi</sup> In addition to questions that are under the ethics of AI, regulation and usage of AI in Law is also an important topic that is being actively discussed and researched in academia. However, artificial intelligence is already an irreplaceable part of the society, it can be found in consumer appliances, the Internet of Things, Air Traffic Control Systems, healthcare systems and many more fields.<sup>vii</sup> However, as technology advances, the law must advance with respect to the changes in the capabilities of technology. This is particularly the case with artificial intelligence.<sup>viii</sup> AI's role in society will need to be regulated as will its relationship with humans; however, there is no major regulatory scheme for AI exists, even though AI is involved in almost all aspects of society.<sup>ix</sup>

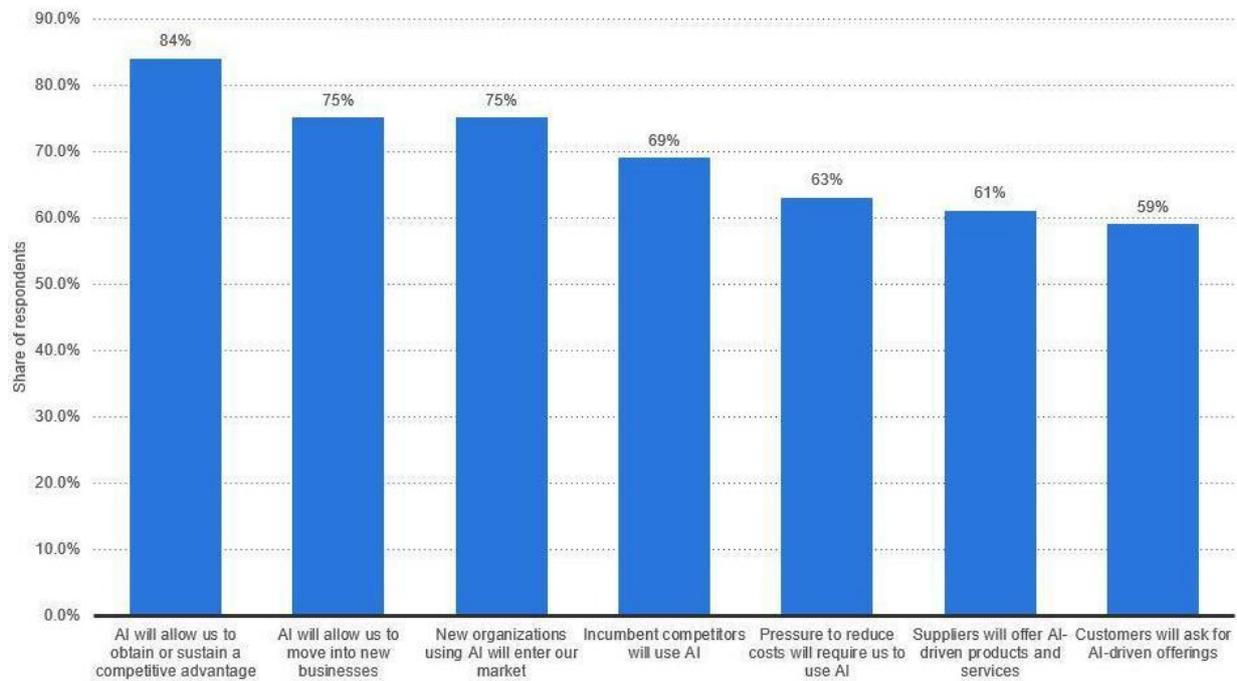


Figure 1 Reasons for Adopting AI Worldwide<sup>x</sup>

AI is usually considered a subfield of computer science.<sup>xi</sup> However, in essence AI is an interdisciplinary field that incorporates ideas, techniques, and researchers from multiple fields, such as statistics, linguistics, robotics, electrical engineering, mathematics, neuroscience, economics, logic, philosophy and many more.<sup>xii</sup> This allows AI to be incorporated into fields such as Transportation, Manufacturing, Healthcare, Education, Media and Customer Service<sup>xiii</sup> that usually makes the lives of humans easier. For example, “*police departments are trying to find some application of AI to identify likely criminals among the general population. Likewise, some judges and prison officials would like to use AI to develop “risk prediction” algorithms to assist with decisions on criminal sentencing, bail hearings, and parole.*”<sup>xiv</sup>

Implementation of AI to the daily lives of humans have considerable impacts and benefits, however this implementation can bring risks as well as the benefits. The first and most important risk is the fact that there hasn’t been any extensive legal framework that was adopted for AI, thus turning legal responsibility cases into complex ones.<sup>xv</sup> Secondly, when a new technology is implemented for the benefit of the society, it is expected to be transparent and understandable. However, Black Box algorithms cause the transparency of the algorithms to be inordinately complex to even those who created the algorithms. Creators cannot thoroughly explain how the variables combined together reach the resulting prediction.<sup>xvi</sup> Thirdly, because of the ever-growing data sphere that was collected by AI algorithms, data leaks and breaches reveal and violate millions of people’s personal information and

privacy.<sup>xvii</sup> In addition, since Data is collected from humans, this data may be biased, resulting in AI with deep-learning algorithms to be biased too, which may cause ethical issues.<sup>xviii</sup> Lastly, with the implementation of AI, programming new software is relatively easier than before, this increases the number of non-approved Software as a Service mechanisms, which may or may not have malicious intent towards their users and since they are not approved, they are not traceable by governments.<sup>xix</sup>

#### **a. Working Mechanisms and General Knowledge Regarding AI**

In order to grasp the idea of Artificial Intelligence, first the differences between Augmented Intelligence and Artificial Intelligence must be stated. Augmented intelligence is “*a design pattern for a human-centered partnership model of people and artificial intelligence (AI) working together to enhance cognitive performance, including learning, decision making and new experiences.*”<sup>xx</sup> Basically, augmented intelligence doesn’t replace humans but rather helps humans create systems that may help in industries, augment human decision making, automate the tasks that require repetition and many more.<sup>xxi</sup>

AI can be classified into two categories which are weak AI and strong AI. AI machines are differentiated by their performance levels with tests such as Turing to determine whether they are Strong or Weak.<sup>xxii</sup> This categorization is due to the difference between supervised and unsupervised programming of the AI.<sup>xxiii</sup> While weak AI’s use supervised and unsupervised learning to process data, Strong AI use clustering<sup>xxiv</sup> and association to process data.<sup>xxvxxvi</sup> On the basic level, weak AI is good at specific tasks while strong AI may have intelligence that is closer to a human. Siri and Alexa can be given as an example to Weak AI. Weak AI’s can be counted as “Artificial Narrow Intelligence (ANI)” and Strong AI’s can be counted as “Artificial General Intelligence (AGI)” which are the types of AI.<sup>xxvii</sup>

There are 3 types of AI: Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI) and Artificial Super Intelligence (ASI).

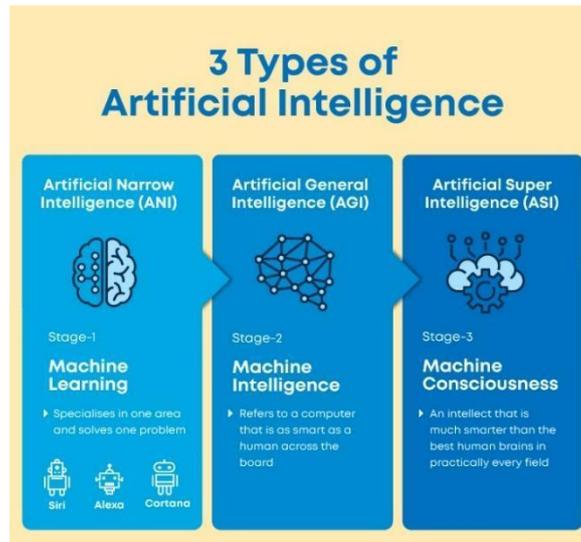


Figure 2 Types of Artificial Intelligence and Their Working Algorithms<sup>xxviii</sup>

## i. Types of AI

### 1. Artificial Narrow Intelligence (ANI)

Narrow AI is goal-oriented, designed to perform singular tasks and is very efficient at completing the specific task it is programmed to do.<sup>xxix</sup> ANI seems intelligent, however, they operate under a limited set of constraints, which is the reason why they are referred as weak AI. Narrow AI doesn't mimic or replicate human intelligence, it merely simulates human behavior based on the limits that were set and expected input.<sup>xxx</sup> Narrow AI went under an explosive growth and numerous breakthroughs in the last decade, with the usage of machine learning and deep learning. For example, AI systems today are used in medicine to diagnose cancer and other diseases with extreme accuracy through replication of human-esque cognition and reasoning.<sup>xxxi</sup>

### 2. Artificial General Intelligence (AGI)

Artificial general intelligence (AGI), also referred to as strong AI or deep AI, is the type of AI that has a general intelligence which mimics human intelligence and/or behaviors with the ability to learn and apply its intelligence to solve any problem. AGI can think, understand, and act in a way that is indistinguishable from that of a human in any given situation.<sup>xxxii</sup> Strong AI uses a theory of mind AI framework, which consists of the ability to discern needs, emotions, beliefs and thought processes of other intelligent entities. Mind level AI does not replicate or simulate human behavior, but rather to understand the concept of humanity truly.<sup>xxxiii</sup> AI researchers and scientists have not yet achieved strong AI. In order to achieve strong AI, scientists would have to find a way to make machines conscious and program the

cognitive abilities.<sup>xxxiv</sup> Even with the most advanced computing systems and infrastructures, such as Fujitsu's K or IBM's Watson, it has taken them 40 minutes to simulate a single second of neuronal activity, which reflects the immense difficulty of building an AGI.<sup>xxxv</sup>

### **3. Artificial Super Intelligence (ASI)**

Artificial super intelligence (ASI), is the hypothetical AI that doesn't just mimic or understand human intelligence and behavior; ASI is where machines become self-aware and surpass the capacity of human intelligence and ability.<sup>xxxvi</sup> Once we achieve Artificial General Intelligence, AI systems would rapidly be able to improve their capabilities and advance towards Artificial Super Intelligence.<sup>xxxvii</sup>

#### **ii. Working Mechanisms**

AI systems are built by a careful process of reverse-engineering human traits and capabilities in a machine.<sup>xxxviii</sup> An AI system may use Machine Learning, Deep Learning, Neural Networks, Natural Language Processing (NLP), Computer Vision, Cognitive Computing and Advanced Algorithms integrated with the Internet of Things in order to serve to purposes of its creator.<sup>xxxix</sup>

#### **1. Machine Learning**

Machine learning allows to automate the process of finding the hidden insights in data without explicitly being programmed to where to find the actual data or what to conclude from the data it found by using methods from neural networks, statistics, operations research and physics.<sup>xl</sup>

As the volume and varieties of available data is growing in addition to having cheaper and more powerful computational power day by day while the data storage becoming more affordable results in quicker and autonomously produced models that can analyze bigger and more complex data. This would allow organizations to get their results faster and more accurately even if it is on a very large scale. And by building more precise models, an organization has a higher chance of identifying opportunities or avoiding unknown risks.<sup>xli</sup>

#### **2. Deep Learning**

Deep learning is a subset of machine learning and it is concerned with algorithms inspired by how a human brain works. By analyzing the structure and function of the brain, artificial neural networks are created with the usage of Deep Learning.<sup>xlii</sup> Deep learning trains a computer to perform human-like tasks, such as speech recognition, image identification and

prediction making. With the implementation of deep-learning, it is possible to improve the ability to classify, recognize, detect and describe using data.<sup>xliii</sup>

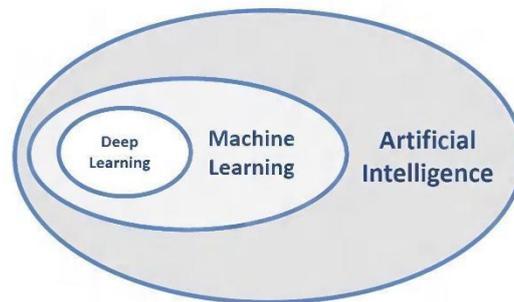


Figure 3 Relationship Between Machine Learning and Deep Learning<sup>xliv</sup>

### 3. Neural Networks

Neural Networks work on the similar principles as Human Neural cells.<sup>xlv</sup> Neural networks are computing systems with interconnected nodes that uses algorithms to recognize hidden patterns and correlations in raw data, cluster and classify it, and continuously learn and improve over time.<sup>xlvi</sup> They can learn and model the relationships between inputs and outputs that are nonlinear and complex; make generalizations and inferences; reveal hidden relationships, patterns and predictions; and model highly volatile data and variances needed to predict rare events.<sup>xlvii</sup>

### 4. Natural Language Processing (NLP)

NLP can be defined as: “a science of reading, understanding, interpreting a language by a machine.” The machine responds accordingly once it understands what the user intends to communicate.<sup>xlviii</sup> Natural language processing helps computers communicate with humans in their own language and helps in the cases of other language-related tasks. For example, with NLP computers are able to read text, hear speech, interpret it and determine which parts are critical.<sup>xlix</sup>

### 5. Computer Vision

Computer vision is a field of artificial intelligence that trains computers to interpret and understand the visual world. By using images and videos and deep learning models, machines are able to accurately identify and classify objects, then react to what they interpret from their findings.<sup>1</sup>

## **6. Advanced Algorithms and Internet of Things**

The Internet of Things (IOT) refers to the devices that are connected to the internet and sharing data with other devices. With built-in sensors, Internet-connected devices collect data and, in some cases, act on it.<sup>li</sup> Examples can range from a automatically heat and lightning adjusting smart home to a smart factory that monitors industrial machines to look for possible issues, then automatically adjusts to avoid failures.<sup>lii</sup>

### **iii. Big Data**

Big data refers to large, hard-to-manage volumes of data, both structured and unstructured. The crucial part is the usage of these large volume of data and to what purpose. Big data is used in order to gain insights that improve decisions and give confidence for making strategic business moves.<sup>liii</sup> By analyzing data, companies are able to find answers that will be in their benefit in the areas of; streamline resource management, improvement of operational efficiencies, optimizing product development, driving new revenue and growth opportunities and enabling smart decision making.<sup>liv</sup>

#### **1. Deep Data**

Deep data is a subset of big data, so they share similarities. Both use the same information collected daily by businesses worldwide.<sup>lv</sup> Deep data consists of the entire collection of information, even irrelevant details, an organization has. In order to identify trends and analyze deep data, users will have to filter the relevant data from the irrelevant data firstly. Deep data is what is remaining at hand when experts filter out the irrelevant data from the big data set. All users are left with then is usable information.<sup>lvi</sup>

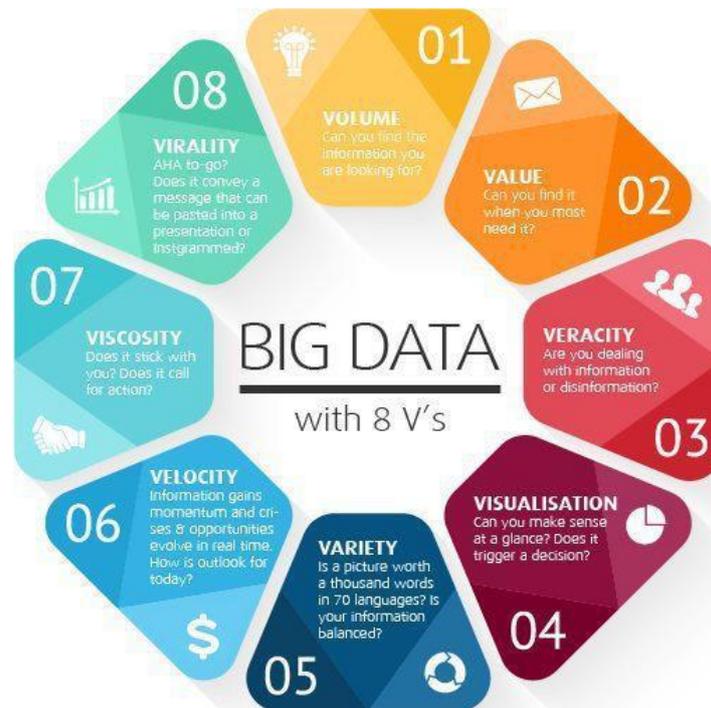


Figure 4 8 V's of Big Data<sup>lvii</sup>

## II. Data Economy

The volume of data is expanding day by day and it is expected that there will be more than 16 zettabytes (16 trillion GB) of useful data by 2020.<sup>lviii</sup> To be able to effectively use, manage and extract knowledge and information is now seen as a key competitive advantage in the business world. Nowadays, organizations are building their core business upon their capability to collect and analyze data to extract business insight and knowledge. Big data technology adoption in the industrial sectors is becoming a necessity rather than a choice due to the comparative advantage of organizations that have adopted big data technology.<sup>lix</sup>

Big data is expected to be impactful in nearly all sectors and it is possible to see that in some sectors it already is leaving huge impacts. These sectors are:

- Healthcare
- Public Sector
- Finance and Insurance
- Telecom, Media and Entertainment
- Retail
- Manufacturing
- Energy And Transport

## a. Big Data in Sectors

### i. Healthcare

Due to Europe's society being an aging society, which places significant demand on its healthcare infrastructure,<sup>lx</sup> There is an urgent need for improvement in the efficiency of Europe's current healthcare systems. Healthcare applications of big data in addition to usage of predictive modeling, statistical tools, and algorithms can result in improved clinical trial design and personalized medicine. Big data can also be used in analyzing disease patterns.

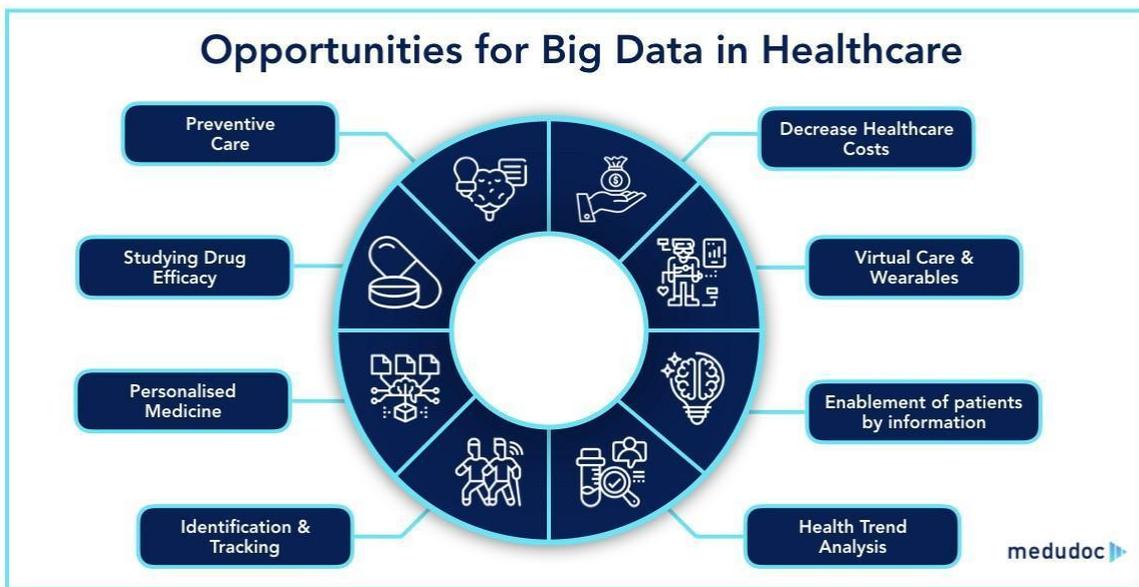


Figure 5 Opportunities for Big Data in Healthcare<sup>lxi</sup>

### ii. Public Sector

With the usage of Big Data it is possible to reduce the costs of administrative activities by 15–20 %, which is between 150 billion euros to 300 billion euros.<sup>lxii</sup> In addition to reducing cost, via open data and open government there can be an increased transparency. Areas such as public procurement, allocation of funding into programmes, services of government, accountability of the public sector and informing of citizens can be enhanced by usage of big data.<sup>lxiii</sup> Big data is expected to change the relationship between citizens and governments since it is expected that usage of big data will empower citizens to understand political and social issues in transparent ways.<sup>lxiv</sup>

Big data analytics can help the government, in addition to boosting transparency and growth, to be more efficient and combat fraud since public sector transactions, employment, education, manufacturing, and agriculture generate a large amount of publicly available information.<sup>lxv</sup>



Figure 6 Applications of Big Data in Public Sector<sup>lxvi</sup>

### iii. Finance and Insurance

There are several advantages for financial service companies to conduct business with mining and analyzing data. These are: enhanced retail customer service, detection of fraud, and improvement of operational efficiencies.<sup>lxvii</sup> Predictive analysis of both internal and external data leads to more proactive management of a wide range of issues from credit and operational risk to customer loyalty and profitability.<sup>lxviii</sup>

The true value of big data comes from properly extracting actionable information and combining it with data from other sources. To produce enhanced, hybrid datasets, market data from numerous markets and locations, as well as a variety of asset classes, can be combined with data from other structured and unstructured sources.<sup>lxix</sup> This gives a full and integrated view of the market condition and can be utilized for a number of real-time operations such as signal generation, trade execution, profit and loss (P&L) reporting, and risk management.<sup>lxx</sup>

There are still research challenges to develop the technologies to their full potential in order to fully develop technologies so that they can give competitive and effective solutions. These challenges appear at all levels of the big data value chain and include a diverse collection of technologies.<sup>lxxi</sup>

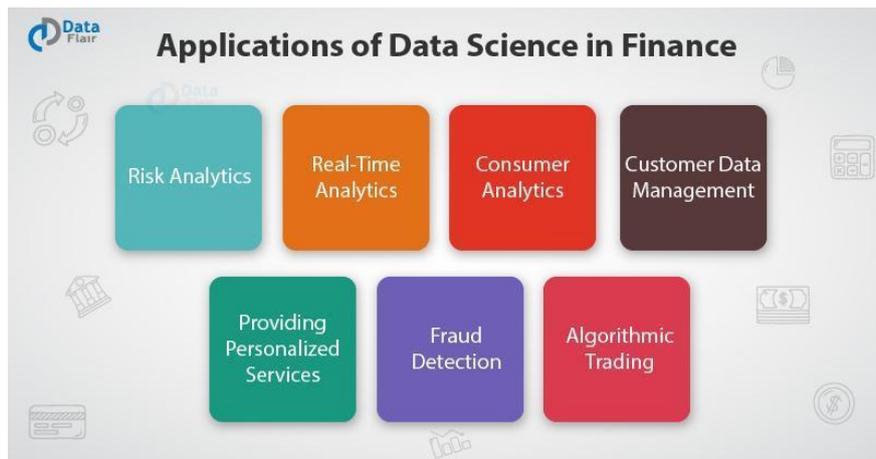


Figure 7 Applications of Data Science in Finance<sup>lxxii</sup>

#### iv. Telecom, Media and Entertainment

Big data analysis and visualization techniques can help consumers discover and deliver media content more effectively, allowing them to connect dynamically with new media and information across different platforms. With applications such as location-based content distribution for individuals, smart personalized content routing, car telematics, mobile location-based services, and geo-targeted advertising, the domain of personal location data offers the possibility for new value generation.<sup>lxxiii</sup>

Big data allows media and entertainment-oriented companies to predict their audiences' interest, to gain insight into customer churn, increase their content monetization, optimize streaming schedules and effectively ad-target their customers.<sup>lxxiv</sup>

#### v. Retail

As people explore, investigate, compare, buy, and get help online, data is becoming more important, and the products sold by retailers are increasingly creating their own data footprints. Big data can help retailers enhance production and efficiency, increasing their operating margins up to 60%.<sup>lxxv</sup> Big data can impact retail in areas such as marketing: cross-selling, location-based marketing, in-store behavior analysis, customer micro-segmentation, customer sentiment analysis, enhancement of multi-channel consumer experience; merchandising: assortment optimization, pricing optimization, placement and design optimization; operations: performance transparency, labor inputs optimization; supply chain: inventory management, distribution and logistics optimization, informing supplier negotiations; new business models: price comparison services, web-based markets.<sup>lxxvi</sup>

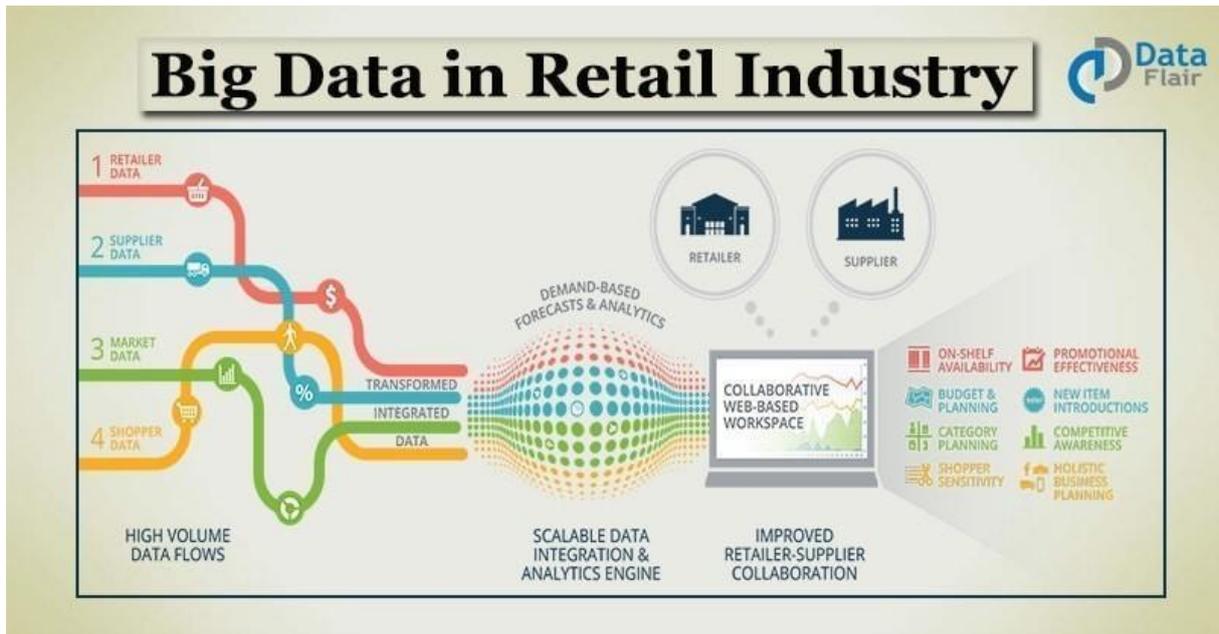


Figure 8 Big Data in Retail Industry<sup>lxxvii</sup>

## vi. Manufacturing

The Manufacturing sector was an early adopter of IT for product design, manufacturing, and distribution. Design, production, and product quality will all increase even more in the next generation of smart factories with intelligent and networked machinery (i.e. Internet of Things, Industry 4.0). Customer needs will be met through precisely targeted products and efficient delivery, thanks to big data. Big data will enable whole new business models in the area of mass manufacture of individualized items, in addition to efficiency benefits and predictive maintenance.<sup>lxxviii</sup> Industrial producers can also use these large data resources to control costs, optimize resource usage, and manage sustainability initiatives in the event of a change in legislation.<sup>lxxix</sup>

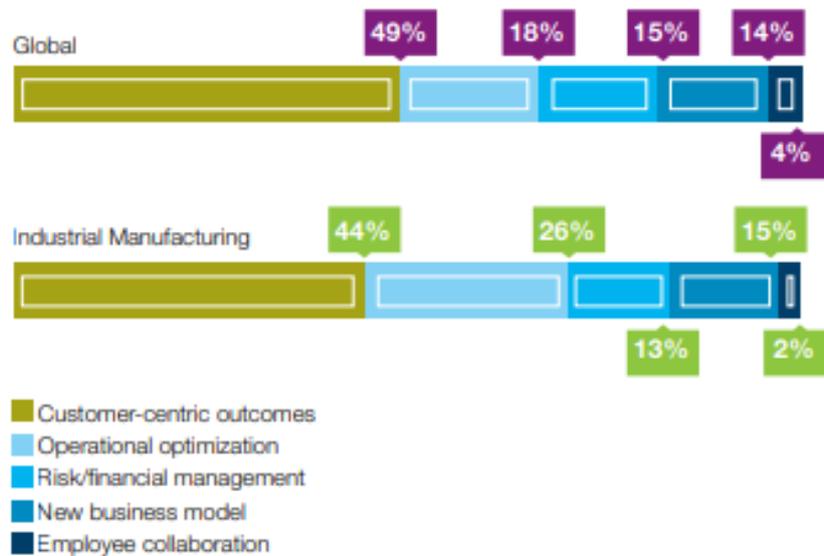


Figure 9 Approach to Big Data by Manufacturers<sup>lxxx</sup>

### vii. Energy and Transport

Big data's potential in the transportation sector is predicted to be worth USD 500 billion in time and fuel savings, with 380 megatonnes of CO2 emissions avoided.<sup>lxxxii</sup> The digitalization of energy systems allows for the collection of real-time, high-resolution data via smart meters, which can then be used in sophisticated analytics to increase the efficiency of energy networks on both the demand and supply sides. In addition, Smart buildings and smart cities will be key drivers of increased energy efficiency. In the utilities industry, big data technology has the potential to reduce CO2 emissions by more than 2 gigatonnes, or 79 billion euros.<sup>lxxxii</sup>

### b. European Big Data Ecosystem

Europe must encourage the development and widespread adoption of big data technologies, value-added use cases, and long-term business models in order to boost innovation and competitiveness.<sup>lxxxiii</sup> A European Big Data Ecosystem is an important factor for commercialization and commoditization of big data services, products, and platforms. Companies can collaborate in a healthy business ecosystem, where they can exchange and share vital resources. In order to support the growth of a big data ecosystem in Europe, several obstacles must be addressed<sup>lxxxiv</sup>:

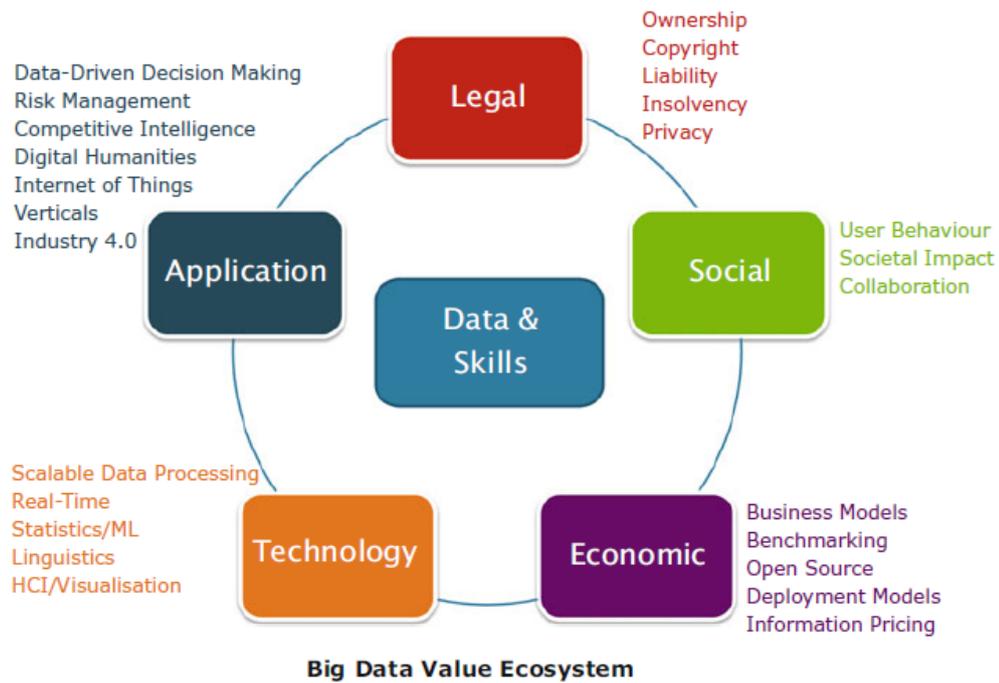


Figure 10 Big Data Value Ecosystem<sup>lxxxv</sup>

- **Data:** Data-centric ecosystems will be built on the availability and accessibility of data. A healthy data ecosystem will include a variety of data kinds, including structured, unstructured, multilingual, machine and sensor-generated data, static, and real-time data. The ecosystem's data should originate from a variety of sources, including healthcare, energy, and retail, as well as public and private sources.<sup>lxxxvi</sup>
- **Skills:** The availability of competent people in the data ecosystem will be a key concern for Europe. Data scientists and engineers with experience in analytics, statistics, machine learning, data mining, and data management will be required to maintain an active ecosystem.<sup>lxxxvii</sup>
- **Legal:** Topics such as Data ownership, usage, protection, privacy, security, responsibility, cybercrime, intellectual property rights, and the implications of insolvencies and bankruptcy require legal clarification.<sup>lxxxviii</sup>
- **Technical:** large-scale and heterogeneous data acquisition, efficient data storage, massive real-time data processing and data analysis, data curation, advanced data retrieval and visualization, intuitive user interfaces, interoperability and linking data, information, and content.<sup>lxxxix</sup>
- **Social:** Big data will provide solutions to important societal challenges in Europe, such as improved efficiency in healthcare, increased city liveability, enhanced transparency in government, and improved sustainability.<sup>xc</sup>

### **c. European Data Strategy**

Europe aims to capture the benefits of improved data utilization, such as increased productivity and competitive markets, as well as improvements in health and well-being, the environment, transparent governance, and easy access to government services.<sup>xci</sup> In the data-agile economy, the EU has the potential to succeed. It possesses the necessary technology, expertise, and a highly skilled work force. Competitors such as China and the United States, on the other hand, are already developing swiftly and projecting their data access and usage concepts over the world. In the United States, data space organization is left to the private sector, with considerable concentration effects. China combines government surveillance with a firm grip on Big Tech corporations over vast amounts of data, all without enough safeguards for individuals. To fully realize Europe's potential, the EU must create a European solution that balances data flow and wide use while maintaining strong privacy, security, safety, and ethical standards.<sup>xcii</sup>

EU aims to tackle the issues regarding availability of data, imbalances in market power, data interoperability and quality, data governance, data infrastructure and technologies, empowerment of individuals, skills and data literacy and cybersecurity<sup>xciii</sup> with 4 main pillars of action:

- A cross-sectional governance framework for data and use.<sup>xciv</sup>
- Encouraging investment in data and strengthening Europe's capabilities and infrastructures for hosting, processing and using data, and interoperability.<sup>xcv</sup>
- Empowering individuals, investing in skills and SMEs.<sup>xcvi</sup>
- Creating common European data spaces in strategic sectors and domains of public interest.

The EU's technological future depends on its ability to capitalize on its strengths and grab the opportunities presented by the growing creation and use of data. In order to guarantee its digital future, the EU must grab the data economy's window of opportunity.<sup>xcvii</sup>

# European Strategy for Data

A common European data space, a single market for data

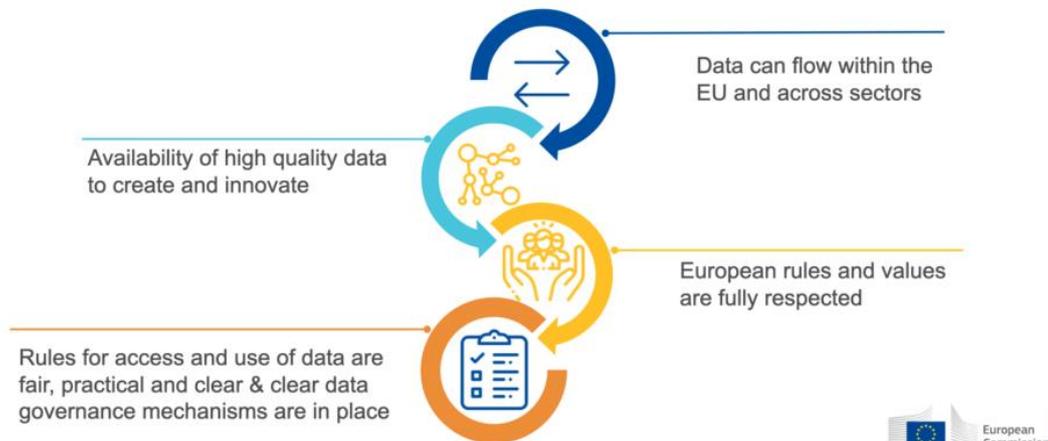


Figure 11 European Strategy for Data<sup>xcviii</sup>

## d. Surveillance Capitalism

Surveillance Capitalism's formation, development, and application have all been aided by artificial intelligence and big data. Surveillance Capitalism aims for knowledge and power imbalances while converting entire lives into data that is expropriated and repurposed into new forms of social control, most of the time without the consent of the data subjects.<sup>xcix</sup>

Surveillance capitalists eventually recognized that the best accurate behavioral data comes from intervening in the process to nudge, persuade, tune, and herd behavior toward profitable outcomes.<sup>c</sup> Surveillance capitalism is no longer confined to the competitive dramas of the large internet companies where behavioral futures markets were first aimed at online advertising. Most internet-based businesses have adopted its procedures and economic imperatives as their default model.<sup>ci</sup>

Because of the current economic nature of data and the focus of data protection regulations on the free flow of data in general, there is a risk of a lack of privacy protection. Especially when it comes to the data subject's control over personal data.<sup>cii</sup>

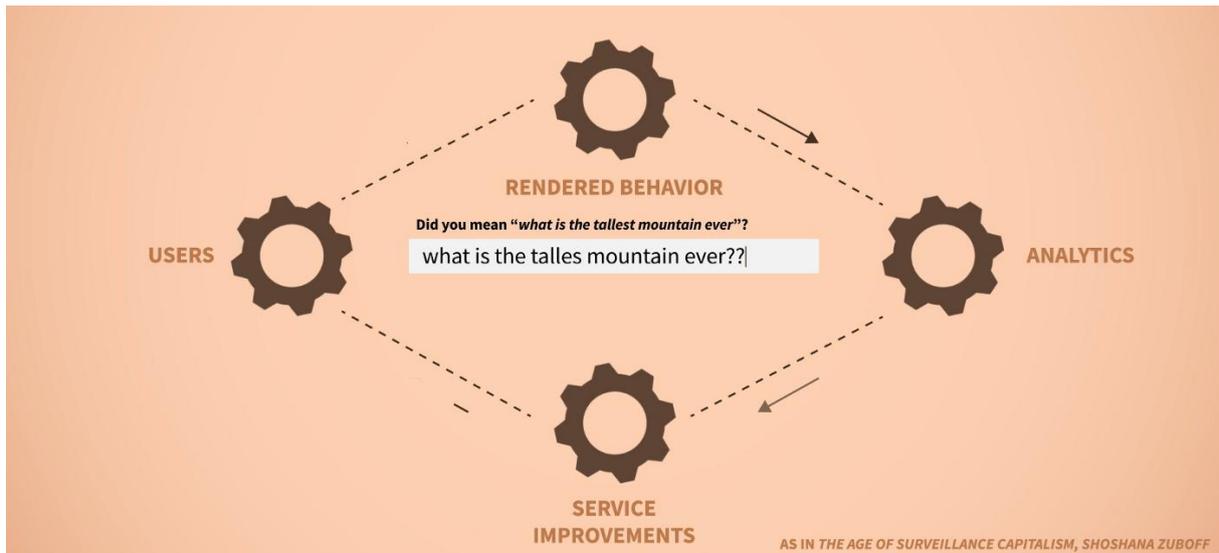


Figure 12 Surveillance Capitalism Infographic<sup>ciii</sup>

### III. AI and SME'S

The primary goal of AI is to acquire a competitive advantage in areas such as e-commerce, manufacturing, human resources, accounting, customer service, and marketing. AI procedures have been shown to improve business performance, increase sales, reduce expenses, automate customer management, save time, reduce errors, and advance data collecting and processing.<sup>civ</sup> Furthermore, the AI software can handle routine duties such as scheduling company meetings, responding to common client requests, and so on.<sup>cv</sup> With these benefits, AI becomes the most appropriate choice for both SMEs and large-scale enterprises.<sup>cvi</sup>

#### a. Benefits

##### i. Market Performance

One of the most important artificial intelligence benefits is a marketing automation system that can use machine learning to improve client targeting, create more accurate communications, and draw conclusions based on their actions.<sup>cvii</sup> While sorting through enormous data and changing their algorithms, AI systems are capable of making statistical predictions, which involves inferring diagnosis and analysis based on previously gathered information.<sup>cviii</sup> The primary distinction between AI and traditional predictive modeling is that

AI allows for a large reduction in prediction price and makes data-driven decision making easier in the business setting.<sup>cxix</sup> Enhanced prediction capabilities provides for more market segmentation and pricing differentiation, as well as the ability for SMEs to innovate and adapt business operations by better predicting individual customer behavior and price sensitivity, as well as anticipating demand shifts.<sup>cx</sup>

## **ii. Automation of Daily Tasks**

New AI systems can automate non-routine operations that traditionally required human interaction by finding patterns in datasets and learning from tacit non-structured knowledge. Process automation isn't just for production; it may also be applied in service delivery. Automated devices with the ability to learn from their surroundings could perform more activities that are difficult or risky for people.<sup>cxii</sup> Workers could be freed from low-value-added repetitive duties if their occupations are reorganized and their skillsets are enhanced, and new waves of automation enabled by AI systems could help SMEs increase productivity.<sup>cxiii</sup>

## **iii. Business Environment**

SMEs are typically more reliant on their business ecosystem than larger corporations.<sup>cxiiii</sup> As a result, SMEs are more vulnerable to weak regulatory frameworks, administrative burdens, market failures, and economic shocks. Their access to markets and the strategic resources they require is hampered by inefficient infrastructure.<sup>cxv</sup> AI as a GPT can substantially affect SME business environment along multiple dimensions:

### **1. Public Administration**

Machine learning and automation can increase the efficiency and quality of government administration and procedures, as well as save time for civil servants dealing with administrative work and improve user understanding. Machine learning techniques could potentially be used by policymakers to acquire and analyze policy evidence at a detailed level in for better informed SME policies.<sup>cxvi</sup>

### **2. Market Competition**

Algorithms could enable enterprises to establish tacit collusion, construct cartels, and sustain profits above a fair competitive level by giving sophisticated automated systems to monitor pricing, execute common policies, convey market signals, or optimize joint earnings using deep learning techniques.<sup>cxvii</sup>

### 3. Access to Finance

Neural network techniques allow for the analysis of large amounts of credit report data, cutting default risk and lending costs, and making it more viable for credit institutions to reach previously overlooked portions of the SME community. Furthermore, AI can make it easier for SMEs to get credit, especially those with no credit history or records, because alternative data sources allow Fintech operators to better assess SMEs' creditworthiness.<sup>cxvii</sup>

#### b. Challenges

Overall, most countries' corporate populations have a low level of data analytics adoption, although certain countries have seized the lead. In the Netherlands, Belgium, and Ireland, more than 20% of businesses (those with ten or more employees) did big data analysis in 2018.<sup>cxviii</sup> SMEs lag behind major companies in implementing data analytics.<sup>cxix</sup>

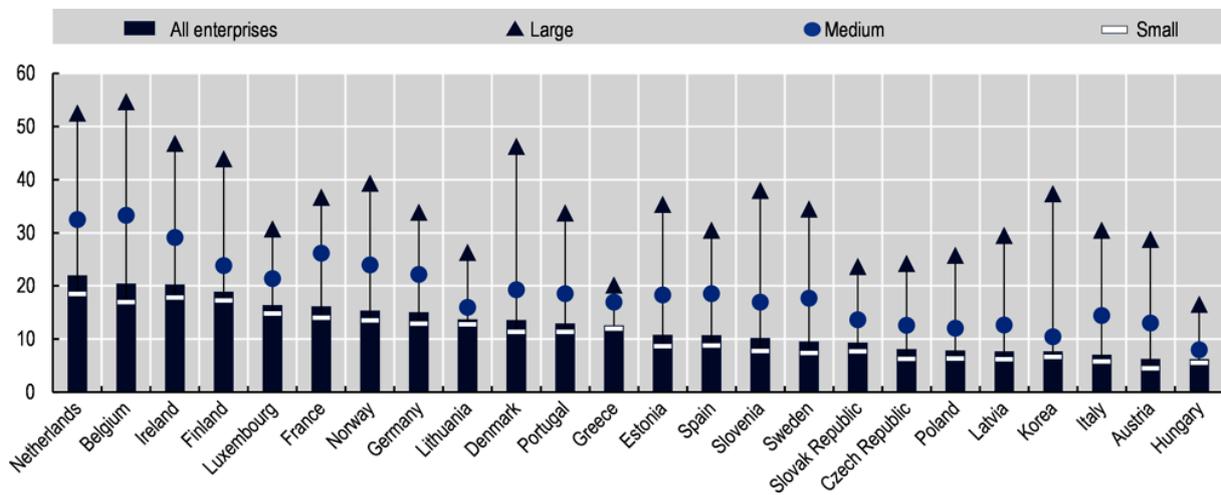


Figure 13 Businesses Having Performed Big Data Analysis<sup>cxix</sup>

#### i. High Cost and Uncertainty

A huge amount of data is needed to train AI systems, as well as human intervention to analyze the data and make it machine-readable. SMEs usually lack the cash flow and financial resources to cover these capital requirements, especially since assessing the cost of establishing an AI system and its advantages can be difficult. Furthermore, uncertainty, a lack of concrete proof and business strategies can increase the cost of obtaining loans. In every technology sector, SMEs fall behind major corporations, compounding their disadvantage. Furthermore, AI transformation may not provide instant benefits and efficiency increases, resulting in sunk expenses for SMEs prior to realizing their development potential.<sup>cxvii</sup>

## **ii. Legal Risk**

One of the challenges has been the lack of explainability of AI systems that use machine learning, which could pose a number of issues for consumers and manufacturers of AI solutions. SMEs are particularly vulnerable, even those that are utilizing AI without realizing it.<sup>cxxii</sup>

## **iii. Human Factor**

There is a need to promote awareness among small business owners, managers, and entrepreneurs about the benefits AI may provide. Furthermore, effective adoption requires raising workforce awareness, including improved knowledge about the complimentary role AI plays with workers in emerging AI-enhanced systems.<sup>cxxiii</sup>

## **iv. Lack of Data Culture and Weak Data Management**

As SMEs are less prepared to valorize their data, they must improve their data preparedness by implementing proper data management procedures. However, because of the increased volume and granularity of data gathered and maintained, SMEs may be more vulnerable to data breaches. Personal, credentials, and financial data of SMEs' customers and employees, as well as internal data to the firm, and in some sectors, medical information, are all subject to data privacy concerns.<sup>cxxiv</sup>

## **IV. Ethics of AI**

The ethics of AI and robotics is a very young field within applied ethics, with significant dynamism, but few well-established issues and no authoritative overviews.<sup>cxxv</sup> Due to this lack of a solid framework, while discussing AI ethics, it is necessary to consider the concerns from several perspectives, such as AI usage and humanoid AI ethics. In this field, we need "responsible design" in addition to "responsible use." The emphasis on use does not presume which ethical theories are best suited to addressing these challenges; virtue ethics, rather than consequentialist or value-based ethics, may be more appropriate.<sup>cxxvi</sup>

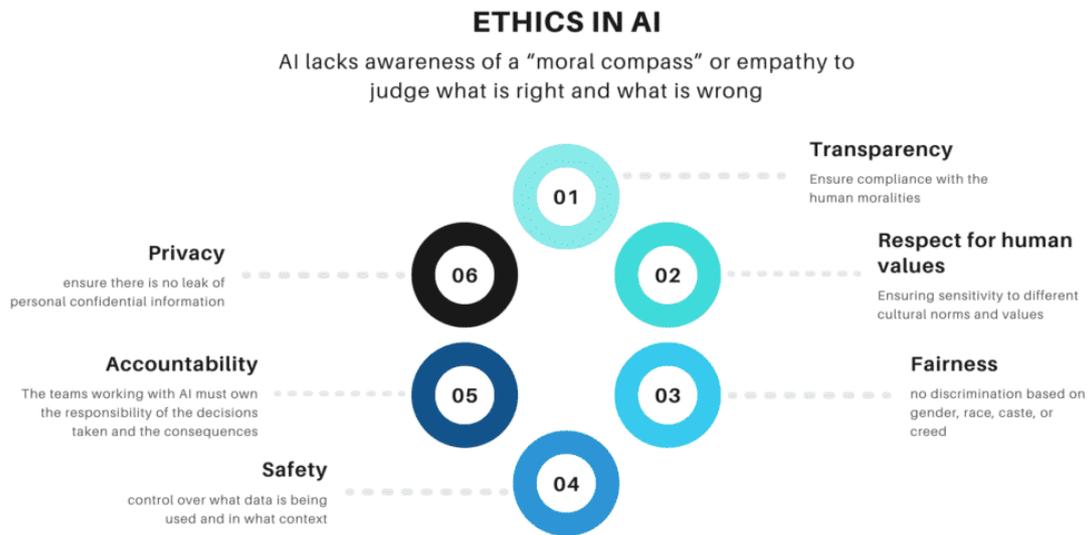


Figure 14 Ethics in AI: A General View<sup>cxxvii</sup>

## a. Problems Regarding Ethical Usage of AI

### i. Privacy and Surveillance

Monitoring by other governmental agents, enterprises, and even individuals is now included in privacy studies, which previously centered on state surveillance by secret services. The result is a certain anarchy that is exploited by the most powerful players, sometimes in plain sight, sometimes in hiding, since technology has changed dramatically in recent decades and regulation has been stagnant to respond.<sup>cxxviii</sup> Simultaneously, managing who gathers which data and who has access is considerably more difficult in the digital world, and many emerging AI technologies exacerbate the existing problems. Face recognition in images and videos, for example, enables for identification, profiling, and searching for individuals, which is known as device fingerprinting.<sup>cxxix</sup> In this "surveillance economy," the major goal of social media, gaming, and most of the Internet is to gain, maintain, and direct attention—and therefore data supply.<sup>cxxx</sup>

Every employee, in essence, is continually providing data that may be analyzed to assess performance, well-being, and behavior. While some businesses track how much time employees spend on various apps, others go so far as to remotely examine employees' displays and record videos from web cameras.<sup>cxxxi</sup>

It's also critical to have monitoring programs in place so that employees can profit from them. AI-enabled employee performance assessment, when done correctly and with the right gamification strategies, can have a significant impact on job happiness and engagement.<sup>cxxxii</sup>

## **ii. Manipulation of Behavior**

The ethical implications of AI in surveillance extend beyond the collection of data and the focus of attention: corporations may utilize data to alter behavior, both online and offline, in a way that undermines autonomous rational decision.<sup>cxxxiii</sup> With sufficient prior data, algorithms may be used to target individuals or small groups with precisely the type of input that is most likely to influence them.<sup>cxxxiv</sup> Furthermore, political propaganda is now primarily distributed through social media. This power can be utilized to influence vote decisions.<sup>cxxxv</sup> Furthermore, enhanced AI "faking" technologies turn what was once reliable evidence into questionable evidence—this has already happened with digital pictures, voice recordings, and video.<sup>cxxxvi</sup>

Many advertisers, marketers, and internet vendors will exploit behavioral biases, deception, and addiction generation to maximize profit.<sup>cxxxvii</sup> In interface design on web pages or in games, this manipulation uses what is called “dark patterns”.<sup>cxxxviii</sup>

## **iii. Opacity**

Although a specific definition of 'opacity' in AI systems has yet to be specified, the debates have largely focused on AI systems' generation of human-interpretable explanations, or hints, as to how they arrive at their outputs.<sup>cxxxix</sup>

AI systems for automated decision support and “predictive analytics” raise “significant concerns about lack of due process, accountability, community engagement, and auditing”.<sup>cxl</sup> At the same time, the impacted person will often be unable to understand how the system arrived at this result, i.e., the system will be "opaque" to that person.<sup>cxli</sup> However, by understanding the reasoning of AI, hackers will have an easier time tricking the algorithm.<sup>cxlii</sup>

## **iv. Bias in Decision Systems**

When an individual makes an unjust judgment due to a feature that is clearly irrelevant to the subject at hand, such as a prejudiced assumption about members of a group, bias is likely to emerge.<sup>cxliii</sup> Furthermore, there is controversy over whether AI might be subject to cognitive bias, also known as confirmation bias, which is defined as the tendency to interpret information as confirming what one already believes.<sup>cxliv</sup> Statistical bias is another type of bias that can be found in data. When creating a dataset, there's always the risk that it'll be used

for something else and then turn out to be biased for that issue. Machine learning based on such data would then not only fail to notice the bias, but would also fail to correct it.<sup>cxlv</sup>

### **1. Case Example**

Microsoft launched an AI-powered conversational chatbot on Twitter in 2016, with the goal of interacting with users via tweets and direct messages. Within hours after its release, however, it began responding with incredibly offensive and racist statements. The chatbot was constructed with an inbuilt learning function and was trained on anonymized public data, which led to a coordinated effort by a group of people to incorporate racist bias into the system. Misogynistic, racist, and anti-Semitic invective was able to inundate the bot from some users.<sup>cxlvi</sup>

### **v. Human-Robot Interaction**

While AI can be used to manipulate humans to believe and act in certain ways, it can also be used to control robots that are problematic if their processes or appearance are deceptive and endanger human dignity.<sup>cxlvii</sup> Humans easily attribute mental traits to objects and empathize with them, especially when the items' exterior appearance resembles that of human beings. This can be used to trick humans (or animals) into giving robots or AI systems more intellectual or even emotional weight than they deserve. In this perspective, some aspects of humanoid robotics are troublesome.<sup>cxlviii</sup> Replacing humans in care sectors for the elderly, for example, ignores the nature of automation, which is about allowing humans to work more efficiently rather than just replacing them.<sup>cxlix</sup>

### **b. Unemployment with the introduction of AI and Automation**

Automation increases productivity by requiring fewer humans to produce the same amount of output. However, this does not always imply a loss of overall employment because accessible wealth rises, which might boost demand enough to offset productivity gains.<sup>cl</sup>

### **c. OECD Principles on AI**

OECD outlines the usage of AI and ethical framework of AI as well as main parts that require regulation as:

#### **i. Principles for responsible stewardship of trustworthy AI**

- Stakeholders should proactively engage in responsible stewardship of trustworthy AI in pursuit of desirable results for people and the world, such as expanding human

capabilities and enhancing creativity, in areas of growth, sustainable development, and well-being.

- Throughout the lifecycle of an AI system, AI actors should comply with the rule of law, human rights, and democratic ideals. Freedom, dignity, and autonomy are among them, as are privacy and data protection, nondiscrimination and equality, diversity, fairness, and social justice, as well as globally recognized labor rights.<sup>cli</sup>
- AI Actors should commit to transparency and responsible disclosure regarding AI systems.<sup>clii</sup>
- AI systems should be robust, secure, and safe over their entire lifecycle so that they perform properly and do not pose an unacceptable safety risk in typical use, foreseeable use or misuse, or other undesirable scenarios.<sup>cliii</sup>
- AI actors should be accountable for the proper functioning of AI systems and for the respect of the above principles, based on their roles, the context, and consistent with the state of art.<sup>cliv</sup>

## **ii. National Policies and International Co-operation for Trustworthy AI**

- Governments should consider long-term public investment in research and development, as well as private investment, to foster innovation in trustworthy AI that focuses on difficult technical issues as well as AI-related social, legal, and ethical ramifications and policy issues..<sup>clv</sup>
- Governments should consider public funding and encourage commercial investment in representative open datasets that respect privacy and data protection in order to foster a bias-free environment for AI research and development, as well as improve interoperability and standard use.<sup>clvi</sup>
- Governments should promote the creation of a digital environment for trustworthy AI, as well as access to it.<sup>clvii</sup>
- Governments should foster a policy climate that encourages a smooth transition for trustworthy AI systems from research and development to deployment and operation..<sup>clviii</sup>
- Governments should collaborate closely with stakeholders to prepare for changes in the workplace and society.<sup>clix</sup>

- Governments should take initiatives, especially through social discussion, to ensure a fair transition for workers when AI is implemented, such as training programs along their working lives, support for those displaced, and access to new job possibilities.<sup>clx</sup>

Values-based principles	Recommendations for policy makers
 Inclusive growth, sustainable development and well-being >	 Investing in AI research and development >
 Human-centred values and fairness >	 Fostering a digital ecosystem for AI >
 Transparency and explainability >	 Shaping an enabling policy environment for AI >
 Robustness, security and safety >	 Building human capacity and preparing for labour market transformation >
 Accountability >	 International co-operation for trustworthy AI >

Figure 15 OECD Principles on AI<sup>clxi</sup>

#### d. Ethical Guidelines of Trustworthy AI<sup>clxii</sup>

Trustworthy AI has three components, which should be met throughout the system's entire life cycle: It should be legitimate, complying with all applicable laws and regulations; it should be ethical, assuring adherence to ethical principles and values; and it should be resilient, both technically and socially, because even with good intentions, AI systems can inflict accidental harm.<sup>clxiii</sup> Ideally, all three work in harmony and overlap in their operation.<sup>clxiv</sup>

##### i. Foundations of Trustworthy AI

- **Respect for Human Dignity:** Human dignity requires that all individuals be treated with the respect that they deserve as moral subjects, rather than as objects to be sifted, sorted, graded, herded, conditioned, or manipulated. As a result, AI systems should be created in a way that respects, supports, and protects humans' physical and mental well-being, personal and cultural identities, and the fulfillment of their basic needs.<sup>clxv</sup>
- **Freedom of the Individual:** Individual liberty, for example, necessitates the avoidance of (in)direct unlawful coercion, dangers to mental autonomy and mental

health, unjustified surveillance, deception, and unfair manipulation. Individual liberty, in reality, entails a commitment to allowing people to exert even more influence over their lives.<sup>clxvi</sup>

- **Respect for democracy, justice and the rule of law:** Individuals' multiplicity of values and life choices should be respected by AI systems, which should serve to maintain and enhance democratic processes. Democratic procedures, human thought, and democratic voting methods must not be jeopardized by AI technologies. AI systems must also include a commitment to not operate in a way that undermines the rule of law's core commitments, such as mandatory rules and regulations, and to ensure due process and equality before the law.<sup>clxvii</sup>
- **Equality, non-discrimination and solidarity:** Equality entails that the system's operations cannot generate unfairly biased outputs (e.g. the data used to train AI systems should be as inclusive as possible, representing different population groups).<sup>clxviii</sup>
- **Citizens' rights:** Citizens have a variety of rights, such as the right to vote, the right to good administration or access to public data, and the right to petition the government. AI systems have a lot of potential for improving the government's size and efficiency in providing public goods and services to society. At the same time, AI systems may have a negative impact on citizens' rights, which should be protected.<sup>clxix</sup>
- **The principle of respect for human autonomy:** Humans dealing with AI systems must be able to exercise complete and effective self-determination and participate in the democratic process. Humans should not be subordinated, coerced, deceived, manipulated, conditioned, or herded by AI systems.<sup>clxx</sup>
- **The principle of prevention of harm:** Humans should not be harmed by AI systems, nor should they be exacerbated by them. This includes safeguarding human dignity as well as mental and physical health. The surroundings in which AI systems work must be safe and secure. They must be technically sound, and they must not be vulnerable to malicious attacks.<sup>clxxi</sup>
- **The principle of fairness:** The development, implementation, and usage of AI systems must be equitable, ensuring that both benefits and costs are distributed equally and fairly, and that individuals and groups are free of bias, discrimination, and stigmatization. AI technologies may even improve societal justice if unfair biases can be eliminated.<sup>clxxii</sup>

- **The principle of explicability:** Processes must be transparent, AI system capabilities and purposes must be clearly discussed, and judgments must be explainable to people who are directly and indirectly affected, to the extent practicable.<sup>clxxiii</sup>

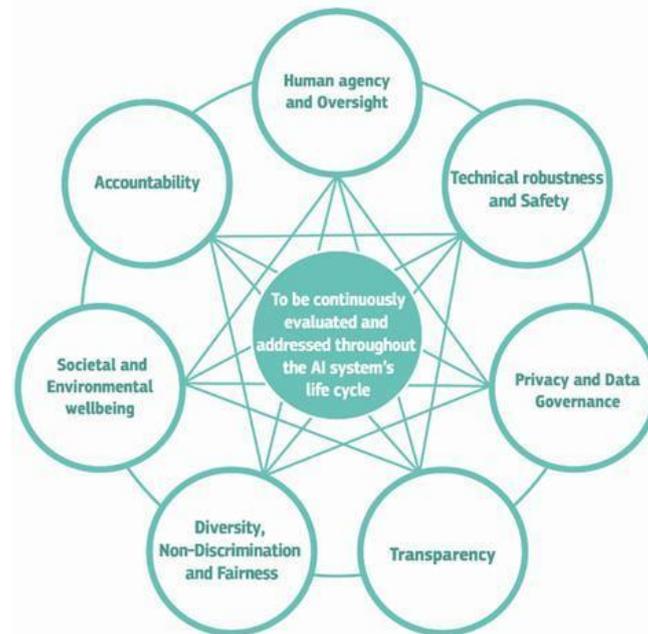


Figure 16 Interrelationship of Seven Requirements<sup>clxxiv</sup>

## V. Law of AI

Artificial intelligence-driven autonomous systems may pose significant challenges to current legal doctrine.<sup>clxxv</sup> However, AI and autonomous systems are evolving at a fast pace, resulting in more disruptive technologies that aren't addressed or compliant with present legislation. This is due to the fact that law, unlike technology, takes time to react.<sup>clxxvi</sup> This causes issues in areas such as algorithmic transparency, cyber security, unfairness and bias, contestability, legal personhood, intellectual property, effect on workers, privacy and data protection, liability and accountability.<sup>clxxvii</sup>

### a. Lack of Algorithmic Transparency

It is not known why a certain outcome was received at the end of the procedure because of the absence of algorithmic transparency. For example, when AI is employed in procedures such as job applications and bank loans, persons who are denied jobs, denied loans, placed on no-fly lists, or denied benefits are left in the dark about why their request was denied because the algorithm is not clear and understandable to some degree.<sup>clxxviii</sup> This might cause problems in human rights areas such as fair trial and due process if used in law, rights to free elections and, social rights and access to public services.<sup>clxxix</sup>

## 1. Black Box AI

The phenomena known as Black Box AI has come to being because of transparency issues regarding AI.<sup>clxxx</sup> When algorithmic bias was discovered, the black box problems lost its merit. However black box problem was acceptable to some extent in the early days of the technology. To give an example of a problem black box algorithm caused, AI used in banking denied loan applications based on their gender, and AI used to filter resumes of disqualified persons for particular positions based on their race. The AI was trained on data that was not balanced enough to contain enough data from a diverse range of people, and the historical bias that existed in human decisions was passed on to the models.<sup>clxxxi</sup>

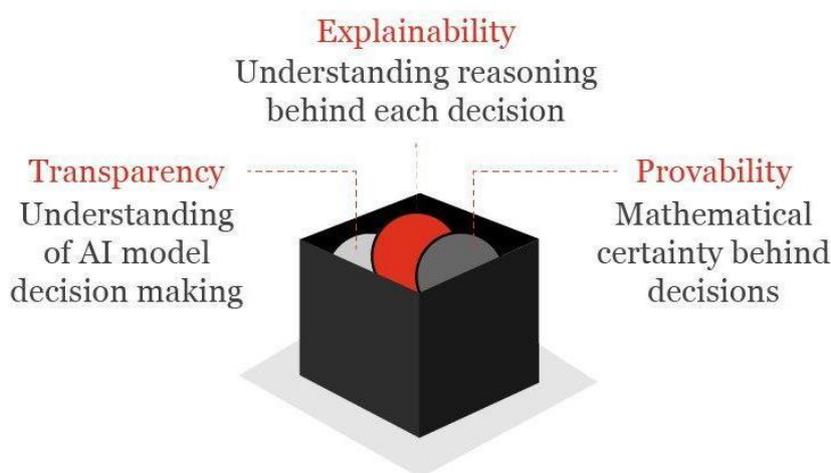


Figure 17 Understanding Black Box AI<sup>clxxxii</sup>

### b. Cyber Security Vulnerabilities

Unlike traditional cyberattacks that are caused by “bugs” or human mistakes in code, AI attacks are enabled by inherent limitations in the underlying AI algorithms that are currently unfixable. Furthermore, AI attacks significantly increase the number of entities that can be employed to carry out cyberattacks. Physical things can now be utilized in cyberattacks for the first time (e.g., an AI attack can transform a stop sign into a green light in the eyes of a self-driving car by simply placing a few pieces of tape on the stop sign itself). These attacks can also be used to weaponize data in new ways, necessitating changes in the way data is collected, stored, and used.<sup>clxxxiii</sup> Furthermore, governments are increasingly using artificial intelligence to monitor individuals (e.g., predictive policing algorithms). These have been criticized for their potential to jeopardize citizens' fundamental rights.<sup>clxxxiv</sup> Such issues can expose vital infrastructures to harm, posing a threat to life and human security, as well as access to resources, with serious consequences for society and individuals.<sup>clxxxv</sup> Human rights

areas that might be affected are the right to privacy, freedom of expression and the free flow of information.<sup>clxxxvi</sup>

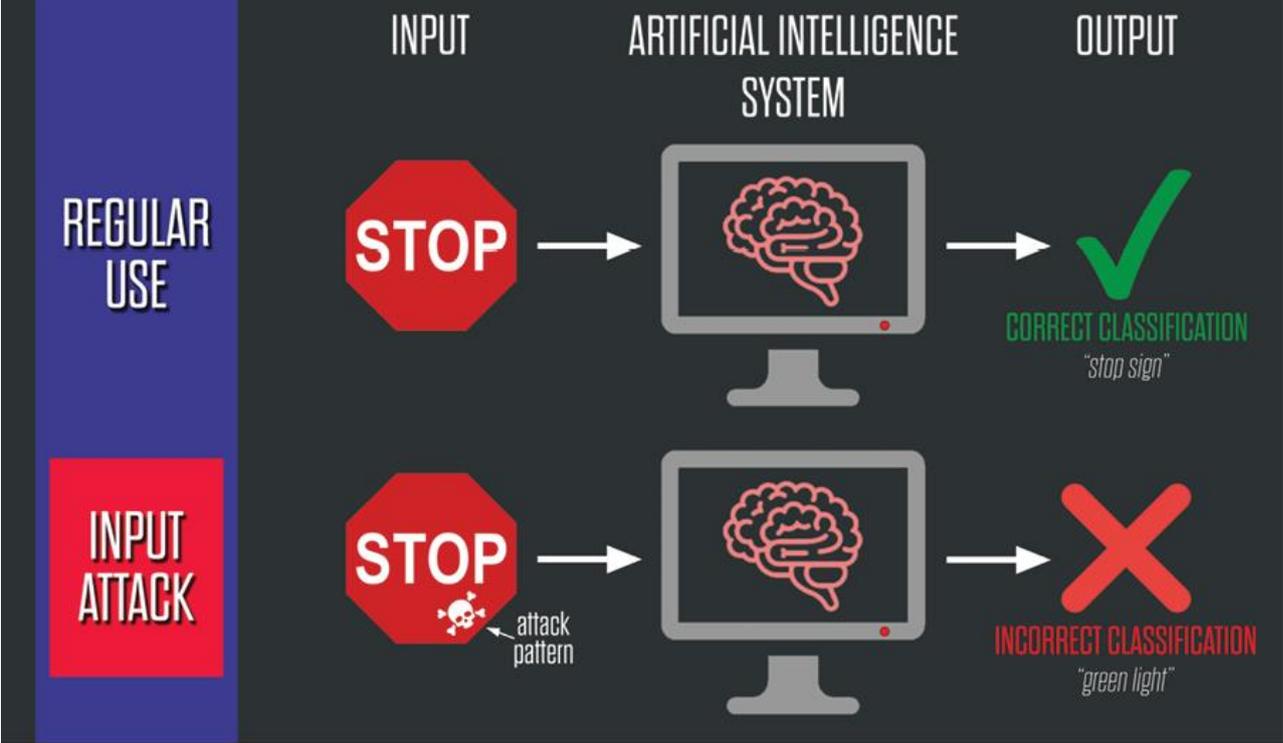


Figure 18 AI Security Vulnerability<sup>clxxxvii</sup>

**c. Unfairness, Bias and Discrimination**

Unfairness, bias, and discrimination have all been identified as key challenges associated with the use of algorithms and automated decision-making systems in areas such as health, employment, credit, criminal justice, and insurance.<sup>clxxxviii</sup> Human rights areas that might be affected are equal protection of law without discrimination, enjoyment of prescribed rights without discrimination, prohibition on the basis of disability and right to freedom from discrimination.

**d. Lack of Contestability**

AI systems' opacity may reduce both their 'owners' accountability and the contestability of their judgments. There is currently no mechanism in place to allow users to dispute AI systems or their owners when they create unexpected, harmful, unfair, or discriminating outcomes.<sup>clxxxix</sup> Human rights area that might be affected is right to an effective remedy.

#### **e. Intellectual Property Issues**

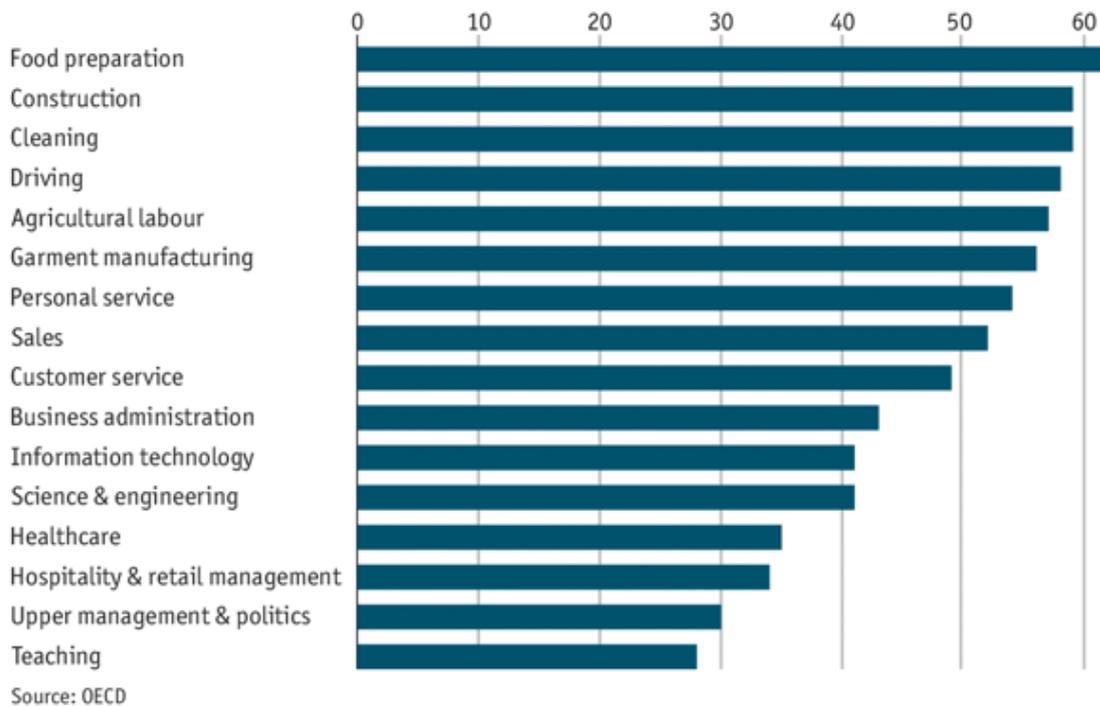
Despite the fact that they imitate human intelligence, they lack a physical existence and are currently not recognized as entities with rights in the traditional sense. That leaves the matter of ownership and/or authorship of autonomous machine-created works unsolved.<sup>cxv</sup> In the context of AI, the crucial question is who should be the inventor in the patent application for AI-generated products? AI-generated products, according to one school of thinking, should be considered public domain. The biggest issue with this strategy is that a lack of incentives will deter people from investing in the creation of new inventions.<sup>cxvi</sup> Human rights areas that might be affected are the right to own property alone or in association with others and right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which s/he is the author.<sup>cxvii</sup>

#### **f. Effect on Workers**

Changes in future employee requirements, lower demand for workers, labor relations, creation of new job structures and new types of jobs, dismissal of employees, inequality in the "new" job market, integration of untrained workers in the "new" job market, labor relations (and its possible implications for union activities and collective bargaining aspects, challenges for employee representation) are just a few of the issues highlighted by the IBA Global Employment Institute.<sup>cxviii</sup> These problems have major economic (e.g., poverty) and social (e.g., homelessness, displacement, violence, despair) human rights consequences.<sup>cxix</sup> Human rights areas that might be affected are right to social security, free choice of employment, to just and favorable conditions of work, right to work, to equal pay for work.

## Automated for the people

Automation risk by job type, %



Economist.com

Figure 19 Automation Risk by Job Type<sup>cxv</sup>

### g. Privacy and Data Protection Issues

AI poses significant privacy and data security concerns. Informed consent, surveillance, and infringement of individuals' data protection rights, such as the right of access to personal data, the right to prevent processing that is likely to cause harm or distress, and the right not to be subjected to a decision based solely on automated processing, are just a few examples. Researchers express worries about algorithmic accountability and point out that people have little control and authority over how their personal data is used to make conclusions about them.<sup>cxvii</sup> Human rights that might be affected are rights to respect for private and family life and right to privacy and data protection.<sup>cxviii</sup>

### h. Lack of Liability

People and property may be harmed as a result of the deployment and use of AI technologies. Pedestrians being run over by self-driving automobiles, a partially piloted drone crashing and causing damage, and an AI software program incorrectly diagnosing medical therapy are just a few examples given.<sup>cxviii</sup> It's a challenging topic to address and solve establishing liability guidelines for existing and future AI algorithms. The wide range of stakeholders involved, as

well as the lack of interpretability of many types of AI learning systems, must be considered.<sup>ccix</sup>

### **i. Accountability**

Accountability refers to the expectation that organizations and individuals will ensure the proper functioning of AI systems that they design, develop, operate, or deploy throughout their lifecycle, in accordance with their roles and applicable regulatory frameworks, and that they will demonstrate this through their actions and decision-making process (for example, by providing documentation on key decisions throughout the AI system lifecycle or conducting or allowing auditing where justified).<sup>cc</sup> Accountability demands for processes, Risk management, detecting and mitigating risks in a transparent manner, to be put in place to assure responsibility for the creation, deployment, and/or usage of AI systems.<sup>cci</sup>

## **VI. EU Digital Single Market Strategy**

*“A Digital Single Market is one in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, and a high level of consumer and personal data protection, irrespective of their nationality or place of residence.”*<sup>ccii</sup> The EU is being held back by fragmentation and restrictions that do not exist in the actual Single Market. Taking down these obstacles within Europe might add EUR 415 billion to the European economy.<sup>cciii</sup> A Digital Single Market can help new businesses get started while also allowing established businesses to grow and profit from the size of a market with over 500 million people.<sup>cciv</sup>

In order to achieve a Digital Single Market, the strategy must be built on three pillars:

- 1) Better access for consumers and businesses to online goods and services across Europe.<sup>ccv</sup>
  - a) Cross-border e-commerce rules that consumers and businesses can trust.
  - b) Affordable high-quality cross-border parcel delivery.
  - c) Preventing unjustified geo-blocking.
  - d) Better access to digital content - A modern, more European copyright framework.
  - e) Reducing VAT (value-added tax) related burdens and obstacles when selling across borders.
- 2) Creating the right conditions for digital networks and services to flourish.<sup>ccvi</sup>
  - a) Making the telecoms rules fit for purpose.
  - b) A media framework for the 21st century.

- c) A fit for purpose regulatory environment for platforms and intermediaries.
  - d) Reinforcing trust and security in digital services and in the handling of personal data.
- 3) Maximizing the growth potential of our European Digital Economy.<sup>ccvii</sup>
- a) Building a data economy.
  - b) Boosting competitiveness through interoperability and standardization.
  - c) An inclusive e-society.

The Digital Single Market Strategy's main objective is to create an environment that encourages investment in digital networks, research, and creative businesses.<sup>ccviii</sup> The digital economy relies heavily on innovative businesses. They'll need more money, including equity and venture capital, to succeed.<sup>ccix</sup> The scale given by a completed Digital Single Market will help companies in expanding beyond the EU internal market, making the EU an even more appealing place for international businesses.<sup>ccx</sup> Because the EU is the world's first exporter of digital services, barriers to global digital trade disproportionately damage European businesses.<sup>ccxi</sup>



Figure 20 Creating a Digital Single Market<sup>ccxii</sup>

## VII. AI and European Green Agenda

The European Green Deal aims to achieve ambitious environmental targets that will necessitate a green transformation of many aspects of society. Artificial Intelligence's (AI) revolutionary potential to contribute to the attainment of green transition goals has been progressively and widely recognized. Simultaneously, digital technologies such as AI significantly increase energy and resource consumption, posing a danger of negative environmental consequences..<sup>ccxiii</sup>

The use of Earth observation data in accordance with artificial intelligence allows for more effective, efficient, and timely monitoring of environmental impacts and trends, as well as fresh insights into driving forces and environmental impacts and improved forecasting capabilities.<sup>ccxiv</sup> AI-generated data may also assist consumers and organizations in adapting to more sustainable behavior.<sup>ccxv</sup>

Artificial intelligence used to monitor and optimize energy consumption can help with the integration of renewable energies into power networks, and it has the potential to help with the Green Deal's primary targets in the building industry. Agriculture applications may enable for more efficient use of water, pesticides, and fertilizers, potentially reducing environmental consequences. In principle, the same may be said about the transportation sector: AI-based technologies are already being utilized to improve transportation system and infrastructure design, increase engine efficiency, optimize charging of electric vehicles, coordinate many modes of transportation, and control and manage railway systems.<sup>ccxvi</sup>

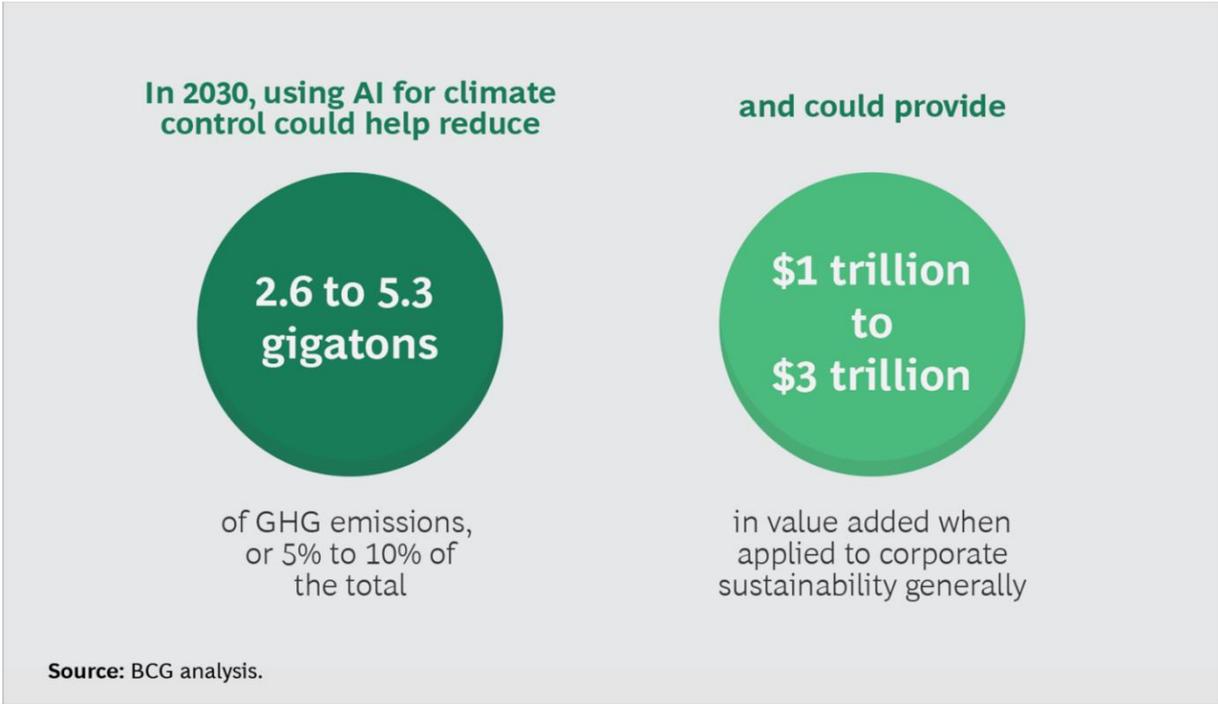


Figure 21 Reducing Costs and Carbon with AI<sup>ccxvii</sup>

The use of digital hardware and infrastructures such as data centers and networks has direct detrimental environmental consequences. This directly leads to an increase in the use of material resources and energy.<sup>ccxviii</sup> Given the growing importance of AI technologies and their extensive use of data, their contribution to ICT energy consumption is likely to increase dramatically.<sup>ccxix</sup> The energy efficiency of data centers and their operation with renewable energies will determine how much AI contributes to GHG emissions in the future.<sup>ccxx</sup>

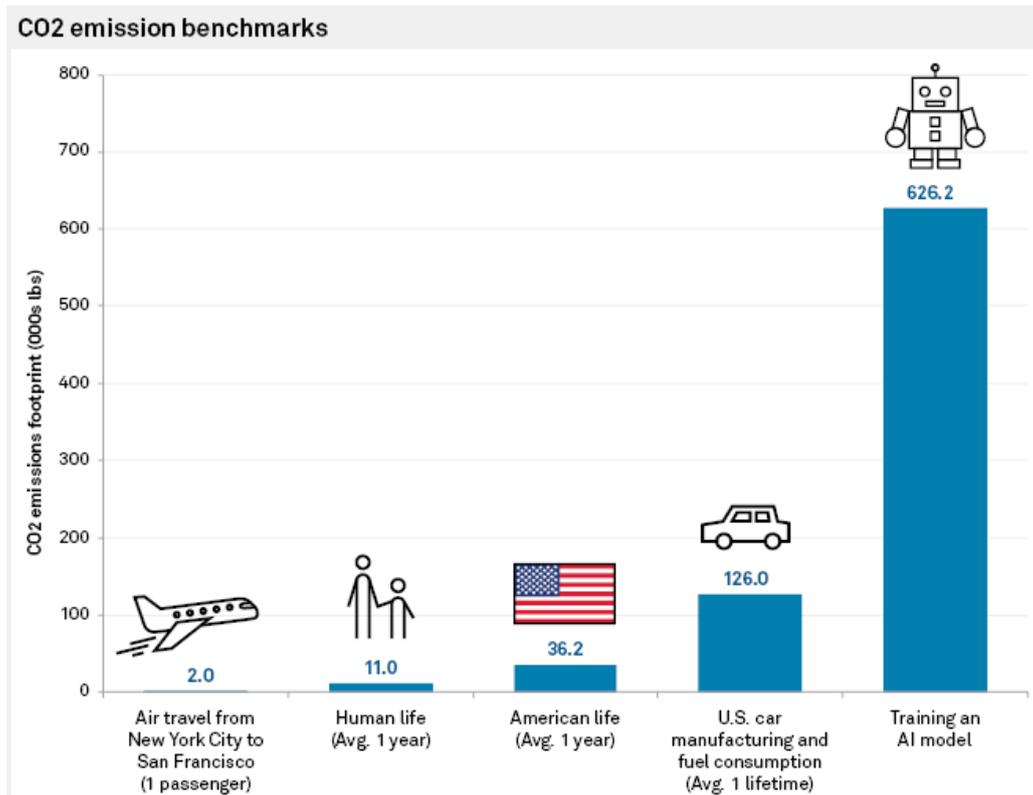


Figure 22 CO2 Emission Benchmarks<sup>ccxxi</sup>

Rebound effects emerge as a result of changes in consumer, user, or producer behavior, whether intended or unintended. Such consequences may be unexpected and even contradict an application's stated environmentally friendly function due to the opaque dynamics of AI system learning. Products designed to automatically manage and execute more efficient energy consumption, for example, may have the unintended consequence of leading customers to lose control of their energy consumption and overconsume.<sup>ccxxii</sup> Other negative environmental effects emerge from AI applications that contribute to GHG emissions and environmental degradation as a result of their usage, such as the use of AI to unlock oil and gas resources and to discover and develop new territory for fossil fuel exploitation.<sup>ccxxiii</sup>

## VIII. Problems Regarding AI

### a. Malicious Purposes of AI

Malicious use of AI could endanger digital security (for example, by training machines to hack or socially engineer victims at human or superhuman levels of performance), physical security (for example, by non-state actors weaponizing consumer drones), and political security (e.g. through privacy-eliminating surveillance, profiling, and repression, or through automated and targeted disinformation campaigns).<sup>ccxxiv</sup>

### **i. Deepfakes**

Deepfakes are one of the most common AI abuses, in which AI techniques are used to build or edit audio and visual content to make it appear legitimate. Deepfakes are a hybrid of "deep learning" and "fake media" that are well-suited for future disinformation operations because they are difficult to distinguish from real content even with technological solutions. Deepfakes can reach millions of people in different areas of the world at unprecedented rates thanks to the widespread usage of the internet and social media.<sup>ccxxv</sup>

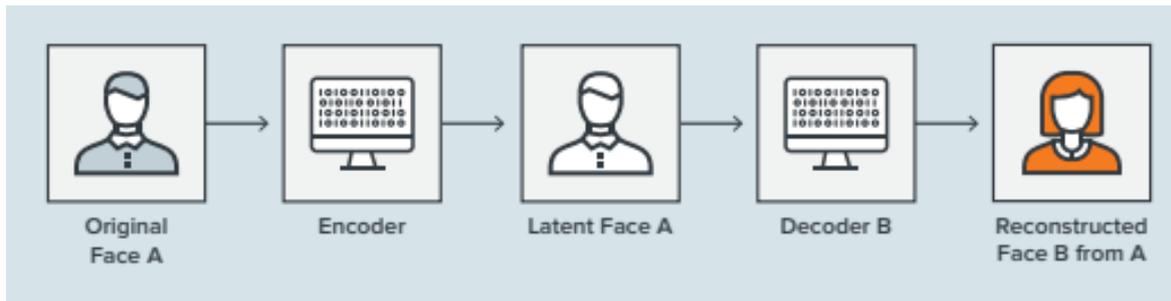


Figure 23 Deepfake Procedure<sup>ccxxvi</sup>

### **ii. Abusing Smart Assistants**

Targeting AI assistants, either by exploiting their presence in households or abusing their development process, is another way to attack AI systems. By designing adversarial systems or contaminating datasets, an AI assistant might be targeted in particular.<sup>ccxxvii</sup>

### **iii. AI – Supported Password Guessing**

It's feasible to evaluate a big collection of passwords and produce variations that fit the statistical distribution, such as for password leaks, by using neural networks and generative adversarial networks (GANs) in particular. As a result, password guesses become more targeted and efficient.<sup>ccxxviii</sup>

### **iv. Human Impersonation**

Intelligent systems that can imitate human behavior to trick bot detection systems on social media networks are one type of application. One of the main goals of these intelligent systems is to make money by defrauding people.<sup>ccxxix</sup>

## **v. Social Engineering**

In 2020, Europol reported that social engineering is still a major threat that is used to facilitate various types of cybercrime. Several interesting conversations about AI-enabled tools to improve social engineering tasks have been unearthed on various underground forums as evidence of these plans.<sup>ccxxx</sup> On the forum French Freedom Zone, the reconnaissance tool named “Eagle Eyes”<sup>45</sup> has been claimed as capable of finding all social media accounts associated with a specific profile. Accordingly, the program may even link accounts with different names by using face recognition algorithms to compare a user's profile images.<sup>ccxxxi</sup>

### **b. Lack of Investment**

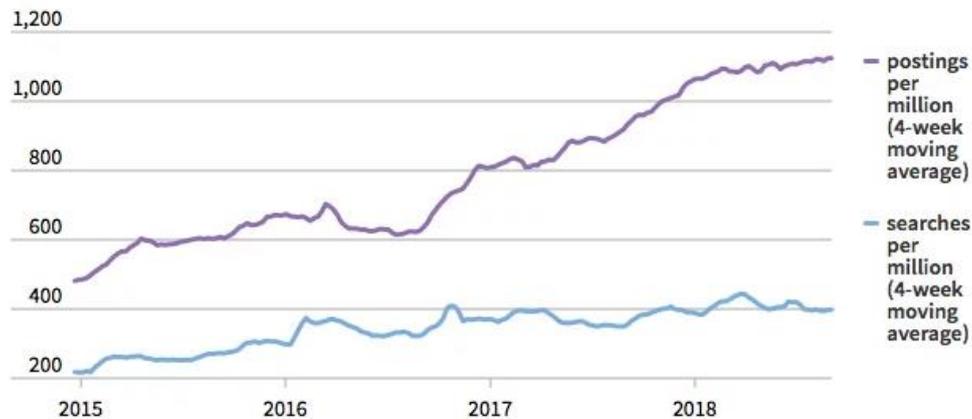
Most investors face a dilemma when it comes to investing in artificial intelligence. Simply said, no one knows how rapidly it will evolve, what kind of influence it will have on society and the economy, or how deadly it will be.<sup>ccxxxii</sup> Many AI startups gain a lot of attention but not enough money since most venture capitalists are risk averse and won't invest in something they don't understand.<sup>ccxxxiii</sup>

### **c. AI Skill Shortage**

As a result of AI and intelligent automation, as many as 120 million workers in the world's twelve largest economies will need to be retrained or reskilled in the next three years.<sup>ccxxxiv</sup> Given the widespread adoption of AI and machine learning technology, the number of AI professionals worldwide remains disturbingly low.<sup>ccxxxv</sup> A report identifies that there are 22,400 top AI academics around the world as of 2018.<sup>ccxxxvi</sup> As a result, AI is still a "job seeker's market," with plenty of openings in firms building technology for self-driving cars, smart home devices, digital assistants, and other applications. According to recent data, AI job posts increased by 29.1% in the last year – but, no doubt due to the AI skills gap, searches for AI-related positions declined by 14.5 percent over the same period.<sup>ccxxxvii</sup>

## Wanted: Artificial intelligence experts

In artificial intelligence, job openings are rising faster than job seekers.



AI-related jobs include machine learning engineer, predictive modeler, cmt analytics manager, data scientist, computer vision engineer, computational linguist, and information strategy manager.

Source: Indeed.com

Ann Saphir | REUTERS GRAPHICS

Figure 24 Job Listing for AI Experts<sup>ccxxxviii</sup>

### d. Inadequate data

The major goal of AI upgrades in any firm is to lower costs and boost profits, but given the "sad state of present data stockpiles," this isn't possible. According to current statistics, while 76 percent of firms want to use their data to extract commercial value, just 15 percent have access to the right kind of data to do so.<sup>ccxxxix</sup> Data quality issues always appears in "historical data," which could have been compiled from a variety of sources with varied standards and levels of accuracy. Apart from standardizing data formats, PWC analysts believe that data privacy and security must also be handled aggressively in order to comply with requirements such as GDPR..<sup>ccxl</sup> According to CIO, prominent corporations are abandoning AI projects too soon. These cost-conscious business executives recognize that until the data ecosystem is greatly enhanced, their investments would be lost..<sup>ccxli</sup>

Furthermore, only a certain amount of data is "representative" of a whole collection, not the entire dataset. Most datasets, in actuality, contain incorrect, duplicate, and missing data, resulting in wasted IT investments and a loss of trust in data and decision-making that is based on data.<sup>ccxlii</sup>

Even if a machine learning system is well constructed, it will generate poor predictions if it is trained on insufficient or erroneous data. For example, in 2015, Google Photo branded black software developer Jacky Alcine and his friend as "gorillas" because the data used to train the

algorithm most likely did not include enough images of people of various racial and ethnic origins.<sup>ccxliii</sup>

## **IX. Stances**

### **a. Party Stances**

#### **i. Group of the European People's Party**

EPP Group is mostly in favor of development and integration of AI, if Europe is in the center of this process. In addition, the EPP Group wants a legal framework that prevents unlawful surveillance, the spread of disinformation and the use of social scoring - as used in countries such as China.<sup>ccxliv</sup>

For the deployment of AI, the EPP Group advocates for high ethical standards, liability restrictions, and openness. The EPP Group aspires to build a truly European Innovation Union that will improve people's lives while remaining globally competitive. Too many folks are fearful of technological change; EPP reassures them that technology has a positive impact on our society and that it will improve lives. People must be at the center of innovation.<sup>ccxlv</sup>

#### **ii. Group of the Progressive Alliance of Socialists and Democrats in the European Parliament**

S&D Group is in favor of development and integration of AI with the condition that the citizens' rights must come first, they say that AI should be human-centric and ethical. S&D believe that technical progress should never come at the expense of people's fundamental rights. They believe that AI technologies should never reinforce discrimination or do more harm than good, when used by judicial and law enforcement authorities.<sup>ccxlvii</sup> S&D insists that AI rules must enhance social and democratic principles respecting fundamental rights, such as privacy and non-discrimination.<sup>ccxlvii</sup>

#### **iii. Renew Europe**

Renew Europe is in favor of development and integration of AI with focus on innovation, research and fundamental rights. They support that providing European companies and start-ups the legal clarity to innovate, grow and be competitive will allow them to thrive not only in the European Market, but also in the global market.<sup>ccxlviii</sup>

#### **iv. Group of the Greens/European Free Alliance**

The Greens/EFA is in favor of development and integration of AI however they are strictly against any kind of authoritarian act with usage of AI. They believe that anti-discrimination, control and consumer protection in AI should be in the center of discussion when debating on AI related topics. They believe that AI should be transparent, supervised by humans, abides by the law and should be regulated under a risk-based approach.<sup>ccxlix</sup>

#### **v. Identity and Democracy**

ID Group is in favor of development and integration of AI; however, they are mostly concerned about the misinformation and fake news that can be created by AI which may affect democracy on a great scale.<sup>cccl</sup> ID group believes that AI may cause a threat when foreign governments deploy misinformation via AI as one of the soft power tools and emphasizes on the fact that EU must be cautious and regulate AI in regards to that manner.<sup>cccli</sup>

#### **vi. European Conservatives and Reformists Group**

ECR is against a centralized system to control advanced robots unlike EPP and S&D. In addition, ECR is also highly in favor of robots such as care robots. ECR is against any kind of cybernetic enhancements that may be done via AI and such. ECR is also against the idea of introducing a legal status of electronic persons for robots in the long-run.<sup>ccclii</sup>

#### **vii. The Left Group in the European Parliament – GUE/NGL**

GUE/NGL is mostly in favor of development and integration of AI as long as it is human-centered. They believe that AI technology should be in full compliance with fundamental right standards set out in law and the promotion of social inclusion, sustainability and fairness. They believe that any kind of facial recognition system must be banned to guarantee privacy protection for all individuals, including migrants, women and people of color.<sup>cccliii</sup>

### **b. Country Stances**

#### **i. Austria**

The Austrian government has taken a leading role in developing policy proposals, rather than private enterprises, for the future of AI in the country. In November 2018, the Council released a white paper titled Shaping Austria's Future with Robotics and Artificial Intelligence, which included policy suggestions on robotics and AI in the areas of smart governance, smart innovation, and smart regulations. The Federal Ministry also emphasizes

the application of AI in court processes evaluation. The Austrian government released the policy report "Artificial Intelligence Mission Austria 2030," which lays the groundwork for an official AI strategy.<sup>ccliv</sup>

## **ii. Belgium**

In the first quarter of 2021, the Belgian government intended to unveil its national AI policy. The national AI strategy's goal is to establish a strategic and operational action plan for the advancement of artificial intelligence in Belgium. It summarizes the AI4BELGIUM coalition's policy report and outlines ongoing actions and plans for the future along three strategic pillars and thematic priorities:

*“Creating a technological impact by supporting high-quality expertise in AI and outlining a responsible data strategy for AI; Ensuring social and economic benefits by encouraging continuous skills development in AI, building a robust and prosperous AI economy and optimizing public services through AI; Building appropriate conditions for the development of an ethical, resilient and secure society through AI”.*<sup>cclv</sup>

The Belgian AI plan outlines policy initiatives at the federal and regional levels, with separate sections for the Federal State, Flanders, Wallonia, Brussels Capital, and the Wallonia-Brussels Federation.<sup>cclvi</sup>

## **iii. Bulgaria**

The Bulgarian AI strategy outlines policy measures for the development of artificial intelligence in Bulgaria from 2020 to 2030. It presents a comprehensive policy vision for the development and application of AI in Bulgaria, including key areas of effect such as infrastructure and data availability, research and innovation capacity, knowledge and skills, and societal trust. The following are the goals<sup>cclvii</sup>:

*“Nurturing a solid knowledge and skills base in AI; Developing a strong research capacity for scientific excellence; Supporting innovations to foster the implementation of AI in practice; Building a reliable infrastructure for AI development; Ensuring sustainable conditions for financing AI developments; Raising awareness and building trust in society; Creating a regulatory framework for the development and use of reliable AI in accordance with international regulatory and ethical standards”.*<sup>cclviii</sup>

#### **iv. Croatia**

Croatia's government is developing a national AI strategy at the moment. The AI plan is being developed by a working group comprised of specialists from academia, business, civil society, and the public sector. The working group has completed a preliminary draft of the National Plan for Artificial Intelligence Development, which includes policy measures and initiatives for the years 2021-2025. In 2021, the strategy was to be finalized in its final form.<sup>cclix</sup>

#### **v. Republic of Cyprus**

Council of Ministers of Cyprus has approved a National AI strategy focusing on:

*“Cultivating talent, skills and lifelong learning; Increasing the competitiveness of businesses through support initiatives towards research and innovation and maximizing opportunities for networking and partnerships; Improving the quality of public services through the use of digital and AI-related applications; Creating national data areas; Developing ethical and reliable AI”.*<sup>cclx</sup>

#### **vi. Czech Republic**

The Czech Republic published its National AI strategy in May 2019, which builds on the Innovation strategy 2019–2030 and the Digital Czech Republic strategy. The goal of this AI plan is to boost national economic growth and AI competitiveness by implementing the following measures<sup>cclxi</sup>:

*“A responsible and trusted AI ecosystem; The digitalization of enterprises, in particular SMEs; Equitable opportunities and benefits in AI to boost the economic development of society. The Czech government plans policy actions in important sectors such as education, R&D support, financing, industry, social impacts, legislation, and international collaboration to achieve these goals”.*<sup>cclxii</sup>

#### **vii. Denmark**

The Danish government released their national AI policy in March 2019. Its goal is to position Denmark in the forefront of responsible AI development, and it lays forth four objectives to do so<sup>cclxiii</sup>:

*“Develop a common ethical and human-centered basis for AI; ”prioritize and support research in AI; Encourage the growth of Danish businesses by developing and using AI; Ensure that the public sector uses AI to offer world-class services for the benefit of citizens and society”.*<sup>cclxiv</sup>

The strategy originally included 24 activities for which the Danish government has set aside EUR 9.2 million for the years 2019-2027. Since then, the funding has been reprioritized and reduced to EUR 5 million.<sup>cclxv</sup>

### **viii. Estonia**

Estonia's national AI plan was proposed by the Ministry of Economic Affairs and Communications. Estonia's plan gives a thorough summary of existing and prospective policy actions, as well as their goals, timelines, and financial estimates. The strategy's goal is to fully realize AI's potential by creating and executing legislative initiatives in the following areas: Encouraging the use and development of AI applications in both the public and private sector; Providing direct support to research in AI and increasing the relevant skills and competencies to do so; Developing a legal environment to facilitate the uptake of AI. In order to achieve its AI policy, the Estonian government expects to invest at least EUR 10 million in 2019-2021.<sup>cclxvi</sup>

### **ix. Finland**

The Finnish Ministry of Economic Affairs and Employment released its national AI plan, Finland's Age of Artificial Intelligence, in October 2017. The goal was to establish Finland as a world leader in artificial intelligence. Finland has since enacted an open data policy with the goal of creating favorable conditions for AI research. Overall, the strategy strived to: *“Increase the competitiveness of business and industry; Provide high-quality public services and improve the efficiency of the public sector; Ensure a well-functioning society and wellbeing for its citizens”.* Finland's AI Business Program has been given EUR 100 million over four years. For the years 2019–2022, the Finnish Center for Artificial Intelligence has been awarded EUR 8.3 million in flagship financing.<sup>cclxvii</sup>

## **x. France**

The President of the French Republic, Emmanuel Macron, outlined his vision and a 5-year national AI policy in March 2018. AI for Humanity is the name of the French AI strategy. The main objectives of the French AI strategy as highlighted by the French President are to: *“Improve the AI education and training ecosystem to develop, retain and attract world-class AI talent; Establish an open data policy for the implementation of AI applications and pooling assets together; Develop an ethical framework for a transparent and fair use of AI applications”*. To this purpose, By the end of 2022, the French government plans to invest EUR 1.5 billion on AI development, including EUR 700 million in research.<sup>cclxviii</sup>

## **xi. Germany**

The German Federal Government announced its National AI Strategy in November 2018. The strategy outlines Germany's progress in terms of AI, as well as future goals and a detailed plan of policy actions to attain them. The range of policy initiatives outlined in the strategy aim to achieve the following goals<sup>cclxix</sup>:

*“Increasing and consolidating Germany’s future competitiveness by making Germany and Europe a leading center in AI; Guaranteeing a responsible development and deployment of AI which serves the good of society; Integrating AI in society in ethical, legal, cultural and institutional terms in the context of a broad societal dialogue and active political measures”*.<sup>cclxx</sup>

With the Economic stimulus and future package, The German Federal Government has pledged to enhance the budgeted EUR 3 billion investment in AI promotion by EUR 2 billion by 2025, bringing the total investment to EUR 5 billion.<sup>cclxxi</sup>

## **xii. Greece**

Greece is working on a national AI strategy currently. The Digital Transformation Bible (DTB), Greece's flagship policy paper that drives the digital transformation, recognizes AI as one of the primary strategic axes. This flagship study describes the breadth and aim areas of Greece's national AI plan in one of its chapters<sup>cclxxii</sup>.

*“Determining the conditions for the development of AI, including the skills and trust framework, the data policy as well as the ethical principles for its safe development and use; Describing national priorities and areas for maximizing the benefits of AI to meet societal challenges and economic growth; Analyzing the necessary actions related to the above priorities and proposing horizontal interventions as well as at least one pilot application per policy area”*.<sup>cclxxiii</sup>

### **xiii. Hungary**

On the Ministry's suggestion, the AI Coalition was founded in October 2018 as a partnership of governmental institutions, prominent academics, and practitioners from top IT enterprises. The AI Coalition, which has over 320 members, released an AI Action Plan in October 2019 and drafted Hungary's AI Strategy for the Hungarian Government in 2020. The Hungarian government released its National AI strategy in September 2020, presenting the strategic vision and activities for AI development in the years 2020-2030. Hungary's AI policy intends to support and increase all important portions of the AI value chain, from data collection and management to fundamental and applied research, to technology usage and raising awareness of the opportunities inherent in practical AI applications. Through a multi-layered set of goals the strategy aims to<sup>cclxxiv</sup>:

*“Strengthen the foundation pillars of the Hungarian AI ecosystem: data economy, research development and innovation (R&D&I), AI uptake, education and competence development, infrastructure deployment, and regulatory and ethical framework; Focus on specific sectors and technology fields with the highest acceleration potential for Hungary: manufacturing, healthcare, agriculture, public administration, transportation, logistics and energy; Initiate transformative programmes with long term ambitious goals that offer direct benefits to citizens: autonomous systems and self-driving vehicles, health-consciousness in a digital world, climate-driven agriculture, data-wallet and personalized services, AI-supported development of personal competencies, automated administration procedures in Hungarian, and energy networks focused on renewable sources of energy”*.<sup>cclxxv</sup>

### **xiv. Ireland**

Ireland's Department of Enterprise, Trade and Employment (DETE) is leading the way in developing a national AI strategy. The National AI Strategy for Ireland, dubbed "AI - Here

for Good," will establish an integrated, cross-Government framework for ensuring that Ireland's use of AI benefits the economy and society. The primary areas covered by the strategy are expected to be as follows, in line with EU and OECD approaches: *“societal opportunities and challenges of AI; enterprise development and deployment of AI; RD&I; human capital considerations; data; digital and connectivity infrastructure; public sector use of AI; as well as ethics, governance, standards and regulatory framework”*.<sup>cclxxvi</sup>

#### **xv. Italy**

The Italian Ministry of Economic Development published a draft version of its National AI plan for public comment in October 2020. The draft AI plan lays out a long-term vision for AI's long-term growth, including the following activities to boost AI's development and competitiveness in Italy<sup>cclxxvii</sup>:

*“Improving AI education at all levels, and providing lifelong learning and reskilling opportunities to the labor force; Fostering AI research and innovation to enhance the entrepreneurial competitiveness; Establishing an ethical regulatory framework for a sustainable and trustworthy AI; Supporting (international) networks and partnerships; Developing a data infrastructure for AI applications; Improving public services through a wider adoption and use of AI systems”*.<sup>cclxxviii</sup>

The Italian strategy envisages a public investment of EUR 2.5 billion.<sup>cclxxix</sup>

#### **xvi. Latvia**

The Latvian government published their national AI strategy on developing artificial intelligence solutions in February 2020. The suggested strategy covers policy activities in the following areas, with a special emphasis on the promotion of AI in government<sup>cclxxx</sup>:

*“Raising the awareness of and competencies in AI across society through education reforms; Promoting the adoption and development of AI in the public and private sector; Engaging actively in national and international cooperation; Developing a solid legal and ethical framework for AI; Unleashing the benefits of a well-developed data ecosystem; Investing in a digital and telecommunication infrastructure to support AI developments”*.<sup>cclxxxi</sup>

The Ministry of Interior plans to spend approximately € 1.5 million on digitalization with a focus on AI.<sup>cclxxxii</sup>

### **xvii. Lithuania**

The Lithuanian Artificial Intelligence Strategy: A Vision for the Future was announced in March 2019 by the Ministry of Economy and Innovation. The strategy includes an analysis of Lithuania's existing AI ecosystem as well as policy proposals in important sectors, with the goals of<sup>cclxxxiii</sup>:

*“Improving the skills and education in AI for all citizens; Strengthening the national research and innovation ecosystem in the field of AI; Increasing the deployment, development and use of AI in all economic activities, including both the private and public sector; Promoting national and international collaborations in AI and enhancing network opportunities; Developing an ethical and legal framework for a sustainable and transparent development of AI applications; Establishing a responsible and efficient data ecosystem for AI”.*<sup>cclxxxiv</sup>

The Lithuanian strategy does not include concrete policy initiatives but merely serves as a guiding document for all actors in the country with policy recommendations. It does not outline financial provisions for the implementation of the strategy.<sup>cclxxxv</sup>

### **xviii. Luxembourg**

The Luxembourg government released their national AI policy in May 2019, titled Artificial intelligence: a strategic vision for Luxembourg. The strategy serves as a vision paper, describing Luxembourg's AI goals and providing strategic policy recommendations in important areas to help them be realized. Luxembourg's policy aim is to foster the development of a human-centric AI ecosystem based on an efficient and long-term data-driven ecosystem. Its goal is to establish Luxembourg as a global leader in digital society. The strategy proposes a range of policy proposals in the following key areas to attain these goals<sup>cclxxxvi</sup>.

*“Enhancing the skills and competencies in the field of AI and providing opportunities for lifelong learning; Supporting research and development of AI, transforming Luxembourg in a living lab for applied AI; Increasing public and private investments in AI and related technologies; Fostering the adoption and use of AI in the public sector; Strengthening opportunities for national and international networks and collaborations with strategic partners in AI; Developing an ethical and regulatory framework, with particular attention for privacy regulation and security to ensure transparent and trustworthy AI development; Unleashing the potential of the data economy, as a cornerstone of AI development”*.<sup>cclxxxvii</sup>

The national AI strategy of Luxembourg does not disclose financial provisions or estimations for its implementation.<sup>cclxxxviii</sup>

#### **xix. Malta**

Malta's national AI policy was published by the Maltese government in October 2019. The policy study lays out three pillars on which Malta's AI strategy will be built: *“The creation of a solid AI ecosystem based on investments, start-up support and innovation; Support for increased adoption of AI in the public sector; Support measures for the adoption of AI in the private sector”*. The successful achievement of these objectives relies on three horizontal enablers that cut across the three aforementioned areas: education and workforce, legal and ethical framework and infrastructure. The Maltese AI strategy lacks inclusion of financial provisions or estimations for its overall implementation.<sup>cclxxxix</sup>

#### **xx. Netherlands**

The Dutch government issued its Strategic Action Plan for Artificial Intelligence in October 2019. The Dutch AI strategy is built on three strategic pillars that aim to<sup>ccxc</sup>:

*“Capitalizing on societal and economic opportunities: policies encouraging the adoption, use and development of AI in the private and public sector and promoting the use of AI to tackle societal challenges; Creating the right conditions: policies supporting education and skills development in AI; fostering research and innovation in AI, facilitating the access to qualitative data and improving the digital infrastructure; Strengthening the foundations: including policy actions related to ethical issues, such as trust, human rights, consumer protection, and safety of citizens”*.<sup>ccxci</sup>

The annual state budget for AI innovation and research in the Netherlands is anticipated to be EUR 45 million per year, according to an annex to the Dutch strategy. This budget was EUR 64 million in 2019.<sup>ccxcii</sup>

## **xxi. Poland**

The Polish national AI policy, titled Policy for the Development of Artificial Intelligence in Poland from 2020, was endorsed by the Council of Ministers in December 2020. Its actions are centered on society, education, research, business, public affairs, and international relations, with the strategic purpose of defending people's human dignity and promoting fair competition in global competition. In ethical, legal, technical-operational, and international dimensions, Poland adopts the Trustworthy AI ethical framework and creates a mechanism for a flourishing Polish AI ecosystem. In particular, the Polish strategy is providing strategic guidance and policy initiatives to develop a holistic AI ecosystem with the aim of meeting the following objectives<sup>ccxciii</sup>:

*“Reforming the educational system and providing lifelong learning opportunities in AI-related fields; Encouraging growth and innovation of AI companies through dedicated support in AI research, including the provision of sufficient financial resources; Increasing national and international partnerships in AI; Creating a data ecosystem with trustworthy and high-quality data and increased data exchange mechanisms; Reinforcing the digital infrastructure, regulatory framework and test environments to foster the development of AI innovations”.*<sup>ccxciv</sup>

In terms of funding, the Polish strategy outlines the most important public programs that promote the growth of innovation and innovative businesses, as well as projects related to the development and implementation of AI-based solutions.<sup>ccxcv</sup>

## **xxii. Portugal**

The Portuguese government released the national strategy AI Portugal 2030 in June 2019, outlining the problems and potential of the country's burgeoning AI ecosystem. This strategy outlines the steps that will be taken in the next few years to encourage the use of AI in both the public and business sectors. Because people are the main engine of a successful AI deployment, the strategy focuses its activities on inclusiveness, education, certification,

specialization, and research. Portugal's national AI policy does not include any budgetary figures or estimates for its execution.<sup>ccxcvi</sup>

### **xxiii. Romania**

Romania's plan is to ensure that safe AI applications are used in everyday life, as well as to support foundational research that leads to true AI applications and breakthroughs, all while respecting human rights and societal values.<sup>ccxcvii</sup>

### **xxiv. Slovakia**

Slovakia's AI strategies are part of a larger digitization agenda. The Action Plan for Slovakia's Digital Transformation for 2019–2022 was announced by the Slovakian Government in July 2019. The following is a list of short-term policy proposals outlined in the Slovakian Action Plan: *“Supporting the digital transformation of schools and education to promote skills for the digital era; Strengthening the digital basis of the data economy; Improving the capacity of public administrations to use data for the benefit of citizens; Supporting the AI ecosystem”*. With regards to funding, the Analysis for budgetary implications for public administration accompanies the Action plan with general information of government budget for the coming years.<sup>ccxcviii</sup>

### **xxv. Slovenia**

The Slovenian government presented a draft National program encouraging the development and use of AI in the Republic of Slovenia by 2025 (NpUI) for public feedback in August 2020, with the intention of releasing the official AI program in 2021. From 2020 to 2025, the NpUI consists of a set of strategic objectives and tangible actions aimed at boosting Slovenia's research and innovation capability as well as international competitiveness in the field of AI. Because AI is a multidisciplinary field, the program includes comprehensive strategy initiatives. The strategic goals are as follows<sup>ccxcix</sup>:

*“Creating a supportive ecosystem for research, innovation and AI deployment; Strengthening technological and industrial capacities in the field of AI; Implementing reference AI solutions in the industry, public sector, public and state administration and society; Enhancing international cooperation; Ensuring an appropriate ethical and legal framework to increase public trust in AI; Launching a National AI*

*Observatory; Establishing a cutting-edge data and computing infrastructure for AI*".<sup>ccc</sup>

Slovenia has set aside EUR 110 million in public funds until 2025 to achieve these strategic goals.<sup>ccci</sup>

## **xxvi. Spain**

The Spanish Government released its National AI strategy in December 2020. In particular, the national AI strategy highlights the following objectives<sup>cccii</sup>:

*“Promoting the development of human capital in AI through the development of a large base of skilled employment, the provision of training and education opportunities, the stimulation of Spanish talent and the attraction of global talent towards Spain; Developing solid scientific excellence in the field of AI to promote Spain as a leading country in AI; Placing Spain as a leader in the development of tools, technologies and applications for the projection and use of the Spanish language in AI; Boosting the deployment and use of AI technologies in both the public and private sector, including also cross-cutting sector activities and grand challenges; Guaranteeing an ethical framework that outlines individual and collective rights and builds an environment of trust in AI; Ensuring inclusiveness in the AI-driven economy, by reducing gender gaps and digital divides while supporting ecological transition and territorial cohesion”*.<sup>ccciii</sup>

In terms of funding, the Spanish government anticipates a EUR 600 million public investment for the creation and execution of the national AI policy between 2021 and 2023.<sup>ccciv</sup>

## **xxvii. Sweden**

Sweden's national AI policy, National approach for artificial intelligence, was unveiled in May 2018. This plan will be used by the government to define upcoming policy efforts aimed at improving Sweden's welfare and competitiveness using AI. To this purpose, the Swedish strategy focuses on the following priority areas: *“Education and training; Research; Innovation and use; Framework and infrastructure”*. In terms of funding, Vinnova – Sweden’s Innovation Agency - funded AI projects for EUR 67.5 million in 2020. The total sum for AI projects that Vinnova helped fund was EUR 135 million, 50% of this could be private funding or funding from other national programs. In the national budget for innovation

and research until 2024 at least SEK 550 million (approx. EUR 55 million) has been assigned to research and innovation in digital technologies and AI and its use and impact on society.<sup>cccv</sup>

## **X. Conclusion**

AI is using technology to automate tasks that “normally require human intelligence.”<sup>cccvi</sup> For instance, when humans play chess, they employ a range of cognitive capabilities, including reasoning, strategizing, planning, and decision-making and the technology of AI allows us to simulate the process of cognitive thinking in computers. However, how human an AI is debated fiercely and there are tests that are run to determine the human-likeness of an AI entity. There are 3 types of AI: ANI, AGI and ASI. Even though ASI has not been reached, it has been projected that when AGI’s are used in a great and efficient scale, we will not be far from reaching ASI’s.<sup>cccvii</sup>

Working mechanisms of AI all stem from machine learning algorithms. These algorithms are fed data from an ecosystem called big data or deep data. Big Data and Deep Data comes together to form a Data Economy. A data economy consists of big data being used in sectors such as Healthcare, Public Sector, Finance and Insurance, Telecom, Media and Entertainment, Retail, Manufacturing, Energy and Transport. Europe is aiming to create a European Big Data Ecosystem by having a European Data Strategy that utilizes big data in aforementioned sectors. However, with Data practices, one of the most malicious usages of AI which is Surveillance Capitalism is used, a topic that is mostly opposed in European Parliament.<sup>cccviii</sup>

One of the focuses of the European Union is how to integrate AI into SMEs. SMEs would benefit from AI in the areas such as market performance, automation of daily tasks, improvement of business environment. However, there are challenges such as high cost and uncertainty of the market, legal risks, the human factor, lack of data culture and weak data management.<sup>cccix</sup>

Ethical side of AI is quite complicated to debate and regulate due to challenges such as privacy and surveillance, manipulation of behavior, opacity, bias in decision systems and human-robot interaction. There is also the possibility of mass unemployment with the introduction of AI and Automation. In order to address such challenges, OECD has set principles on AI in addition to the EU setting ethical guidelines of trustworthy AI.

AI from a legal perspective is lacking in terms of regulations right now. There is a lack of algorithmic transparency due to black box AI, there are cybersecurity vulnerabilities, there are

right violations because of unfairness, bias and discrimination, there is a lack of contestability and intellectual property right issues. Due to the disruptive nature of the AI technology, there may be some jobs lost and this situation may cause problems with workers' rights. Most clear legal issue is lack of liability and accountability in case something goes wrong with the AI algorithm.

AI technology right now is exploitable due to its new nature. It hasn't been regulated to its full extent and there are multiple malicious uses of AI such as deepfakes, abusing smart assistants, AI supported password guessing, human impersonation and social engineering. There is also a clear lack of investment in AI areas in addition to having inadequate data with an AI skill shortage.<sup>cccx</sup>

## **XI. Questions to be Addressed**

- **When an AI is considered High-Risk?,**
- **What constraints on the EU to implement AI and use Big Data to their markets and systems? (Data economy and its subtopics)**
- **How can the EU attract more investment into the AI industry?**
- **How can citizens be trained regarding the topic of privacy and its relation to opaqueness of AI?**
- **To what extent human oversight is needed when working with an AI?**
  - **Should this be legally binding?**
- **To what extent processing biometric data should be allowed?**
- **What would make a data set trustable or not trustable?**
- **How can the EU create a sufficient framework to prevent surveillance capitalism and manipulation of behavior through nudges, as well as blocking out political propaganda used to steer voting behavior?**
- **How can Surveillance Capitalism affect democracy when it comes to personalization of advertisement, news provision, and propaganda?<sup>cccxi</sup>**

- **What can be done in order to detect deep-fakes that may become unreliable evidence?**
- **How can the EU create a healthy European Big Data Ecosystem?**
  - **What kind of systems would the EU implement in order to encourage data sharing between data users to create an efficient and reliable data pool?**
  - **How can the EU encourage its citizens to pursue big data related professions?**
  - **How can the EU attract SMEs into the AI market?**
  - **How can the EU inform businesses regarding the benefits of AI in the workplace?**
  - **How can the EU help businesses that want to get into the AI market however are intimidated by the challenges the AI market will pose to them?**
- **How can AI be trained on data sets that are sufficiently broad and cover all relevant scenarios in order to avoid dangerous situations?**
  - **How can these data sets be acquired?**
  - **What should be the selection criteria for these data sets?**
  - **What kind of scenarios these data sets have to consist of?**
- **How can the data sets that are required to train AI's be stored safely, without violating privacy rights?**

### **Additional Reading**

These readings are not necessary; however, it'd be beneficial for you delegates to read them in order to grasp the issue fully. As the number of stars (\*) grow in number, more recommended that reading is.

- **New Horizons for a Data-Driven Economy by José Maria Cavanillas, Edward Curry, Wolfgang Wahlster\***
- **Big Data in the Finance and Insurance Sectors by Kazim Hussain and Elsa Prieto\*\*\***
- **Analytics: The Real-World use of big data in manufacturing by IBM\***
- **Big Data in the Energy and Transport Sectors by Edward Curry\***
- **EU BIG Big Data Public Private Forum Project\***

- A European Strategy for Data Brussels 19.2.2020 COM(2020) 66 Final\*\*\*
- General Data Protection Regulation (EU) 2016/679\*
- Diana Victoria Pfau, “The GDPR, Surveillance Capitalism, AI and the Personalization of Information and Advertisement: A Clash of Ideologies and Pitfalls for Democracy” Master’s Thesis\*\*
- OECD Principles on AI\*
- Liability for Artificial Intelligence and Other Emerging Digital Technologies (EU) \*\*\*
- A Digital Single Market Strategy for Europe (EU) 6.5.2015 COM(2015) 192 Final\*\*
- Malicious Uses and Abuses of Artificial Intelligence, Published by Trend Micro\*
- SME’s and AI: [https://www.oecd-ilibrary.org/sites/01a4ae9d-en/index.html?itemId=/content/component/01a4ae9d-en#section-d1e25237\\*\\*\\*\\*](https://www.oecd-ilibrary.org/sites/01a4ae9d-en/index.html?itemId=/content/component/01a4ae9d-en#section-d1e25237****)

## **SOCIAL CLIMATE FUND**

### **Subject Matter and Scope**

The adoption of the “European Green Deal” as a growth strategy of the EU, will usher in a period of drastic economic renewal. A renewal of such a scale will inevitably create new opportunities whilst undermining existing ones. Since the aim is to make Europe the first climate-neutral continent by 2050<sup>cccxi</sup>, the first significant repercussions of a full-scale energy transition will be felt in Europe before others. Fossil fuels will become increasingly redundant through the course of the energy transition, so the price of the fuels will have to increase. This increase may have effects on ‘vulnerable households, vulnerable micro-enterprises and vulnerable transport users’.<sup>cccxiii</sup> It should be noted that these effects may vary and have disproportionate consequences in some relatively underdeveloped regions. The EU, in order to mitigate the impact of price changes on its constituents, devises the ‘Social Climate Fund’. The aforementioned targeted groups, namely ‘vulnerable households, vulnerable micro-enterprises and vulnerable transport users’ are the essential scope of the proposal. The proposal involves alleviating the negative effects of the economic transition on these stakeholders by making alterations in the buildings to render them carbon-free, providing

income support, engaging in regional investments, facilitating access to green transportation and so on.

## **European Green Deal**

The ‘‘European Green Deal’’ is a set of policy initiatives constituted by the European Commission with the inclusive purpose of achieving a climate neutral European Union (EU) by the year of 2050. It is a crystal-clear fact that global warming and climate change are substantial problems and as a matter of fact, they threaten Europe and the whole World. The main aim of European Green Deal is coming through the consequences of these significant problems by converting the EU into a resource-efficient economy, entrenching the targets of ‘‘no net emissions of greenhouse gasses by 2050’’, ‘‘economic growth decoupled from resource use’’, ‘‘no person and no place left behind’’.<sup>cccxiv</sup> The European Green Deal has the aim of lifting the effective usage of resources by transforming to a clean, eco-friendly, circular economy and eliminating climate change, bio-diversity loss, urban stress, waste production and pollution. It covers sectors of agriculture, energy, buildings, transport, economy and industries like textiles and chemicals.<sup>cccv</sup> At this juncture, it is an utmost point to keep in mind the important statistics regarding the Green Deal in Europe. For instance, In regards to climate change, carbon dioxide levels are predicted to double by the year of 2030 with Europe's temperature expected to increase by 2-3 °C in the summer season.<sup>cccvi</sup> Against the backdrop of the ‘‘Paris Agreement’’, and considering present time’s emission statistics, since 1990 EU emissions have already dropped by 25% in 2019, a 55% reduction target using 1990 as baseline represents in 2019 terms a 40% reduction target.<sup>cccvii</sup>

### **1- Significant Steps That Are Taken by EU:**

#### **A- The Plan & The Place of Carbon Border Adjustment Mechanism (CBAM):**

The plan of making the European Union the first climate-neutral block by 2050 -The Green Deal- has many purposes projecting into various sectors such as but not limited to transport, food, and energy. The plan also includes the Carbon Border Adjustment Mechanism (CBAM) which is a proposed carbon tariff on carbon intensive products, such as cement and some electricity, imported by the European Union.<sup>cccviii</sup> Currently being legislated as part of the

European Green Deal it is likely to take effect in 2026 with reporting starting in 2023. The price of CBAM certificates would be linked to the price of EU allowances under the European Union Emissions Trading System and it is designed to stem carbon leakage from countries without a carbon price.<sup>cccxi</sup>

### **B- InvestEU:**

The EU plans to finance the whole Green Deal Project through an investment plan which is InvestEU. InvestEU estimates at least €1 trillion in investment and for that matter, in order to accomplish the objectives, approximately €260 billion a year is going to be required by 2030 in investments.<sup>cccxi</sup>

### **C- Fit for 55:**

‘Fit for 55’ is basically the plan of the European Union to reduce greenhouse gas emissions by 55% by 2030. The European Commission offered this package in July 2021. It might become officially law by 2022 after a precipitated legalization process. The precautions that are included in Fit for 55 also involve additional measures for renewable energy, clean transport and the tariff named the Carbon Border Adjustment Mechanism (CBAM). It advises to extend the Emissions Trading Scheme to heat and transport. The plan comprises much more precautions to entrench that energy remains affordable when it is compared to the International Energy Agency, which advises a net-zero scenario.<sup>cccxi</sup>

## **2- Policy Areas**

### **A- Clean Energy:**

In order to achieve the target of climate neutrality, which is the main aim of the European Green Deal, the EU wills to reach ‘net zero greenhouse gas emissions by 2050’ by decarbonising their whole energy system.<sup>cccxi</sup> The topical energy directive of the EU is contemplated to be reviewed and improved for possible problems that may arise. In 2023, the Member States of the EU will keep their climate and national energy plan up to date in the way of achieving the goal for 2030. The key principles of the agenda will be “prioritizing

energy efficiency”, “developing a power sector based largely on renewable resources”, “securing an affordable EU energy supply”, and lastly “having a fully integrated, interconnected digitized EU energy market.”<sup>cccxxiii</sup> In the year of 2020, the European Commission explained its strategy for a future with cleaner energy. In this direction, “the EU Strategy for Energy System Integration” is a significant formation in terms of achieving the energy transition process. At this point, clean fuels like hydrogen come to the forefront as modifying figures. “The European Clean Hydrogen Alliance” serves as an important factor accordingly.<sup>cccxxiv</sup>

### **B- Sustainable Industry:**

In the March of 2020, the EU announced their “Industrial Strategy” with the purpose of “empowering citizens, revitalizing regions and having the best technologies.”<sup>cccxxv</sup> Landmark of this policy involves further improving the modern sides of the industries and developing the “climate neutral” circular economy friendly goods markets. The promotion of recycling is also a key point regarding this issue. The EU has the opinion that it is crucial to conduct studies in this way and in fact, exporting the wastes out of the EU should be stopped.<sup>cccxxvi</sup>

### **C- Building and Renovation:**

In recognition of the current situation which is quite problematic because of the usage of unsustainable methods, the EU plans to take action for promoting energy efficient building methods such as climate proofing buildings, increasing digitalisation and enforcing rules surrounding the energy performance of buildings. Social housing renovation will also be a part of the process for all those who can not finance these costs.<sup>cccxxvii</sup>

### **D- Farm to Fork:**

The strategy of “Farm to Fork” focuses on food sustainability and the aid led to the producers. The EU wants to take a step forward in the way of increasing efficiency and further improving the eco-friendly approach for the production and transmission of the resources. The aim is to preserve the price and quality of the products likewise throughout this process. Some actions that will be taken in this process will work on the topics of raising

awareness among the consumers regarding the sustainable packaging and decreasing the usage of chemical pesticides.<sup>cccxxviii</sup>

### **E- Eliminating Pollution:**

On 12 May 2021, the European Commission adopted the EU Action Plan: "Towards a Zero Pollution for Air, Water and Soil"- a key deliverable of the European Green Deal.<sup>cccxxix</sup> It aims to achieve no pollution from "all sources", cleaning the air, water and soil by 2050.<sup>cccxxx</sup> In this direction, the water management of several industries will be reviewed for the "no harm policy". The materials that are not naturally conscious such as but not limited to chemicals and micro plastics are considered to be eliminated in the way of achieving the goal. It is also a significant point that the "Farm to Fork" project will also help this aim with reducing the excess nutrients and improving the sustainable ways of production and transportation.<sup>cccxxxi</sup> It would also be beneficial to mention that some communities like "Genetic Literacy Project" criticized the terms of "toxic free" and "zero pollution" as being anti-scientific and contradictory since any substance can be toxic at a specific dose and almost any life-related process results in "pollution".<sup>cccxxxii</sup>

### **F- Sustainable Mobility:**

Reducing the greenhouse gas emissions arising from the transportation methods is another crucial issue in the way of achieving the European Green Deal. An overarching strategy regarding sustainable and smart mobility is willed to be conducted. This is going to further improve the usage of alternative and sustainable energy resources within the road, maritime and air transport.<sup>cccxxxiii</sup> Alongside, smart traffic management systems and applications are considered to be improved in order to make sustainable alternative solutions available to businesses and the public. Installations of charging ports for electric vehicles intend to encourage the purchase of low-emission vehicles.<sup>cccxxxiv</sup> The 'Single European Sky' plan focuses on air traffic management in order to increase safety, flight efficiency and environmentally friendly conditions.<sup>cccxxxv</sup> These are some of the solutions created for the sustainable mobility part of the plan.

## **G- Biodiversity:**

The EU's biodiversity strategy for 2030 is a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030, and contains specific actions and commitments.<sup>cccxxxvi</sup> Management of forests and maritime areas, environment protection and addressing the issue of losses of species and ecosystems are all aspects of this target area.<sup>cccxxxvii</sup> Implementing organic farming methods, aiding pollination process, restoring free flowing rivers, reducing pesticides are some of the solution methods that are and will be conducted during the period. The EU wants to protect 30% of land and 30% of sea (*30 by 30*), whilst creating stricter safeguards around new and old growth forests. Their aim is to restore ecosystems and their biological levels.<sup>cccxxxviii</sup> The official page of the EU Biodiversity Strategy for 2030 cites Ursula von der Leyen, President of the European Commission, saying that: ‘ Making nature healthy again is key to our physical and mental wellbeing and is an ally in the fight against climate change and disease outbreaks. It is at the heart of our growth strategy, the European Green Deal, and is part of a European recovery that gives more back to the planet than it takes away.’<sup>cccxxxix</sup>

## **3- Recovery Program From the Novel Coronavirus:**

Since the 2020 Covid-19 pandemic has come to the forefront, the focus on the European Green Deal within the European Union dramatically decreased. Some leaders involving Poland's deputy minister of State Assets, Kowalski, and the Czech prime minister, Babiš called for either a one year break or finishing up the whole plan. Many people thought that the main focus of the EU should be this short-run crisis instead of the climate problems.<sup>cccxi</sup> At this point, the hesitation of economic activity has been another danger for the European Green Deal since the funds for the policy including the GDP of the EU were affected by the severe epidemic. In April 2020, the European Parliament called for including the European Green Deal in its economic recovery program.<sup>cccxcxlii</sup> Ten countries called for the adoption of the ‘green recovery plan’ for the fear of weakening the whole plan. In May 2020 the leaders of the European Commission argued that the ecological crisis helped create the pandemic, which emphasized the need to advance the European Green Deal.<sup>cccxcxliii</sup> Later that month, the €750 billion European recovery package (called Next Generation EU) and the €1 trillion budget were announced.<sup>cccxcxliv</sup> The European Green Deal is part of it. The money will be spent only on

projects that meet certain green criteria. 25% of all funding will go to climate change mitigation. Fossil fuels and Nuclear power are excluded from the funding. The recovery package is also intended to restore some equilibrium between rich and poor countries in the European Union.<sup>cccxliv</sup>

## **European Climate Law**

The European Climate Law was published in the Official Journal on 9 July 2021 and entered into force on 29 July 2021. The European Climate writes into law the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050.<sup>cccxlv</sup> The law also aims to reduce net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. Climate neutrality by 2050 comes to the meaning of succeeding the target of "net zero greenhouse gas emissions for EU countries as a whole" by cutting emissions, investing in green technologies and protecting the natural environment. The law's main target is to assure that all EU policies contribute to this goal and that all sectors of the economy and society play their part.<sup>cccxlvii</sup>

Here are the objectives of "European Climate Law": "setting the long-term direction of travel for meeting the 2050 climate neutrality objective through all policies, in a socially fair and cost-efficient manner", "setting a more ambitious EU 2030 target, to set Europe on a responsible path to becoming climate-neutral by 2050", "creating a system for monitoring progress and taking further action if needed", "providing predictability for investors and other economic actors", and "ensuring that the transition to climate neutrality is irreversible".<sup>cccxlviii</sup>

## **Energy Efficiency Directive**

### **1. Background:**

The Energy Efficiency Directive, approved in 2012 and updated 2018, was the legislative result of the EEP that was published in March 2011. It repeals the Cogeneration Directive (2004/8/EC) and the Energy End-Use Efficiency and Energy Services Directive (2006/32/EC). It is meant to fill the gap between existing framework Directives and national/international measures on energy efficiency and the 2020 EU target for energy

savings. It covers all sectors except transport, and includes, for the first time in an “energy efficiency” directive, measures for supply-side efficiency.<sup>cccxlx</sup>

## **2. General Description About the Energy Efficiency Directive:**

In accordance with the European Green Deal, the EU is increasing its climate ambition and aims at becoming the first climate-neutral continent by 2050. As a part of the Fit for 55 package, the Commission will review the Energy Efficiency Directive, to meet the emissions reduction target of at least net 55% by 2050.<sup>cccl</sup>

## **3. The 2012 Energy Efficiency Directive**

Directive 2012/27/EU established a set of binding measures to help the EU reach the 20% energy efficiency target for 2020. Measures that were introduced include:

- Policy measures to achieve energy savings equivalent to annual reduction of 1.5% in national energy sales;
- Obligations to make energy efficient renovations to at least 3% per year of buildings owned and occupied by central governments;
- National long-term renovation strategies for the building stock in each EU country;
- Mandatory energy efficiency certificates accompanying the sale and rental of buildings;
- The preparation of national energy efficiency action plans (NEEAPs) every three years;
- Obligation schemes for energy companies to achieve yearly energy savings of 1.5% of annual sales to final consumers; and
- Large companies conduct energy audits at least every four years.<sup>cccli</sup>

## **4. The 2018 amending Directive on Energy Efficiency**

In 2018, as part of the Clean energy for all Europeans package, the new amending Directive on Energy Efficiency (2018/2002) was agreed to update the policy framework in view of 2030 and beyond. The key element of the amended Directive is a non-binding energy

efficiency target for 2030 of at least 32.5%. The directive allows for a possible upward revision in the target in 2023, in case of substantial cost reductions due to economic or technological developments. It also includes an extension to the energy savings obligation in end use, introduced in the 2012 directive. Under the amending directive, EU countries will have to achieve new energy savings of 0.8% each year of final energy consumption for the 2021-2030 period.<sup>ccclii</sup>

Other elements in the 2018 Directive include:

- stronger rules on metering and billing of thermal energy;
- requirements for transparent, publicly available national rules on the allocation of the cost of heating, cooling and hot water consumption in multi-apartment and multi-purpose buildings; and
- monitoring efficiency levels in new energy generation capacities.<sup>cccliii</sup>

## **5. Commission Proposes New Energy Efficiency Directive**

In July 2021, a proposed revision of the Energy Efficiency Directive (EED) by the European Commission under its “Fit for 55” package, sets out a more ambitious binding annual target for reducing energy use at EU level. Once approved, the Directive will guide how national contributions are established and almost double the annual energy saving obligation for Member States. The revised proposal also requires the public sector to renovate 3% of its buildings each year.

Main changes in the EED proposal include:

- A new Article 6 mentions that Member States shall ensure that at least 3% of buildings owned by public bodies shall be renovated each year to at least nearly zero-energy buildings (NZEB).
- The annual energy savings obligation for Member States for the period between 2024 and 2030 is increased, from 0.8% to 1.5%.
- Higher target for reducing primary energy consumption (39%) and final consumption (36%) by 2030 (Article 9).<sup>cccliv</sup>

## **Just Transition Mechanism**

Since the transition towards a climate-neutral economy involves transforming the economic bedrock of societies, the European Green Deal is set out to include a plan which will mitigate the socio-economic impact of this all-encompassing, transformative process. Therefore, the EU has devised a tool to counter the possibly devastating consequences of the gradual demise of whole business sectors fueled by carbon-intensive methods, which is the Just Transition Mechanism (JTM). The Mechanism involves three main pillars which provide several policy solutions to address challenges faced by all European citizens who used to benefit from carbon-intensive economies. The first of these pillars is the Just Transition Fund, which will be used to mobilize the financial resources necessary in implementing a smooth, inclusive and green transition. The second pillar is the InvestEU "Just Transition" scheme, which will help the EU coordinate and finance private sector investments<sup>ccclv</sup> in line with the goals determined in other green transition legislation. The third and the last pillar will be a new Public Sector Loan Facility, helping public institutions finance the green transition with newly mobilised public investment tools. The total sum allocated to the three pillars, or to the JTM as a whole, is €55 billion for the 2021-2027 period. This sum will be accessible to all EU member countries whose territories fulfill the territorial aid requirements which is to be decided by the Commission. Since there are regional disparities among EU countries with regards to the intensity of carbon-based industries, the way JTM resources are mobilized will have to vary according to the needs of each region. By 2030, member states will have to prepare transition plans for territories likely to be impacted by carbon-reduction, so that the Mechanism provides protection for individuals, companies, sectors and states in order to facilitate a difficult transition.<sup>ccclvi</sup>

- **Just Transition Fund**

Of the €55 billion allocated to JTM as a whole between 2021-2027, a hefty €19.2 billion portion of the scheme in current prices is mobilized as part of the first pillar of the mechanism, the Just Transition Fund. The Fund seeks to make available fresh financial resources to the countries in their effort to counter challenges which may arise from the disappearance of jobs and businesses due to emission reductions. Part of the money will be mobilized directly from the EU budget, and the remaining part will be provided from the

newly created European Recovery Instrument. The European recovery instrument, which will constitute the majority of the resources of the Just Transition Fund, is a post-pandemic stimulus package designed to aid the EU in a variety of policy areas, from digitalisation to the European Green Deal<sup>ccclvii</sup>. The governance of the Fund will be conducted on the basis of shared management, and will only be used to finance a limited scope of activities such as the development of new skills, research, decarbonisation and digitalisation. According to a press release from the Council, besides the obvious exclusion of fossil fuel based economic activities from the scope of JTF financed investments, nuclear power commissioning and tobacco related activities will also be outside the scope of investments related to the Just Transition Fund<sup>ccclviii</sup>.

Due to the varied allocation of JTF sums in the form of green grants, access to the fresh fund has not been without contention. A green transition is costly for carbon reliant economies, therefore it is vital to mitigate the socio-economic impact of this transition by fresh money instead of reshuffling existing EU aid to countries, which is a concern for Eastern European members in particular, who rely on bigger portions of the Fund compared to their Western European counterparts. This concern was reflected in Hungarian Prime minister Orbán's words, saying that "It is not acceptable that in the European Union's next budget we take money away from cohesion funds and transfer it to climate protection goals"<sup>ccclix</sup>.

- **Territorial Just Transition Plans**

Member states will benefit from the JTF by selecting territories which require special aid in becoming climate-resilient, so financing will not be based on separate allocations for countries, it will be based on tailoring different transition schemes for territories. Consequently, countries will have access to public loans, private sector investment schemes or to the Just Transition Fund by preparing Territorial Just Transition Plans. In order to lay out their plans, the Commission, which will assess territorial plans and allocate resources accordingly, expects member states to consult with regional stakeholders, assess territorial capacities to deal with incoming challenges and then apply to the Commission. Also, the Commission aids regions in member states to come up with said plans, as it has helped to prepare territories like Greece's Western Macedonia, Romania's Jiu Valley, and Slovakia's Horna Nitra region in their efforts to let go of coal-dependent economies<sup>ccclx</sup>.

## **Addressing Inequalities Through the Green Transition**

Transforming economies to achieve climate neutrality requires disposing of certain jobs and industries while incentivizing others. Without prioritizing social fairness in this process, inequality stemming from sectoral unemployment and regional disparities is inevitable. Inaction and the lack of a strategy to implement protective measures could intensify hardships faced by low and lower-middle income groups whose incomes are already vulnerable to changes in the energy and transportation sectors. As a result, the EU strives to leave no person and no place (emphasizing the regional character of possible inequalities) behind during the green transition. A strategy to counter unfairness emerging from climate neutrality efforts could alleviate currently existing inequalities as well. In order to further concretize the ‘social fairness’ aspect of the transition, the Council of the European Union has proposed a recommendation in July 2021 which will promote measures to address social and labor issues related to the climate neutrality process<sup>ccclxi</sup>. The European Green Deal, while having zero-emissions targets at its core, is not confined solely to energy proposals; its scope spans over every aspect of the European economy; thus providing wide-ranged solutions to socio-economic problems. Therefore, the Council recommendation plans on acting in four policy areas to achieve a fair transition. The first of these areas is employment, as it is foreseen by the EU that 1 million jobs could be created by 2030 thanks to climate transition, and this number could go up to 2 million by the final deadline of the emissions reduction scheme, 2050. To support this potential increase in green jobs, the recommendation suggests public assistance in job searches, courses enhancing skills useful in digital and green initiatives and employment programs for vulnerable populations. The second policy area involves life-long learning and training, which is essential in a dynamic job-market where the required skills are constantly updated. The third encourages member states to pursue redistributive policies by re-evaluating the welfare state, implementing tax initiatives that transfer the tax burden from the most affected by the transition. The fourth and the last of these policy areas includes facilitating access to essential services, by mobilizing funds for renewable energy for instance<sup>ccclxii</sup>

The OECD General Secretariat has also prepared a report named ‘The Inequalities-Environment Nexus: Towards a people-centered green transition’, which has a section that refers to European efforts to reconcile green initiatives with inequality/poverty countering

initiatives. In a box dedicated to the European Green Deal, the report says that in order to make the ambitions of the Green Deal acceptable to the public, the EU has conducted stakeholder consultations regarding the restructuring of carbon-intensive regions; demonstrating the people-centered approach followed by the Commission<sup>ccclxiii</sup>.

## **Social Climate Fund**

As part of the revision of the EU emissions trading system (EU ETS) under the Fit for legislative package, the European Commission is proposing to extend emissions trading to the building and road transport sectors. Emissions from these sectors will not be covered by the existing EU ETS, but by a new, separate emissions trading system. To address any social impacts that arise from this new system, the Commission proposes to introduce the Social Climate Fund.<sup>ccclxiv</sup> The main objectives of the Social Climate Fund can be aligned as financing temporary direct income support for vulnerable households and supporting measures and investments that reduce emissions in road transport and buildings sectors and as a result reduce costs for vulnerable households, micro-enterprises and transport users. The fund is valued at €72.2 billion over the eight years from 2025 to 2032. However, according to the World Wide Fund for Nature (WWF), the proposed Social Climate Fund (SCF) harbors a serious contradiction. The money it will contain is supposed to come from emissions trading in transport and buildings – a system known as the Emissions Trading 2 (ETS 2). This means that parts of the public money raised by the ETS 2 would go towards compensating for its potential negative impacts.<sup>ccclxv</sup> Many people have the intention of using the money coming from Social Climate Fund (SCF) and the ETS 2 in the areas of wind and solar power, sustainable transport like cycling infrastructure, or energy efficiency measures which will help the EU in achieving the 2030 climate and energy targets. Another development regarding this process is that the aforementioned fund to support Europe's poorest households during the shift to green energy might kick in a year earlier than planned, in 2024, an early draft of the European Parliament's position on the proposal said.<sup>ccclxvi</sup> Esther de Lange, one of the two lead lawmakers on the proposal, said that ‘The green transition should be feasible for everyone, not just those who can afford it.’

## **General Provisions of the Regulation**

### **a. Objectives and Basis of the Proposal**

The European Green Deal set in motion a new growth strategy for the European Union (EU) that purposes to transfer the Union into a sustainable, more evenhanded, fairer, more thriving with a modern, resource-efficient and competitive economy, where there are no net greenhouse gas emissions by 2050 and where economic growth is dissociated from resource usage. It reasserts the Commission's appetite to enlarge its climate ambition and make Europe the first climate-neutral continent by 2050. The essentialness and value of the European Green Deal have increased in consideration of the very rigorous effects of the COVID-19 pandemic on the health, social and economic well-being of the Union's citizens.

Based on the European Green Deal strategy and an inclusive impact assessment, the Commission's Communication of September 2020 on Stepping up Europe's 2030 climate ambition ('the 2030 Climate Target Plan') suggested to upgrade the Union's wish and assert an encompassing plan to increase the Union's binding target for 2030 towards at least 55% net emissions reduction, in a responsible way. Lifting the 2030 ambition now helps policymakers and investors in the way of being certain, so that decisions made in the coming years do not lock in emissions levels inconsistent with the Union's objective to be climate neutral by 2050.<sup>ccclxvii</sup> The union upgraded the 2030 target in accordance with the objective of the Paris Agreement signed under the United Nations Framework Convention on Climate Change ('UNFCCC') ('the Paris Agreement') to keep the global temperature increase to well below 2°C and pursue efforts to keep it to 1.5°C.

The European Council approved the new Union binding aim for 2030 at its meeting of December 2020. On 25 May 2021, the European Council reasserted these decisions and called on the Commission for rapidly submitting its legislative package together with an overall analysis of the environmental, economic and social impact at Member State level. Both, the climate neutrality of the Union by 2050 and the intermediate net emission reduction of at least 55% by 2030 are aggrandized in Regulation (EU) 2021/1119 of the European Parliament and of the Council ('the European Climate Law').<sup>ccclxviii</sup>

In order to carry out the European Climate Law and the conclusions of the European Council, the Commission has inspected the climate and energy legislation presently in situ and offers the 'Fit for 55' legislative package.

The upgraded Union climate ambition means the contribution from all sectors need to be raised as well. To that end, emissions trading for buildings and road transport is suggested as part of the revision of Directive 2003/87/EC ('the ETS Directive').<sup>ccclxix</sup> It should purvey an extra economic incentive to decrease the direct usage of fossil fuels and thus, bestow to reduce greenhouse gas emissions. Introducing a market price on carbon in these two sectors in conjunction with other measures should in the medium to long term reduce the costs for buildings and road transport, and will provide new opportunities for investment and job creation that will be taken full advantage of in the presence of the appropriate labor market and skill policies like those supported at the EU level by the European Social Fund Plus (ESF+) established by Regulation (EU) 2021/1057 of the European Parliament and of the Council and the Just Transition Fund established pursuant to Regulation (EU) 2021/1056 of the European Parliament and of the Council.<sup>ccclxxccclxxi</sup>

However, the rise in the price for fossil fuels will have crucial social and distributional effects that may disproportionately affect vulnerable households, vulnerable micro-enterprises and vulnerable transport users who spend a larger part of their incomes on energy and transport and who, in certain regions, do not have access to alternative, affordable mobility and transport solutions. These impacts on vulnerable groups show alteration between Member States and these impacts tend to be felt more intense in the places where the average income is low. As corollary to the fuel price increases through carbon pricing, the emissions trading generates revenues, which can be used to alleviate the burden on the vulnerable groups.

In order to eliminate the possible problems regarding the social and distributional impacts which may arise from the emissions trading for the two new sectors of buildings and road transport, a Social Climate Fund is created. The Fund aims at mitigating the price impact of the new carbon pricing and should provide funding to Member States to support their policies to address the social impacts of such emissions trading on vulnerable households, vulnerable micro-enterprises and vulnerable transport users.

The climate neutrality target of the European Green Deal and the European Climate Law, and the twin green and digital transition are the most significant and core priorities of the Union. The 'Fit for 55' package, the Next Generation EU and the multiannual financial framework for 2021-2027 will be beneficial in the way of accomplishing the twin green and digital transitions that Europe is taking aim at. The conjunction of these policies will furnish resolutely in recognition of addressing economic crisis and easing recuperation following the

COVID-19 pandemics and speeding up the transition to a clean and sustainable economy, linking climate action and economic growth and social and territorial cohesion.

The requirement and value of the green transition have become much more important after the COVID-19 pandemic on the prosperity of the Union's citizens. The Fund will start to be operational during the last two years of the Recovery Instrument and the Recovery and Resilience Facility that are the Union measures to decrease the economic and social impact of the COVID-19 pandemic and make Union economies and societies more sustainable, bouncy and ready for the difficulties and chances of the green and digital transitions. The effectuation of the Fund, which should proceed until 2032, will be in harmony with those former precautions.

#### **b. Stakeholder Consultations**

The Commission invited the Member States, industry representatives from the private sector, non-governmental organizations, research and academic institutions, trade unions and citizens to provide their feedback and opinion on the possible emissions trading for the sectors of buildings and road transport, including on its social consequences.<sup>ccclxxii</sup>

Before the adoption of the Communication on the 2030 Climate Target Plan, which suggested to upgrade the Union's ambition and submit an inclusive plan to increase Union's binding target for 2030 towards at least 55% net emissions reduction, in a responsible way, the Commission collected the first round of public consultations.

For each of the proposals of the 'Fit for 55' package the Commission organized a second round of online public consultations. In respect to the alteration of the ETS Directive, including the emissions trading for buildings and road transport, almost 500 replies were received.<sup>ccclxxiii</sup> Stakeholders consulted in the building and road transport sectors were skeptical about extending emission trading systems in these sectors and they proposed alternative policies. The general inclination among all the proposed policy solutions was to exclude buildings and roads from the current standing emission trading proposal and to devise a separate system for these sectors. On the other hand, stakeholders approved of the concerns of the Social Climate Fund and affirmed the need for support for vulnerable households in order for them to afford necessary investments in the energy transition.

### **c. Impact Assessment**

The problems addressed by the proposed Fund and the possible solution directions are analyzed in two consecutive impact assessments, therefore no specific impact assessment was carried out.

The impact assessment supporting 2030 Climate Target Plan discovered that an increase of the 2030 emission target to -55% increases the share of energy related households expenditures by around 0.7 to 0.8 percentage points. These rises in the consumer prices affect the household in many ways depending on their life condition determinants such as but not limited to outgoings, incomes and wealth.

The predicted changes in the prices will certainly affect lower-income households more than higher-income households. However, these results do not include the redistribution of auction revenues. If for example, a lump-sum redistribution of the auction revenues based on household size is introduced for each Member State, this could generate a positive welfare impact on the bottom expenditure decile of the Union population as a whole and sharply reduce the negative impact on all other expenditure classes.<sup>ccclxxiv</sup> The impact assessment also deduced that a redistribution mechanism should be directly targeted to address the needs of lower income/expenditure deciles. This would qualify a higher degree of recompense for and support to the households in need for any given level of gross produced by carbon pricing.

## **Detailed Explanations of Specific Provisions of the Proposal**

### **Article 2**

Article 2 of the Proposal for a Regulation of the European Parliament and of the Council establishing a Social Climate Fund defines some of the key words and concepts that are of importance to the proposal. The aims and the scope of the regulation can be understood clearly only by applying the specific definitions laid out in Article 2, which clarify the exact meaning of terms that are open to interpretation. The article refers to other documents as well in order to achieve legislative coherence and to avoid confusion.

Some terms that are of significance include:

- Energy poverty, whose definition can be found in the Proposal for a Directive of the European Parliament and of the Council on energy efficiency, means the lack of

access to essential energy services to the extent that the household's 'decent standard of living' is affected negatively.<sup>ccclxxv</sup>

- Energy from renewable resources, whose definition can be found in the Directive on the promotion and use of energy from renewable sources, involves non-fossil fuels such as "wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases"<sup>ccclxxvi</sup>

Other terms, which can be defined without referencing separate EU legislation, are explained directly in the proposal itself. For instance, the proposal defines 'vulnerable transport users' as households affected by price hikes concerning road transportation and those who will face challenges in the transition to sustainable transportation. Another term explained in the article is 'vulnerable micro-enterprises'. Such enterprises are firms employing fewer than 10 persons, whose annual balances are not more than 2 million €, and who are prone to the fiscal impact of sustainable transition practices regarding the buildings they work in.

#### **Article 4**

Article 4 lays out the content of Social Climate Plans. The content involves three pillars: the aims of Social Climate Plans, its consistency with preexisting EU legislation, and options to facilitate member states' implementation of the plans. Some of the significant points among the aims of the proposal include estimating the scale and character of energy poverty's impact on vulnerable groups such as micro-enterprises and transport users; analyzing the impact and coming up with mitigating solutions; a timetable regarding targets to be completed by 31 July 2032; ensuring that Social Climate Plans are in accordance with EU's other climate commitments; planning the monitoring and implementation of the proposal in member states; preventing corruption during the implementation process.

#### **Article 5**

As previously explained in the Just Transition Mechanism section, the Just Transition Fund will be used to support the implementation of Social Climate Plans. However, the plans will be financed as long as they are carried out in accordance with the targets set out in the proposal. In order to ensure that the targets are set while abiding to certain prerequisites, the

proposal defines several principles. The five principles listed can be summed up as: Energy efficiency, renovation of buildings, reducing emissions related to transportation, reducing greenhouse emissions, and reducing vulnerability of groups prone to impact. The proposal also mentions the principle of ‘do no significant harm’ as a requisite of financing plans, and this principle is further elaborated in a regulation regarding sustainable investment. Article 17 of the regulation lays out certain types of economic activities that are considered to do significant harm to EU’s environmental goals. Some of the mentioned activities are activities that lead to an increase in emissions, activities that are detrimental to water resources, and activities that lead to inefficient waste generation<sup>ccclxxvii</sup>.

### **Articles 6 and 7**

In order for the Just Transition Fund to allocate the necessary sums to member states, states need to include certain categories of expenses and investments in the total cost of the implementation of Social Climate Plans. The primary expense to be included is the support given to vulnerable groups specified in the content of the proposal, namely, micro-enterprises and transport users who will be directly impacted by the transition. Other investment categories include building renovations which will enable buildings to perform better in terms of sustainability (such investments can be in the form of fiscal incentives); the decarbonisation of buildings; facilitating access to public transportation or other types of shared mobility services; enabling citizens to purchase bikes or low-impact vehicles and building the necessary infrastructure. Support from the Fund will exclude households benefiting from price changes in energy due to government intervention from income support.

### **Articles 15 and 16**

Once a member state submits their Plan to the Commission, the body will assess the national plan to see whether it complies with the standards of Social Climate Plans laid out in the proposal. The assessment will be based on four criteria: relevance, effectiveness, efficiency and coherence.

- In order to understand whether a national plan is relevant, the commission will expect the plan to be a response to the social impact inflicted on the aforementioned types of vulnerable households, to comply with the ‘do no significant harm’ principle previously mentioned in Article 5 and to contribute to green transition while mitigating the social impact of it.

- In order to understand whether a national plan is effective, the commission will expect the plan to have a lasting impact, to ensure its effective monitoring and to comply with previous EU legislation.
- In order to understand whether a national plan is efficient the commission will expect the plan to justify that the costs of the plan amount to reasonable sums, to detect and prevent corruption during the implementation, to fit in the scope of the Just Transition Mechanism.
- The proposal does not elaborate on the commission's expectations concerning a national plan, it simply states that the plan should contain coherent measures and investments.

Article 16 states that the commission has six months to decide if the national plan is to be implemented or not. If the decision is affirmative of the plan, then the decision will also involve the details regarding the allocation of financial resources from both national and European levels and the timetables to be followed during the implementation. If the decision is negative, then the commission will have to give the reasons for the plan's refusal and the member state will have to resubmit an amended plan.

### **Article 23**

Article 23 concerns itself with the monitoring of the implementation of plans approved regarding the standards set in Article 16. After having prepared and implemented their respective plans at the national level, member states will have to report to the Commission to be monitored on a biennial basis. The factors which will be taken into consideration in the Commission's monitoring of the implementation process include progress regarding the number of households living under the duress of energy poverty, the measures of investments done to counter the negative effects of energy-transition and information regarding the alteration conducted in buildings to render them carbon-free.

### **Possible Matters to Address in the Amendments and Conclusion**

One of the essential aspects of the proposal which will set the tone of the debate is the disproportionality of the impact of the energy transition. It is inevitable that carbon price changes will influence certain regions with particular economic characteristics in a more destructive way. Since the EU is far from being homogenous in terms of regional development, past investments regarding resilience, and the commonness of sustainable

practices; there is no single way to mitigate impact on vulnerable constituents in every corner of the Union. Therefore, through the use of Territorial Just Transition Plans, and through the flexibility of the Regulation; it is intended that each member state devises a plan which will cover the necessities of their respective jurisdiction. This allows political units to prepare and implement their plans more efficiently; but it should be noted that the more decentralized the implementation of the regulation is, the more costly and complicated the monitoring and assessment by the Commission will be. It should also be noted that since the need for the funding of the plans will differ from region to region, and from country to country, the distribution of Union resources is probably going to be a matter of contention. Hence, it is imperative that the proposal's solutions for properly assessing and monitoring of both the planning and implementation processes leave no room for ambiguity. Articles 15, 16 and 23 are crucial in ensuring that the national plans are prepared and conducted in a compliant and effective way, so amending these articles in a way which will help avoid ambiguity and ensure good practice is a matter to be discussed. Another aspect of the proposal which may lead to disparate understandings among political actors is the scope of the Regulation. It is clear that the aim is to reach and aid vulnerable constituents, yet it is essential to have a coherent understanding of what vulnerability actually means. In Article 2 of the proposal, several definitions are made to set the base of this understanding, so terms such as energy poverty are explained. In Article 5 of the proposal, five principles to be followed in the plans are laid out (i.e. energy efficiency, reducing the vulnerability of groups prone to impact etc.) and in Article 4 target groups such as households, micro-enterprises and transport users are defined. These definitions all provide clarity for debate, but should be narrowed or widened in order to enrich and ameliorate the content of prospective national plans. In conclusion, when amending the proposal, two main issues may stand out during a debate. The first is to make the standards for assessment/monitoring more robust, the second is to ensure that the scope and definitions of targeted groups and principles are clear and agreed upon.

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