

Technological and Digital Empowerment of Commercial Companies Concept and State of the Art in Portugal

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ABSTRACT: Artificial Intelligence (AI) has increasingly appeared in the news and in our daily lives as a constantly evolving technological reality. Above all, it has established itself as a self-learning mechanism whose speed in processing vast amounts of data delivers remarkably accurate results. This technology now plays a prominent and increasingly indispensable role across the various sectors that structure human activity and state organization – such as science, education, medicine, research, industry, agriculture, and even defense.

Commercial companies, aware of the economic, environmental, and social challenges they face, view Artificial Intelligence as a transformative force with the potential to enhance efficiency, foster innovation, and strengthen competitiveness. Together, these factors form the cornerstone of modern corporate governance, particularly among the so-called “Z” generation.

However, the use of Artificial Intelligence cannot ignore the ethical principles that have guided social and human development. Nor can it be applied with excessive dependence. Its use must therefore be responsible – serving to empower and advance both organizations and society – without becoming a tool that devalues human capital or undermines the fundamental rights enshrined in constitutional principles.

Keywords: Artificial Intelligence; corporate governance, commercial companies.

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I. INTRODUCTION

It's undeniable that Artificial Intelligence (AI) has dominated the global landscape of society in recent years. Indeed, its potential has been highlighted in all areas and has been seen as a symbol of improvement in every sectors. It's therefore not surprising that commercial companies have begun to view these new tools as a true ally, whose usefulness is evident in virtually every area, including company management and corporate governance.

The potential of AI promises to transform the way companies are managed, particularly given that directors now have at their disposal unique tools capable of performing predictive analyses quickly and effectively, making them the perfect ally in decision-making.

AI's capabilities are effectively spreading across various domains, with a causal link between its use and increased efficiency, innovation, and, consequently, competitiveness. The triptych—efficiency, innovation, and competitiveness—represents the true indicators of success for corporate governance. Therefore, the question is no longer whether AI should be used by corporate administrators in decision-making, but rather to what extent and with what caution, taking into account, above all, ethical, social, and legal issues and the limits that should not be exceeded in this context.

Our objective, with the study currently underway, is, in particular, to understand that the use of AI tools in corporate governance (and beyond, we venture to say), enables societal empowerment, provided (and only to that extent) that it does not impoverish human beings. This means that, on the one hand, we understand the indispensability of using AI which, among many other benefits, is fundamental for automating processes, reducing costs, analyzing data, reducing merely repetitive tasks and contributing to more accurate and effective decision-making. On the other hand, we cannot ignore that, if certain limits are exceeded, its use will inevitably lead to a devaluation of human capital, with a particular impact on the dehumanization of labor relations, the replacement of rational decisions by mere algorithmic conclusions and the opacity resulting from automated decisions¹.

For all these reasons, we are not only concerned with understanding the impact AI can have on productivity or decision-making efficiency, but also with understanding whether its use contradicts values based on human dignity and the protection of legal principles that, over time, have enabled the construction of a more just, dignified society, and, above all, one that respects the fundamental rights of citizens. This calls for the provision of work in dignified conditions, non-discrimination based on race, gender, political or religious ideologies, and the preservation of individual privacy.

We do not believe that the greatest danger lies in the eventual replacement of humans by machines, nor that machines think like humans in a way that surpasses them. In our understanding, the danger lies not in the machines themselves, but only in their incorrect use.

Our aim, therefore, and ultimately, is to conclude that the optimal use of AI, often considered a panacea for all ills, depends on the optimal use of AI and on the human capacity to use it in favor of humanization and within a legal framework that continues to protect the fundamental values of a society that seeks to be just and balanced. The use of AI requires a new legal framework and a genuine rethinking of how we should apply legal norms to the new reality².

It is, in essence, a mere evolution, requiring monitoring and appropriate study, leading to a more competitive and innovative, yet simultaneously more sustainable, economy, culminating in the aggregation of values that enable the advancement of justice in its most equitable and fair sense, without, however, hindering the natural evolution of AI.

II. TECHNOLOGICAL AND DIGITAL EMPOWERMENT OF COMPANIES – CONCEPT AND STATE OF THE ART IN PORTUGAL

Portugal has experienced significant technological and digital advances. The COVID-19 pandemic has intensified this trend and has led to the widespread use of ICT in virtually all areas. New business opportunities have been created. New companies have emerged based on the use of this new knowledge.

Portugal has become aware that digital transformation is a central pillar of the country's economic and business competitiveness. To intensify this trend and create a connected and innovative economy, the government created the "Portugal Digital" program, which embodies the National Digital Strategy. This program, in addition to modernizing public administration, aims to foster digital skills among the population, support startups, and encourage the digitalization of small and medium-sized enterprises (SMEs).

From the document he can withdraw that³: Portugal's potential is considerable, underpinned by robust telecommunications and computing infrastructures, a strategic geographical location, and specialized talent with the skills to innovate. This unique window of opportunity invites us to build a future where digitalization drives the economy, supports climate transition, and enhances the quality of life for its citizens.

With regard, in particular, to the use of AI, the government's objectives are clear: The objective is to maximize the adoption of AI and other emerging technologies, ensuring their safe, ethical, and common-good-oriented use. This

¹ Regarding the need for this balance, see, among others: Pasquale, F. (2020). *New Laws of Robotics: Defending Human Expertise in the Age of AI*. Harvard University Press.

² Maranhão, J. (2017) *A inteligência artificial e o ensino do Direito*. Available at: www.jota.info/artigos/inteligencia-artificial-e-o-ensino-do-direito-19122017 (Accessed 28 October, 2025).

³ Available at: <https://bo.digital.gov.pt/api/assets/etic/c508799d-8731-4a1f-b828-daac504c87e1/> (Accessed 28 October, 2025).

approach aligns with the European Union's advocacy for a balanced strategy, integrating the promotion of innovation with the assurance of fundamental rights, security, transparency, and democratic values. In conclusion that "technology can not just be a tool for a few, but an opportunity for all".

This strategy national based on seven principles advisors: i) Trust and Transparency; ii) Inclusion and Equality; iii) Environmental Sustainability; iv) Security and Protection; v) Ethics; vi) Efficiency; vii) Collaboration⁴.

Among the various dimensions and objectives outlined, we highlight, due to its impact on the study currently under construction, the "Companies" dimension. In this context, the National Strategy took into account the Digital Economy. and Society Index, which, as we know, aggregates the main indicators related to Europe's digital performance, determines several targets to be achieved by 2030.

This index pays special attention to SMEs, which, although smaller in size, constitute a large part of the Portuguese business community. Therefore, a full digital transformation of the Portuguese economy must necessarily be based on these types of companies⁵.

Thus, the aim is to prepare Portuguese SMEs for the new era of digitalization, and to this end, the Portuguese government undertakes to support companies that intend to advance digital transformation. In this context, it is necessary for these companies to adopt digital tools on a large scale, especially AI tools.

The Strategy also aims to create an ecosystem conducive to the emergence of startups. Note that, by 2025, according to the "Portugal 2025 Digital Decade Country Report," "Portugal's ecosystem is favorable to startups, although scaling-up remains a challenge." This means that the main challenge lies precisely in the continuity and evolution of the use of advanced tools. technologies.

Portuguese SMEs have shown slow progress in using AI tools, and therefore the EU is clear in presenting the following recommendation in the aforementioned report: Support the adoption of advanced digital technologies by businesses by fostering enhanced collaboration between public and private sector and academia and by identifying medium-term support measures. Support AI take-up and thus enable innovation by enterprises, including by timely implementation of ongoing and planned measures.

Furthermore, on 16 December 2024, the Council adopted a directive that generalizes and modernizes the use of digital tools and processes in the field of company law, with the clear aim of facilitating access to company data, strengthening trust and transparency in companies across all Member States, creating more interconnected public administrations and reducing bureaucracy in cross-border situations⁶.

From the above, we can conclude that, indeed, there is a government commitment in Portugal to encourage the use of AI tools, fueled and anchored by the European Union's own commitment to developing a digital transformation strategy for companies in its member countries. In turn, while large companies have high levels of AI system use, SMEs still lag behind, with considerable room for improvement.

The true aim of this national and community strategy is to provide companies with so-called technological empowerment. In other words, to equip companies with the appropriate and decisive technology to develop their activities, expand their trade, and evolve their business. The application of AI can and should occur in all areas of the company, enabling it to develop competitively and, in the field of corporate management, serving as an ally in decision-making, facilitating the way managers collect and process information and consequently contributing to faster and more accurate decisions.

Although the concept of AI is currently one of the most frequently mentioned and discussed, the truth is that legally recognizing its meaning was no easy task. However, after extensive negotiations, EU Regulation 2024/1689, which

⁴ In a more direct way: "The seven guiding principles of the Portugal Digital Strategy are: PORTUGAL DIGITAL STRATEGY 1. Trust and Transparency: Strengthen public trust and promote transparency through digital technologies, encouraging civic participation and increasing the availability of information in an accessible and clear manner; 2. Inclusion and Equality: Ensure universal and inclusive access to digital technologies, promote equal opportunities, and combat barriers to the full participation of any individual or the comprehensive development of their potential; 3. Environmental Sustainability: It is vital to align the digital transition with the climate transition, and to use digital tools to create a more sustainable economy; 4. Security and Protection: Ensure the security and protection of data and systems, promoting reliable and secure use of digital technologies; 5. Ethics: It is imperative to encourage the development and utilisation of technology in an ethical manner, ensuring the safeguarding of fundamental rights and freedoms; 6. Efficiency: Transform and simplify processes, reduce bureaucracy, and optimise resource allocation; 7. Collaboration: Recognise the ubiquity of digital technology in society and establish a robust digital ecosystem through close collaboration between public administration, private companies, associations, academia, and civil society".

⁵ Available at: <https://digital-strategy.ec.europa.eu/pt/node/13725/printable/pdf> (Accessed 28 October, 2025).

⁶ This directive updates and complements Directive (EU) 2019/1151 of the European Parliament and of the Council, of 20 June 2019, which amends Directive (EU) 2017/1132 concerning the use of digital tools and procedures in the field of company law. More information, please consult, Dinis, Marisa, *Inteligência artificial e Cibersegurança: novos desafios na gestão das sociedades comerciais*, Derecho Digital y Mercado, sob Direção de Fernando Carbajo Cascón e M.^a Mercedes Curto Polo e sob coordenação de Martín González-Orús Charro, Tirant lo Blanch, Salamanca, 2024, and Dinis, Marisa e Bernardino, Filipe (2025), *Artificial Intelligence systems and compliance with ESG factors: a company law perspective*, Revista Jurídica Portucalense, 1(38), 25–46.

came into force on August 1, 2024, and is applicable from August 2, 2026, and is known as the AI Regulation, proposes the following conceptual solution in its Article 3: “a machine-based system designed to operate with varying levels of autonomy, and which may be adaptable after deployment and which, for explicit or implicit purposes, and based on the input data it receives, infers how to generate results, such as predictions, content, recommendations, or decisions that may influence physical or virtual environments.”

From this we can infer the self-learning capacity of these systems and their ability to adapt, as well as their ability to make inferences, that is, their ability to obtain results, to make predictions⁷.

III. ADVANTAGES, DISADVANTAGES AND CHALLENGES

It is clear from the above that commercial companies cannot ignore the existence of AI systems and must, in fact, harness the enormous potential this tool holds and, thus, position themselves more competitively in the market.

It is also clear that the Portuguese government, in perfect harmony with the movement undertaken in the European Union, has outlined a strategy to empower companies, with a particular focus on those most in need (SMEs), in terms of technology.

However, we cannot ignore the fact that the implementation of these measures and the widespread use of AI systems entail, along with the undeniable advantages, some disadvantages – let's call them concerns – and, naturally, numerous challenges of various natures (legal, social, and ethical).

At this point, we aim to highlight the main advantages, list the biggest concerns, and address the immediate challenges of using AI systems within commercial companies.

Referring again to current legislation, it is important to note that the AI Regulation classifies AI systems according to the risk they pose, based on the likelihood of harm resulting from their use.

Based on this premise, the AI Regulation defines four levels of risk for AI systems: i) unacceptable risk; ii) high risk; iii) limited risk; and iv) low risk⁸. This means that companies intending to use these technologies must take into account these risks and the rules inherent to their use.

Regarding the main advantages associated with the use of technology within commercial companies, we reiterate some of the observations previously made, stating that this use is currently indispensable for the successful and responsible pursuit of the company's purpose, both because it is essential to the company's day-to-day management and because it is necessary for its full expansion.

Notwithstanding the above, the use of technology also allows companies to fulfill other missions beyond their corporate purpose. Indeed, the need for companies to make a positive social impact as important promoters of social responsibility is increasingly relevant. Indeed, fulfilling the corporate mission is no longer limited to its corporate purpose, extending to various areas of activity and to accountability for the social impact of its actions. And it is also in fulfilling this mission that technology can be a valuable aid.

In management, the use of these tools is absolutely essential, as it allows for more efficient management focused on social objectives, whether those of the corporate purpose or social responsibility. But this innovation can only be truly effective if it is accompanied by appropriate human intervention. That is, those who use these systems must be properly trained to interpret, understand, supervise, and guide them. But, beyond that, it's important that they have the right knowledge to, *ab initio*, choose the right systems suited to the functions and mission they intend to perform and develop. Furthermore, it is also important to understand that innovation is not limited to the use of new systems or new platforms. Sometimes, more important than technological innovation is a change in mindset and the ability to rethink processes and enhance their use.

All this, understanding that digitalization is not an end, but a means. All this, always with the ultimate goal of serving people. All this, always with the human being, not the machine, at the epicenter. Because, if this is not the case, technological empowerment amounts to nothing more than technical dependence, leading to what has come to be called digital heteronomy, which we can translate as the process in which algorithmic logic prevails and gains power over human decisions, subjugating them.

If we fail to recognize that the epicenter of this process is human beings, we will undoubtedly transform them into automatons, hostages to the opinions of algorithms, uncritical of the solutions they present, attesting to and assuming as natural an intelligence that, because it is merely artificial, does not actually think. This, indeed, will result in human

⁷ In this regard, see also whereas 12 of IA Regulation.

⁸ Examples of unacceptable risk AI systems are those that involve cognitive-behavioral manipulation, predictive policing, emotion recognition, social scoring, for example, based on biometric data that allow for the inference of political opinions, religious beliefs, or other sensitive information. Examples of high-risk AI systems include AI systems for remote biometric identification of individuals in publicly accessible spaces in "real-time" for law enforcement purposes, as they are particularly intrusive to the rights and freedoms of the individuals concerned since they can affect the private lives of a large portion of the population, create a sense of constant surveillance, and indirectly discourage the exercise of freedom of assembly and other fundamental rights. Examples of limited-risk systems are conversational robots, with it being necessary to ensure that the interlocutor is aware that they are interacting with a machine. Examples of reduced-risk systems are spam filters or video game applications.

impoverishment. Thus, it is clear to us that productive structures and decision-making must fall to human beings, who must now be properly trained to take full advantage of AI technologies and systems.

The main advantage of digitalization and the use of AI systems in companies is the ability to perform tasks that, while not creative or reasoning-related, previously took up too much time for those in charge of the company. This time can be applied to actions that involve thought and reasoning, within the framework of an intelligence that is hardly artificial, allowing for the correct definition of the company's strategy. Creative tasks are left to the human being, who now has an ally in the execution process⁹.

However, the use of AI systems, especially if we reach the promised levels of intelligence, can go further and even assist in more intellectual tasks. They can be decisive in defining new strategies for companies and, above all, new paths and concepts that humans sometimes cannot grasp, either because they are addicted to thinking or because they fear being disruptive agents. In these situations, in particular, technological oversight, carried out by humans, will need to be exceptional. In these cases, the human controlling the machine must imbue every decision with human dignity, guided by the values that, socially and morally, elevate human beings to their status. Only with these assumptions guaranteed will AI be an ally that neither devalues humanity nor imposes the machine on humans, subordinating them to algorithmic decisions.

Ultimately, what we want to say is that the use of technology is a clear advantage for companies, and there's no need to fear that humans will be replaced by machines. What matters is a true redefinition of the role humans play in this context. We must understand that the use of technology is only useful if we can shift the paradigm of operation and thinking, toward greater technological efficiency, which, in our view, will only be fully realized when guided by ethical values and oriented toward the common good.

From a more practical and organized perspective, we can say that the organizational transformation of commercial companies is the main advantage associated with their use of advanced technology, especially AI systems¹⁰. This transformation occurs because the use of these technologies allows for process optimization and cost reduction, transforming the way value is created, interacting more intelligently with stakeholders, and reconfiguring business models.

We reiterate that in the field of financial management, AI systems are true allies, as they can analyze large amounts of data and make multiple, diverse predictions in an extremely short period of time. This will enable decision-making with greater precision, less risk, and, above all, with more and better (properly processed) information.

In logistics, the importance of AI systems in supply chains is undeniable, optimizing the process and making it more efficient.

With robotics process Automation eliminates repetitive and merely bureaucratic tasks, freeing up human resources for more interesting and strategically important tasks, allowing existing human resources to be managed and directed and, on the other hand, motivating them in carrying out their tasks.

In marketing (especially digital marketing), AI systems are crucial for personalizing customer preferences, targeting advertising to their priorities and desires, and thus increasing potential sales. Algorithm personalization is currently essential to the survival of any company that relies on customer relationships.

AI systems can also respond to different scenarios, enabling greater adaptability to unexpected situations and anticipating new economic and social landscapes. This gives managers the opportunity to prepare for new situations, transforming adversity into opportunity. In a highly competitive market like today's, this capability is essential to any company's survival. These capabilities are complemented by the use of chatbots and virtual assistants, which, in addition to strengthening and improving communication with consumers, can gather valuable information essential to increasing sales.

Cognitive analysis by AI systems is essential for trend prediction, as they have the ability to analyze patterns on a large scale, reaching conclusions impossible for humans.

Transparency in corporate governance has long been called for, aiming to avoid accounting engineering exercises, such as opaque accounts, biased information, and fraud by directors. Algorithmic governance, which implies that decisions are made in a symbiotic relationship and a balance between the director's human experience and the information provided by the algorithm (capable, as we have emphasized several times) of gathering and processing a large volume of information, brings unique benefits to the transparency of corporate governance. However, this undeniable advantage also poses the greatest challenge in using AI systems in directors' decision-making: the ethical and legal challenge. These decisions must always be auditable, and directors must be able to demonstrate the business reasonableness of their decision and ensure that it does not violate any ethical and legal principles that affect human dignity, the values, and the principles underlying the rule of law in which the company operates. Therefore, the administrator cannot hide behind the algorithm to make illegal, irrational, or immoral decisions. It is also important to note that the administrator must know exactly what AI system they are using, from its origins to how it operates. Only

⁹ As rightly stated in a McKinsey & Company study (Bughin et al., 2018), "more than 50% of the tasks currently performed in companies have the potential to be automated, freeing workers for higher-value strategic functions."

¹⁰ In this regard, Davenport and Ronanki (2018) *Artificial Intelligence for the Real World*, Harvard Business Review (HBR), state that AI systems, within the scope of commercial enterprises, are divided into three categories: process automation, cognitive analysis, and customer interaction. They also conclude that each of these categories plays an essential role in the success of the business purpose.

then can they ensure that the system in question will not contribute to decision-making that causes harm (financial or otherwise), discriminatory practices, or privacy violations, either to the company they manage or to those who interact with it¹¹.

It will also be up to company directors to determine strategies for training their employees, as it is urgent to invest in digital literacy. This concept is quite broad and goes beyond the technical knowledge required to keep up with technological developments and take full advantage of them. Digital literacy aims to empower users to identify, analyze, and evaluate the information provided by AI systems. The importance of digital literacy is paramount, especially considering the specific scenario of disinformation we currently experience. Directors must ensure that they access reliable sources and that their employees do not present solutions based on unreliable information¹². In this context, it is also important to emphasize the extreme importance of teaching employees how to use technology and AI systems with respect for the fundamental values that should guide work performance and the company's strategy. In other words, beyond the technical aspects, it is important to impose high cultural and organizational standards in their use.

Ultimately, AI systems will only be useful, like any other tool or device, if they are used well and in support of the company's strategy. If workers don't know what to do with technology, it will be little more than useless. Worse, it could be disastrous, just as it is when a motor vehicle is handed over to someone who doesn't know how to drive. Therefore, it is necessary to equip workers with all the tools to effectively use AI systems and other similar technologies. Alerting them to the potential violation of enshrined rights, particularly those related to data protection, whenever the correct collection and processing of personal data are not ensured¹³.

There have been many expectations surrounding the use of AI systems, and numerous studies have explored the future of the economy, and even humanity, based on these systems. Ethical and legal challenges, along with fears, particularly those related to the replacement of humans by machines and, consequently, the elimination of jobs and professions, have led to some reluctance to support the development of AI systems.

However, AI systems, in particular, and technology, in general, must be seen as allies of human development. Fear of the unknown has always hovered over great discoveries, but it has succumbed to curiosity and the desire to go further, which have always driven human development.

Various studies attempt to anticipate the consequences of AI use, aiming to appease (or not) the most pessimistic. Among other studies, we highlight the recent PwC report (2025), presented at the 2025 World Economic Forum, which analyzes the global impact of AI on transformation and the creation of value, employment, and productivity¹⁴. This report states that AI is effectively transforming the way we do business, revolutionizing business models, productivity, and work dynamics. It demonstrates that AI, especially generative AI, is beginning to be decisive in creating value by contributing to the development of new products and services and by streamlining and improving customer relationships. It concludes that it is currently seen as a facilitator in conducting business, indispensable in any company, regardless of its size.

Regarding the potential replacement of tasks previously performed by humans and, consequently, their replacement, leading to a high unemployment rate, it has been proven that the use of AI systems in recent years has not led to a decrease in the number of workers. In fact, 82% of the executives surveyed stated that, despite the company they manage having adopted AI systems, the number of employees remained unchanged or increased.

In other words, leveraging the use of AI can even generate more jobs, especially since it is expected to lead to an increase in company productivity. In turn, employees' feelings have shifted from fear to dependence, with the vast majority of them (80%) stating that AI (particularly generative AI) exponentially increases their efficiency.

This report clearly concludes that AI systems will have the primary function of complementing the role played by humans, becoming an essential aid in the development and execution of various tasks, freeing up time for areas such as creativity and increasing job satisfaction. This report allays the fears of those who see AI systems as having the capacity to replace humans¹⁵.

¹¹ In this regard, Neto, N (2021). *A Inteligência Artificial no seio da Corporate Governace - O impacto da Inteligência Artificial no Órgão de Administração das Sociedade Anónimas*, Master's thesis, Faculdade de Direito da Universidade de Coimbra, p. 39.

¹² About the importance of literacy in combating misinformation, see the master's thesis in education and digital technologies – EaD de Verissimo, V. S. F. S. (2024), *O combate à desinformação nas iniciativas de literacia digital para adultos em Portugal*, Universidade de Lisboa. Available at: <https://repositorio.ulisboa.pt/bitstreams/939f085c-5bd7-46da-800a-88ca3eb4edd6/download> (Accessed 28 October, 2025).

¹³ The Compliance with the General Data Protection Regulation (GDPR), in force since 2018 in the European Union, is imperative, Regulation (EU) 2016/679.

¹⁴ The document entitled, World Forum Economic, (2025), *How AI's impact on value creation, jobs and productivity is coming into focus*, Available at: <https://www.weforum.org/stories/2025/01/how-ai-impacts-value-creation-jobs-and-productivity-is-coming-into-focus/> (Accessed 28 October, 2025).

¹⁵ In 2023, an OECD study estimated that around 14% of current jobs could disappear due to the implementation of automation processes. The same study also estimates that about 30% of current jobs will undergo transformations, certainly requiring professional retraining. Among the professions most exposed to this phenomenon are those related to accounting, management, and law. It is worth noting that this potential replacement raises concerns at various levels,

Another report by PwC, now in conjunction with the World Economic Forum¹⁶, clearly concludes that:

“Generative artificial intelligence (GenAI) could significantly boost productivity while reshaping many jobs. By aligning strategic goals with the needs of their people, organizations can create an environment where GenAI improves job quality, productivity, and helps employees take on more meaningful and impactful work.”

These reports and the most recent studies and surveys conclude that AI, especially generative AI, will contribute to prosperity and, by enhancing human capabilities, will mitigate inequalities.

As has been stated throughout this study, institutions in general and companies in particular know how to accommodate these technologies and balance their use with the values and principles that should guide the actions and management of a society committed to achieving excellent corporate governance based on social responsibility, addressing the need for professional retraining and advocating for a fair and balanced labor policy, avoiding the use of systems that can lead to so-called algorithmic opacity¹⁷.

To prevent this from happening, it is up to companies, particularly their directors, to ensure that ethical oversight, algorithm auditing, and ongoing employee training systems are implemented, enabling them, in each situation, to critically analyze the solution presented by the AI system.

In this regard, it is important to ensure that training is provided to workers in a balanced and fair manner, to prevent the creation of two distinct categories of workers: i) skilled (or highly skilled) workers capable of interacting with AI systems and deriving enormous benefits from this interaction; ii) workers who, for various reasons, are unable to use AI systems or only possess the skills to derive limited benefit from them. This potential labor stratification is dangerous and undesirable at all levels. De Stefano calls this phenomenon the "algorithmic division of labor"¹⁸.

In short, we believe we can affirm that AI's potential is enormous, and its current state is one of rapid expansion. It is, without a doubt, a tool that holds enormous power to transform the way society works and lives. As with any other tool with these characteristics, its users must use it ethically and responsibly. We know well that it is not enough to list the principles and values that should not be violated when using these systems. It is therefore urgent to legislate accordingly, lest the legal vacuum be exploited to, to the clear detriment of ordinary citizens, implement harmful measures based solely on the relentless pursuit of profit.

Therefore, in the European Union, the AI Regulation outlined the first legislative framework governing the development and use of AI systems. While not limiting technological development, it ensures respect for the values that guide EU Member States.

After several advances and setbacks, it was determined that trustworthy AI must respect three fundamental pillars: i) legality, requiring strict compliance with all applicable standards; ii) ethics, requiring respect for fundamental values and ethical principles; iii) technical and social soundness. These pillars will only be respected if AI systems are: i) controlled by humans; ii) developed and equipped with robust security systems, intended to prevent cyberattacks and, if this is inevitable, the occurrence of serious collateral damage, such as the improper dissemination of personal data; iii) respect for the privacy, quality, and integrity of the data they collect and process; iv) transparency, ensuring the traceability of all actions and decisions taken; v) the ability to model misconduct, bias, unfairness, and discrimination, thus ensuring diversity and equity in the solutions they present; vi) the susceptibility to promote social and environmental well-being, striving for solutions committed to sustainability, with respect for the environment, in favor of a better society.

It is also important to note that technological development may increase the dominance of companies with economic capacity over small companies lacking the capacity to research cutting-edge technological systems. Indeed, large companies, with greater economic resources, will be able to more easily develop and train AI models, increasing their competitive capacity, which is usually already quite high. This means that this reality is likely to widen the technological and financial gap that exists between large and small companies. Technology and knowledge are now the main factors of competitiveness. Personal data is a source of profit and power¹⁹. This reality may also lead to an unhealthy practice that, in certain situations, is even prohibited: the creation of oligopolies over technological innovation. This possibility could, ultimately, make small and medium-sized companies hostage to the technology of large companies (bigtech), placing them in a situation of technological dependence²⁰.

Finally, we highlight the phenomenon known as algorithmic bias as another significant concern. Systems' learning naturally depends on the data they are fed, so it is essential to ensure the quality of such data so that solutions

including the possibility of generating “feelings of alienation and loss of meaning at work,” reducing tasks previously considered intellectual to the mere application of algorithms, as pointed out by GRAEBER (2018).

¹⁶ Joint report by PwC and the World Economic Forum, *Leveraging generative AI for job augmentation and workforce productivity*. (2024), Available at: <https://www.weforum.org/publications/leveraging-generative-ai-for-job-augmentation-and-workforce-productivity/>, (Accessed 28 October, 2025).

¹⁷ Consider the example of Amazon, which in 2018 was forced to stop using an AI system for recruitment because the algorithm was highly biased and discriminated against women in access to technical areas (Dastin, 2018).

¹⁸ *Vd. Stefano, V. (2019). Negotiating the Algorithm: Automation, Artificial Intelligence and Labor Protection*. ILO Working Paper.

¹⁹ *Vd. Zuboff, S. (2019). The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs. The Hatchett Group.

²⁰ To avoid this reality, antitrust regulation must be strengthened and measures implemented to ensure equitable access to technology.

based on them are not tainted by discriminatory principles or capable of violating people's fundamental rights²¹. To avoid this possibility, the creation of a right to algorithmic explainability is already being considered necessary, which will include the right of citizens to fully understand the decisions that affect them and, in the event of an offense or violation of their rights, to challenge them in court²².

The preceding statements, which, as mentioned, sought to outline the main advantages and the most relevant and complex challenges in the use of AI systems by companies, based on the strategy and decisions of directors, also lead to a final reflection related to the liability of those who implement, guide, and decide on the use of AI systems.

This means that company directors, who are ultimately responsible for the decisions and actions taken on behalf of the company, may be held civilly liable for damages caused by the misuse of AI systems. The issues arising in this regard are particularly complex and require more in-depth reflection beyond the scope of this article. However, it will always be argued that the possibility of applying the strict civil liability regime should be considered, considering the Portuguese legal regime and other similarly structured ones (the AI Regulation also moved in this direction)²³. Nevertheless, criminal liability cannot be ruled out outright; in fact, there may be situations that call for its application.

IV. CONCLUSION

A company's director cannot ignore the potential of using AI systems to improve the performance of the company they manage. But the director cannot be algorithmic, even indirectly or partially. The decisions they are responsible for, which go beyond those directly related to the pursuit of commercial activity, must be guided by ethics, legality, and social responsibility. In tasks related to human resources, whether in recruitment, performance evaluation, or decisions about whether or not a particular employee should remain with the company, the use of AI systems must be accompanied by careful and extremely judicious analysis, lest the predicted algorithmic opacity override moral judgment and social sensitivity.

We believe that the use of AI systems will lead to technological empowerment, which in turn will lead to economic empowerment, if (and only if) certain cumulative conditions are met: i) the application of human oversight mechanisms capable of detecting and consequently preventing the phenomenon of algorithmic bias and, therefore, avoiding solutions that lead to discrimination and violations of fundamental rights; ii) empowering managers and employees to understand how AI systems work and to critically analyze the solutions presented; iii) advocating for sustainability and digital humanism, promoting business practices that respect human rights and lead to sustainability as a global concept.

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²¹ There are several examples to highlight in this field where the algorithm penalizes candidates with certain socioeconomic profiles (Noble, 2018).

²² *Vd. Wachter, Mittelstadt & Floridi, (2017), Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation*, International Data Privacy Law, Volume 7, Issue 2, Pages 76–99, Available at <https://doi.org/10.1093/idpl/ix005>, (Accessed 28 October, 2025).

²³ Pagallo, U. (2013). *The Laws of Robots: Crimes, Contracts, and Torts*. Springer.

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