

# Legal Accountability and Ethical Considerations for Outcomes Driven by Artificial Intelligence in Business Operations

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## Abstract

*This paper critically examines the integration of Artificial Intelligence (AI) into business operations, focusing on the challenges of legal accountability and ethical considerations. It first traces the development of AI and its transformative impact on commerce, providing a basis for examining the key ethical and responsibility challenges. The paper presents research findings that highlight the complexity of assigning responsibility for AI-generated outcomes and discusses the different approaches in national and international legal frameworks for AI. It emphasizes the need for clear legal structures and ethical guidelines to govern the role of AI in business and society. The paper concludes by highlighting the importance of harmonized global frameworks to ensure the responsible integration of AI, addressing both theoretical and policy implications. The findings point to a significant shift in legal trends and societal impacts due to AI and emphasize the urgent need for ethical deployment to prevent the reinforcement of societal biases.*

## 1. INTRODUCTION

On September 13, 2023, the first “AI Insight Forum” was held in Washington, D.C. At this event, the most prominent tech industry leaders like Elon Musk, Mark Zuckerberg, Sundar Pichai, and Sam Altman met several lawmakers, most of them U.S. Senators.<sup>1</sup> This event was a crucial part of Senate Majority Leader Chuck Schumer's 'SAFE Innovation' initiative, aiming to promote transparent discussions in Congress about regulating AI.<sup>2</sup> The primary purpose of the meeting was to talk about

<sup>1</sup> Cecilia Kang, “In Show of Force, Silicon Valley Titans Pledge ‘Getting This Right’ With A.I.,” <https://www.nytimes.com/2023/09/13/technology/silicon-valley-ai-washington-schumer.html>.

<sup>2</sup> Senate Democrats, “Majority Leader Schumer Delivers Remarks To Launch SAFE Innovation Framework For Artificial Intelligence At CSIS,” <https://www.democrats.senate.gov/news/press-releases/majority-leader-schumer-delivers-remarks-to-launch-safe-innovation-framework-for-artificial-intelligence-at-csis>.

potential AI regulation, with tech leaders expressing varying levels of support for government oversight and diverse perspectives on its implementation.<sup>3</sup>

At the heart of these discussions lies the rapidly evolving field of AI. AI is commonly defined as the capability of machines to mimic human-like reasoning, learning, and problem-solving, enabling them to perform tasks that typically require human intelligence, such as decision-making and speech recognition.<sup>4</sup> The ultimate goal of AI is to develop Artificial General Intelligence (AGI), which can perform any task a human can and potentially exceed human capabilities in most cognitive domains.<sup>5</sup>

The concept of AI has evolved over several decades, from significant moments like Alan Turing's introduction of the "Turing Test" in the 1950s to periods of rapid advancement interrupted by temporary stagnation.<sup>6</sup> Notable achievements, such as IBM's Deep Blue defeating world chess champion Gary Kasparov in the late 1990s, demonstrate AI's potential.<sup>7</sup>

Nowadays, digital communication, the emergence of algorithms, and the rise of AI have an impact on people's daily lives.<sup>8</sup> As the technology evolved, the practical applications of AI expanded - transitioning from theoretical concepts to everyday business operations.<sup>9</sup> With these broader developments, specific subfields within AI, such as Machine Learning (ML), have gained prominence. ML uses algorithms to analyze data, identify patterns, and enhance decision-making over time, refining its capabilities based on processed data.<sup>10</sup> Consequently, both AI and ML have become indispensable tools in the corporate world, facilitating tasks ranging from "image and speech recognition, web search, fraud detection, email/spam filtering, financial risk modeling, and so on".<sup>11</sup> The applications are

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<sup>3</sup> Mary Clare Jalonick and Matt O'Brien, "Tech Industry Leaders Endorse Regulating Artificial Intelligence at Rare Summit in Washington | AP News," <https://apnews.com/article/schumer-artificial-intelligence-elon-musk-senate-efcfb1067d68ad2f595db7e92167943c>.

<sup>4</sup> Ida Arlene Joiner. *Emerging Library Technologies: It Is Not Just for Geeks* (Cambridge: Chandos Publishing, 2018), 2.

<sup>5</sup> Michael Cheng-Tek Tai, "The Impact of Artificial Intelligence on Human Society and Bioethics," *Tzu-Chi Medical Journal* 32, no. 4 (2020): 339.

<sup>6</sup> Alan Mathison Turing, "Computing Machinery and Intelligence," *Mind* LIX, no. 236 (1950): 446-447..

<sup>7</sup> SITNFlash, "The History of Artificial Intelligence," <https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/>

<sup>8</sup> Riczu Zsofia. "Recommendations on the Ethical Aspects of Artificial Intelligence, with an Outlook on the World of Work," *Journal of Digital Technologies and Law* 1, no. 2 (2023): 502.

<sup>9</sup> Ida Merete Enholm et al, "Artificial Intelligence and Business Value: A Literature Review," *Information Systems Frontiers* 24, no. 5 (2022): 1709, 1711, 1720, 1724.

<sup>10</sup> J. Matthew Helm et al, "Machine Learning and Artificial Intelligence: Definitions, Applications, and Future Directions," *Current Reviews in Musculoskeletal Medicine* 13, no. 1 (2020): 69-76.

<sup>11</sup> Kamal Choudhary et al, "Recent Advances and Applications of Deep Learning Methods in Materials Science," *Npj Computational Materials* 8, no. 1 (2022): 1.

numerous and influential. AI's remarkable capacity to interpret, infer, and autonomously learn underscores its status as a groundbreaking technological advancement. Through AI, organizations can increase creativity, optimize operations, and achieve superior performance outcomes. This technology, which relies on human skills and other resources, enables companies to differentiate themselves in the market, gain a competitive advantage, and increase the company's value.<sup>12</sup>

The increasing importance of AI in legislation is reflected in the rise of AI-related bills worldwide. From a single bill in 2016, the number has grown to 37 in 2022. This legislative attention extends beyond the United States. By 2022, the U.S. had enacted 9 AI-related laws, with countries like Spain and the Philippines enacting 5 and 4 AI-related laws, respectively. These global legislative trends underscore the urgency and significance of AI in today's world.<sup>13</sup>

As AI becomes more integrated across sectors, discussions about its regulation reflect the societal implications and challenges of this technology. As AI systems gain autonomy and power, questions about responsibility, ethics, and control become increasingly important. The global trend toward more AI legislation is a collective step toward creating a legal framework that addresses the unique challenges of AI and ensures its responsible integration into our daily lives.

However, as AI's influence expands, so do the complexities associated with its integration, particularly in terms of legal and ethical implications.<sup>14</sup> As AI becomes more embedded in the business world, it raises the critical question of accountability for outcomes, which this paper will explore in more detail.

The integration of AI in businesses, while offering many benefits, also raises questions about responsibility and accountability. Unlike traditional systems, AI has the unique ability to autonomously learn, evolve, and make decisions without human intervention.<sup>15</sup> This makes it increasingly difficult to figure out where or with whom responsibility lies when an AI decision leads to unexpected or unintended results.<sup>16</sup>

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<sup>12</sup> Patrick Mikalef and Manjul Gupta, "Artificial Intelligence Capability: Conceptualization, Measurement Calibration, and Empirical Study on Its Impact on Organizational Creativity and Firm Performance," *Information & Management* 58, no. 3 (2021): 1, 3, 7, 12.

<sup>13</sup> Stanford University, "AI Index Report 2023 – Artificial Intelligence Index," <https://aiindex.stanford.edu/report/>.

<sup>14</sup> Rowena Rodrigues, "Legal and Human Rights Issues of AI: Gaps, Challenges and Vulnerabilities," *Journal of Responsible Technology* 4, (2020): 1.

<sup>15</sup> Edd Gent, "Artificial Intelligence Is Evolving All by Itself," <https://www.science.org/content/article/artificial-intelligence-evolving-all-itself>.

<sup>16</sup> Laura Crompton, "The Decision-Point-Dilemma: Yet Another Problem of Responsibility in Human-AI Interaction," *Journal of Responsible Technology* 7–8, (2021): 4.

For companies, this brings many challenges. On the one hand, there are the operational challenges: If an AI system does not work or delivers suboptimal results, who is responsible? The developers of the AI? The operators? Or the system itself? On the other hand, there are the legal and social challenges. Assigning responsibility for AI outcomes becomes even more complex when one considers the differing perspectives of policymakers around the world. For example, while the UK is concerned about the risks of automation through AI, Japan is focused on protecting human rights from the potential threats of AI. These different viewpoints underscore the multi-layered challenges that AI poses.<sup>17</sup>

In the legal realm, AI is confronted with traditional norms and frameworks designed primarily for human actors, often based on notions of intent, negligence, and accountability. When a person acts wrongfully, his or her intent, foreseeability of harm, and duty of care are usually evaluated under the law. However, when an AI system causes harm, determining its 'intent' becomes complex. Did it act based on its programming, or was it a result of unpredicted pattern recognition? Traditional legal concepts formulated for human actions become ambiguous when applied to AI. For instance, if an AI-driven trading system in a financial institution makes decisions leading to significant financial loss, who bears the blame: the AI, the programmers, the financial strategists, or the institution itself? Or if an AI-powered customer service bot provides misinformation, resulting in client losses or lawsuits, who is responsible?

In addition, while it has touched the immediate operational impacts, there are also societal concerns. Because AI draws on massive datasets, it can not only reflect societal biases built into its training data, but it can also unintentionally spread those biases on a larger scale.<sup>18</sup> For example, if an AI hiring tool systematically discriminates against a particular group based on gender, race, or other protected characteristics, who will be held accountable for that discrimination? Is it the business deploying the tool, the designers who coded the algorithm, or the data providers?

While these questions are philosophical in nature, they also have real-world implications and are shaping the way AI is integrated into businesses and, by extension, our society. The need to address them is not just a matter of legal compliance but also a matter of ethics, public trust, and the long-term sustainability of AI-driven operations. As AI becomes more central in businesses across sectors, it is important to understand, evaluate, and eventually address these challenges to ensure responsible use.

This paper addresses the multiple challenges and implications of integrating AI into the corporate landscape. The central discussion is the

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<sup>17</sup> Rodrigues, *op.cit.*, 266.

<sup>18</sup> Bertrand K. Hassani, "Societal Bias Reinforcement through Machine Learning: A Credit Scoring Perspective," *AI and Ethics* 1, no. 3 (2021): 239.

key issue of accountability for the outcomes achieved by AI systems. As the influence of AI increases in the business world, it becomes imperative for the legal sector to provide a clear framework for accountability, particularly in cases of unexpected or unintended outcomes.

The examination begins with a brief overview of the historical origins of AI, showing its journey from a mere concept to a transformative technological force in modern commerce. This historical context sets the stage for a comprehensive analysis of the key issues surrounding AI, including the ethical implications of its actions and the complexities of determining accountability.

Given the global impact of AI, the research extends to both domestic and international legal frameworks. It seeks to understand how different regions are adapting to the growing presence of AI in business and to identify new standards for AI accountability. In doing so, it does not limit ourselves to the immediate operational challenges that AI brings but also looks at the broader societal implications. For example, the potential of AI to reflect and reinforce societal biases is a major concern, underscoring the need for its ethical use in business to prevent the perpetuation of existing societal inequalities.

It focuses on a comprehensive analysis of the role of AI in business and the associated legal challenges but refrain from explaining the technical intricacies of AI algorithms or providing a detailed overview of AI development. In addition, while we address international legal frameworks, a thorough analysis of each country's AI regulation remains outside the scope of this paper.

There is still a lack of research that explores the various dimensions of ethical or legal problems in which AI would be involved.<sup>19</sup> Several studies discuss the ethical issues and the grounds for ensuring legal certainty in the field of digital technologies and, to some extent, cover the need to regulate the use of AI.<sup>20</sup>

Manhein and Kaplan (2019) observed that while AI presents new disruptive dangers to various aspects (e.g. social values, constitutional rights, and democracy), the law is slow to catch up with its advances.<sup>21</sup> In the context of ethics and privacy, Kopalle et al (2022) found that regulations are generally used to mitigate the impact of human-machine interaction

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<sup>19</sup> Luis Alex Valenzuela-Fernández et al, "Law and Artificial Intelligence: Possibilities and Regulations on the Road to the Consummation of the Digital Verdict," *Journal of Law and Sustainable Development* 11, no. 6 (2023): 10.

<sup>20</sup> See Damian Cyman, Elizaveta Gromova, and Edvardas Juchnevičius, "Regulation of Artificial Intelligence in BRICS and the European Union," *BRICS Law Journal* 8, no. 1 (2021): 88.

<sup>21</sup> Karl Manheim and Lyric Kaplan, "Artificial Intelligence: Risks to Privacy and Democracy," *Yale Journal of Law and Technology* 21 (2019): 108.

upon consumer privacy.<sup>22</sup> Scherer (2016) examined the characteristics of AI that present regulatory challenges; analysed the competencies of government entities, legislatures, agencies, and courts in terms of regulating AI; and offered a proposed framework for AI regulation based on differential tort liability.<sup>23</sup> A master thesis written by Lenardon (2017) argued that, due to the nature of AI, there is a need for centralized regulation, with harmonization across Europe, and suggested legislators establish the principles and the basic rules while a regulatory agency would deal with its technological intricacies.<sup>24</sup>

An institutional approach to the global AI framework was used by Erdélyi and Goldsmith (2018) when proposing the establishment of the International Artificial Intelligence Organization (IAIO) as a new intergovernmental organization that could be given a mandate to develop an international regulatory framework of AI.<sup>25</sup> Mindaugas (2023) was aware of anthropocentric biases and assumptions in AI research, development, and policymaking and then argued that only an agnostic approach to AI ethics and legal regulation will enable AI systems to play an essential role in society, respect and contribute to the freedoms and wellbeing of both humans and AI entities.<sup>26</sup> Angela et al (2021) revealed the debates on the ethics and regulation of AI and provided a comparative analysis, particularly emphasizing the relationship between ethics and law in various countries.<sup>27</sup> Some thematic research on AI faces conceptual challenges due to the absence or lack of case laws that affect the interpretation of AI or how the legal mechanisms should be applied to AI.<sup>28</sup>

It slightly differs from the studies mentioned above; the present paper offers a different lens in exploring the current trend of AI as it analyses how AI plays a role in business and the associated legal constraints. The

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<sup>22</sup> Praveen K. Koppalle et al, "Examining Artificial Intelligence (AI) Technologies in Marketing via a Global Lens: Current Trends and Future Research Opportunities," *International Journal of Research in Marketing* 39, no. 2 (2022): 526-527.

<sup>23</sup> Matthew U. Scherer, "Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies," *Harvard Journal of Law and Technology* 29, no. 2 (2016): 357.

<sup>24</sup> João Paulo de Almeida Lenardon, "The Regulation of Artificial Intelligence," (Master's Thesis, LLM Law and Technology, Tilburg University, 2017), 53-54.

<sup>25</sup> Olivia J. Erdélyi and Judy Goldsmith, "Regulating Artificial Intelligence: Proposal for a Global Solution," *Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics, and Society* (2018): 96-100.

<sup>26</sup> Mindaugas Kiškis, "Legal framework for the Coexistence of Humans and Conscious AI," *Frontiers in Artificial Intelligence* 6, (2023): 6.

<sup>27</sup> Angela Daly et al, "AI, Governance and Ethics: Global Perspectives." Chapter. In *Constitutional Challenges in the Algorithmic Society*, ed. Hans-W. Micklitz et al, (Cambridge: Cambridge University Press, 2021), 182-198.

<sup>28</sup> See for example the legal aspects of artificial intelligence in the context of health system in Christopher Ryan Boniface, "The Legal Impact of Artificial Intelligence on the New Zealand Health System," (Dissertation, Doctor of Philosophy, the University of Canterbury School of Law, 2021), 10-11.

research is limited to not describing the technical intricacies of AI as generally covered in other studies. Besides, it does not provide deep research on state practices in regulating AI in their domestic law that has been conducted in other comparative legal research.

## **2. RESULT AND ANALYSIS**

### **2.1. Evolution of Artificial Intelligence in Business**

The evolution of AI, from its early ideas to its establishment as a versatile technology, has spanned several decades. Both theoretical and technological advances marked these periods. By the 1950s, pioneers such as Alan Turing, have already been exploring the frontiers of AI. Turing introduced the "Turing Test" as a measure of machine behavior that could be equivalent to human cognitive ability. This laid the groundwork for the automation of decision-making processes, which are now integral in business operations.<sup>29</sup>

In 1956, Allen Newell, Cliff Shaw, and Herbert Simon introduced Logic Theorist. This early AI program, presented as part of the Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI), not only marked the beginnings of AI but also hinted at the potential of automation and logical thinking in business processes. It was here that John McCarthy coined the term "artificial intelligence" and envisioned a collaborative future for the field. Between 1957 and 1974, advances in computers and algorithms drove the growth of AI. Despite the initial enthusiasm and promising prospects, AI progress was slowed in the late 1970s by limited computing capacity and overly high expectations.<sup>30</sup>

In the 1980s, AI surged due to new algorithms and increased funding, with pioneers like Hopfield and Rumelhart introducing deep learning (DL) techniques that paved the way for modern machine learning applications, which businesses now leverage for data analytics, predictive modeling, and automation.<sup>31</sup> Edward Feigenbaum developed expert systems, which have had a direct impact on business by automating complex decision-making processes by utilizing encoded expert knowledge in various fields including medical diagnosis and geologic exploration.<sup>32</sup> The Japanese government's significant investment in the Fifth Generation Computer Project, while not fully meeting its goals, potentially inspired a new tech generation. Landmarks such as IBM's Deep Blue defeating the world chess champion Gary Kasparov in 1997 not only highlighted AI's advancements but signaled its emerging dominance in practical applications.

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<sup>29</sup> Turing, *op.cit.*, 433. See also TIBCO Software, "What Is Decision Automation?," <https://www.tibco.com/reference-center/what-is-decision-automation>.

<sup>30</sup> SITNFlash, *loc.cit.*

<sup>31</sup> Choudhary et al, *op.cit.*, 1.

<sup>32</sup> Association for Computing Machinery, "Edward A ("ED") Feigenbaum," [https://amturing.acm.org/award\\_winners/feigenbaum\\_4167235.cfm](https://amturing.acm.org/award_winners/feigenbaum_4167235.cfm).

The true resurgence of DL, particularly its modern form, occurred in the 2010s. Advancements in neural networks, particularly Convolutional Neural Networks (CNNs), revolutionized sectors such as image and speech recognition.<sup>33</sup> The world of technology has witnessed significant advancements in Natural Language Processing (NLP), with models like BERT and GPT acting as game-changers. These models transformed machine-human language interactions, setting new standards and paving the way for future innovations in the domain.<sup>34</sup>

In summary, as AI has evolved, its integration with the needs of business has become apparent. Every significant advancement in AI technology has brought about transformative changes in the business sector, compelling companies to adapt and innovate continuously. These changes have necessitated a thorough reassessment of legal frameworks, as new AI applications often present complex challenges regarding data privacy, intellectual property, and liability. Additionally, the ethical implications of AI deployment, such as algorithmic bias and the impact on employment, have become critical considerations for businesses striving to maintain responsible practices in an AI-driven era.

## **2.2. Integration of Artificial Intelligence in Business Operations**

As previously described in Section 1, the meeting of key technology leaders on September 13, 2023, underscores the broad integration and importance of AI in large enterprises. Such high-level dialogues are a clear indicator of how central AI has become in today's business landscape. Many of the companies represented by these technology leaders have consistently set new standards in areas such as electric vehicles, space exploration, renewable energy, and, of course, AI. They are not only championing the potential of AI, but also seeking to harness its transformative power for the benefit of humanity.<sup>35</sup>

Tesla, for example, has pioneered the use of AI to revolutionize the automotive industry under the leadership of Elon Musk. The company has integrated AI into its vehicles, notably through the autopilot driver capability, which offers a range of advanced driver-assist features, marking

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<sup>33</sup> Yann LeCun, Yoshua Bengio, and Geoffrey Hinton, "Deep Learning," *Nature* 521, no. 7553 (2015): 436–444.

<sup>34</sup> Manas Joshi, "Natural Language Processing: Beyond BERT and GPT," <https://pub.towardsai.net/natural-language-processing-beyond-bert-and-gpt-84f052850d66>.

<sup>35</sup> Ashutosh J, "Elon Musk: The Visionary Pioneer Who Transformed Industries," [https://medium.com/@fact\\_file/elon-musk-the-visionary-pioneer-who-transformed-industries-815e0b874bbb](https://medium.com/@fact_file/elon-musk-the-visionary-pioneer-who-transformed-industries-815e0b874bbb).



a significant step in the company's journey towards autonomous driving technology.<sup>36</sup>

Facebook, led by Mark Zuckerberg, wants to help computers understand language in a more contextual way, similar to humans, instead of just binary interpretations. The company has developed systems like Deep Text that analyze user-generated content to identify relationships between words, understand slang, and even determine the context-specific meaning of words. This technology not only helps improve user interaction by understanding the context of their posts and comments but also helps filter out prohibited content, rank search results, and identify trending topics.<sup>37</sup>

Google, led by Sundar Pichai, is at least as committed to AI, as evidenced by a wide range of products and services. The tech giant has seamlessly integrated DL into its search engine, marking a transformative shift from traditional rule-based algorithms. This evolution in search technology is just the tip of the iceberg. In the realm of advertising, Google Ads and Doubleclick have adopted Smart Bidding, a sophisticated machine learning-powered system, to refine and enhance ad targeting. Meanwhile, YouTube, one of the world's most popular video platforms, employs AI to prevent brands from appearing next to potentially offensive content. Nevertheless, Google's AI endeavors continue beyond there. Their suite of applications, from Google Photos to Gmail, are infused with AI capabilities. Whether suggesting which photos to share with friends or offering smart email replies tailored to individual user styles, AI is at the heart of enhancing user experience. Other products like Google Maps, Google Drive, and Google News have also harnessed the power of AI, offering features like predictive driving routes, smart meeting scheduling, and organized news stories based on relational relevance. In essence, Google's dedication to AI innovation is reshaping our digital experiences, making them more intuitive, efficient, and personalized.<sup>38</sup>

OpenAI, with Sam Altman at the helm, is in a unique position in that its core mission revolves around advancing AI. OpenAI is not only researching and developing cutting-edge AI models such as ChatGPT but in light of the global processor shortage, has even considered building its own AI chips to run these extensive models.<sup>39</sup>

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<sup>36</sup> Divya Kumari and Subrahmanya Bhat, "Application of Artificial Intelligence Technology in Tesla- A Case Study," *International Journal of Applied Engineering and Management Letters* 5, no. 2 (2021): 205–218.

<sup>37</sup> "7 AI Applications @ Facebook," <https://research.aimultiple.com/introducing-facebook-ai-no-magic-just-code/>.

<sup>38</sup> "Top 15 AI Projects Powering Google Products in 2023," <https://research.aimultiple.com/ai-is-already-at-the-heart-of-google/>.

<sup>39</sup> Tom Carter, "OpenAI Is Exploring Making Its Own Chips as AI Companies Scramble to Overcome the Global Processor Shortage, Report Says," <https://finance.yahoo.com/news/openai-exploring-making-own-chips-102609356.html>.

The active participation and representation of such tech giants in the legislative dialogue is a clear indicator of the pervasive and transformative role AI plays in various industries and facets of modern life. This widespread integration of AI, exemplified by companies like Tesla, Facebook, Google, and OpenAI, highlights the urgent need for a reevaluation of legal frameworks, particularly to address the emerging ethical and privacy concerns associated with these technological advancements.

## **2.3. Ethical Considerations**

### **2.3.1. General Ethical Challenges in Artificial Intelligence**

AI is at the forefront of technological advancement and raises significant ethical concerns. Henz argues that while the constitution of a democratic society defines a country's values, its laws dictate the preferred or tolerated behaviors. However, given the rapid pace of technological development, laws often lag, so society must follow ethical principles in the meantime.<sup>40</sup>

The nature of AI, particularly its decision-making capabilities, was discussed. A prime example of the ethical challenges associated with AI is the adaptation of the trolley dilemma for autonomous vehicles. In this thought experiment, imagine a self-driving car facing an unavoidable accident and having to decide: Should it swerve to save a group of five pedestrians, even if it endangers its only passenger in the process? Or should it prioritize the safety of its passengers at the expense of the larger group? Such hypotheticals, while extreme, shed light on the complicated ethical decisions AI might one day make and underscore the need for a robust ethical framework for AI behavior.

In the healthcare sector, the introduction of AI not only exacerbates existing ethical challenges but also opens up potential scenarios in which AI could cause human suffering.<sup>41</sup> Decisions such as weighing the duration of suffering for multiple people versus one person underscore the profound ethical dilemmas that AI presents. This scenario is particularly evident when considering how AI might prioritize or differentiate among individuals, highlighting the urgent need for ethical guidelines. One possible guiding principle for such dilemmas is "effective altruism."<sup>42</sup> This philosophy emphasizes the use of evidence and reason to find the most effective way to improve outcomes. Applied to AI in healthcare, it suggests that algorithms should prioritize overall benefits, which include both immediate medical outcomes and also societal impacts. By adhering to the principles of effective

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<sup>40</sup> Patrick Henz, "Ethical and Legal Responsibility for Artificial Intelligence," *Discover Artificial Intelligence* 1, (2021): 1.

<sup>41</sup> Zsofia, *op.cit.*, 508-509.

<sup>42</sup> *Ibid.* See also Brian Berkey "The Philosophical Core of Effective Altruism," *Journal of Social Philosophy* 52, no. 1 (2021): 95-97.

altruism, AI systems in healthcare may be better able to both ensure individual patient care and deliver societal benefits.

While the above challenges represent a broader perspective on the ethical dilemmas of AI, company-specific challenges underscore the need to address these concerns.

### **2.3.2. Business-Specific Ethical Challenges**

The rise of AI shows not only its technical capabilities but also its decision-making potential. Consider the successes of AI in defeating humans in games such as chess, Go, poker, and even StarCraft II. Not only do these successes show that AI is capable of making complex decisions, but they also serve as a public demonstration of its capabilities and lead to a shift in human perception. Over time, people who have seen how good AI is in games have suspected that it could be just as reliable in the real world.<sup>43</sup>

As the potential of AI is recognized, its integration into business processes has increased significantly. This trend is reflected in the fact that many people now trust AI algorithms more than their human peers. A 2019 global study by Oracle and Future Workplace found that 64% of respondents trust a robot more than their supervisor for tasks such as providing unbiased information and managing budgets. Companies should consider such things if they want to avoid facing negative public perception, dwindling consumer trust, or even legal consequences. Conversely, companies that prioritize ethical AI can build stronger customer relationships, gain a positive reputation, and potentially gain a competitive advantage. However, there are downsides to this emerging trust. An eye-opening experiment at the Georgia Institute of Technology, in which participants mindlessly followed the instructions of a malfunctioning robot in emergency scenarios, illustrates the potential dangers of blind faith in AI.<sup>44</sup>

Another problem is the opacity of some AI systems, often referred to as a "black box." As AI algorithms become more complex, it can be challenging to understand their decision-making processes.<sup>45</sup> In a business context, this lack of transparency can be problematic, especially when stakeholders demand explanations for AI-driven decisions and uncontrolled errors or biases may go unnoticed. As a result, there is a growing need for transparent AI models, or at least a clear justification for AI results.<sup>46</sup> Such cases highlight the human vulnerabilities in dealing with AI. They also

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<sup>43</sup> Henz, *op.cit.*, 2.

<sup>44</sup> *Ibid.*, 3.

<sup>45</sup> Warren J. von Eschenbach, "Transparency and the Black Box Problem: Why We Do Not Trust AI," *Philosophy & Technology* 34, no. 4 (2021): 1607–1622.

<sup>46</sup> Deloitte United States, "Managing the Black Box of Artificial Intelligence (AI)," <https://www2.deloitte.com/us/en/pages/advisory/articles/black-box-artificial-intelligence.html>.

highlight the ethical obligations companies have when using AI to ensure not only efficiency and profitability but also the safety and well-being of their stakeholders.

Another pressing ethical issue is the potential bias of AI algorithms. Because AI systems often learn from historical data, they can inadvertently perpetuate existing biases. In business, this can manifest itself in biased hiring decisions, biased customer service, or unfair credit approvals. It is critical for companies to identify and correct such biases, not only for ethical reasons but also to minimize potential legal and reputational risks. Conducting regular checks on AI systems, incorporating diverse training data, and actively seeking to eliminate identified biases are essential steps companies should take.<sup>47</sup>

In summary, AI plays a central role in various sectors, and it is therefore of utmost importance to address the ethical aspects related to its deployment and use. From potential biases to transparency issues, companies must consider a variety of ethical hurdles. As Henz points out, while AI is a powerful tool, humans remain morally responsible for its development, deployment, and use. Given the rapid adoption and use of AI in businesses, it is not only a moral obligation but also a business imperative to ensure that AI systems are developed and deployed ethically and are aware of their societal impact.<sup>48</sup>

#### **2.4. Challenges in Responsibility**

On September 13, 2023, the US Senate hearing focused on the complexity of determining accountability for AI systems. The debate became more intense as participants discussed who should be held accountable: the developers, the users, or the AI itself. Senate Majority Leader Chuck Schumer stressed the importance of these issues, especially given recent advances in AI technology.<sup>49</sup>

The paper titled "Reasoning about responsibility in autonomous systems: challenges and opportunities" by Vahid Yazdanpanah et al sheds light on these complexities. Ensuring the trustworthiness of autonomous systems and AI is an interdisciplinary endeavor, the authors argue that this endeavor will benefit from technical advancements in capturing various forms of responsibility. They present a comprehensive research agenda to achieve this, emphasizing the importance of formal and computationally implementable notions of responsibility, blame, accountability, and liability. These notions are crucial for addressing potential responsibility gaps,

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<sup>47</sup> Henz, *loc.cit.*

<sup>48</sup> *Ibid.*

<sup>49</sup> Jalonick and O'brien, *loc.cit.*

situations in which a group is responsible, but individual responsibility may be unclear.<sup>50</sup>

The paper further highlights the need for AI systems to reason about potential responsibility-related issues in prospect. This would enable them to minimize harmful consequences and ensure ethical and trustworthy behaviors. The challenge lies in the fact that humans are not always in a position to reason about and understand which part of a system they are expected to 'take over control of' and at which appropriate moment.<sup>51</sup> Moreover, as we move from AI systems in labs to real-life autonomous systems, such as in transportation and healthcare, the reliability and ability of these systems to handle potential failures become essential for societal acceptance. System designers and manufacturers should not only aim for optimal performance but also consider how their systems handle failures. The integration of resilience-ensuring mechanisms is essential to ensure that a failure in one part of the system does not lead to significant damage to the performance of the whole system.<sup>52</sup>

In 2018, Amazon abandoned an AI-based recruitment program after discovering it was biased against women. This example is particularly relevant because it involves a major tech company and highlights the challenges of unintended biases in AI systems.<sup>53</sup>

The Equal Employment Opportunity Commission (EEOC) had a case where a tutoring company settled for \$365,000 over charges that its AI-powered recruitment tool was discriminatory. This example is crucial as it involves legal action and a settlement, emphasizing the real-world legal implications of AI biases.<sup>54</sup>

There was a proposed class action against Tesla regarding "phantom braking" problems in its autonomous vehicles. This example showcases potential product liability issues with autonomous systems.<sup>55</sup> Another problem involving Tesla is, where a Tesla Model S, on autopilot, was involved in a fatal crash, leading to vehicular manslaughter charges against the

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<sup>50</sup> Vahid Yazdanpanah et al, "Reasoning about Responsibility in Autonomous Systems: Challenges and Opportunities," *AI & Society* 38, no. 4 (2023): 1453–1464.

<sup>51</sup> *Ibid.*, 1455.

<sup>52</sup> *Ibid.*

<sup>53</sup> Nish Parikh, "Council Post: Understanding Bias In AI-Enabled Hiring," <https://www.forbes.com/sites/forbeshumanresourcescouncil/2021/10/14/understanding-bias-in-ai-enabled-hiring/>.

<sup>54</sup> Raeann Burgo and Wendy Hughes © Fisher Phillips, "EEOC Settles First-Ever AI Discrimination Lawsuit," <https://www.shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/eec-settles-ai-discrimination-lawsuit.aspx>.

<sup>55</sup> Elsa Bullard and Tess Godhardt, "Autonomous Vehicle Product Liability Cases: The Road Ahead," <https://www.law360.com/articles/1529785/autonomous-vehicle-product-liability-cases-the-road-ahead>.

driver. This example highlights the complexities of determining responsibility when AI systems are involved in critical incidents.<sup>56</sup>

These diverse incidents, spanning from recruitment processes to autonomous transportation, underscore the widespread influence of AI across multiple sectors. Each domain, be it employment, healthcare, or transportation, presents its own unique set of challenges and implications when integrating AI.

In conclusion, the responsibility of AI systems is a multifaceted issue that requires interdisciplinary solutions. While understanding these challenges is pivotal, it is equally essential to explore potential legal solutions and frameworks that can address these intricacies. The subsequent sections delve into the prevailing national and international legal frameworks that aim to regulate and guide the integration of AI in various sectors, ensuring both progress and accountability.

## **2.5. Legal Frameworks**

“The legal world is waking up to AI. In 2022, there were 110 AI-related legal cases in United States state and federal courts, roughly seven times more than in 2016. The majority of these cases originated in California, New York, and Illinois, and concerned issues relating to civil, intellectual property, and contract law.”<sup>57</sup>

The integration of AI into business operations brings to the forefront the challenges of establishing clear legal frameworks. With AI-driven outcomes becoming more prevalent, there is a pressing need for laws that ensure human accountability. As we explore national and international frameworks, the evolving nature of AI legislation and its implications for business becomes evident.<sup>58</sup>

### **2.5.1. National Legal Frameworks**

As AI continues to shape industries and societies worldwide, national governments have been compelled to respond by crafting tailored legal frameworks. These legislative actions reflect the diverse challenges and opportunities that AI presents, with countries striving to balance innovation with ethical considerations, economic growth with data privacy, and global competitiveness with societal well-being. Figure 1 below offers a glimpse into some of the distinct AI-related legislations from selected countries in 2022,

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<sup>56</sup> NYU Web Communications, “When a Tesla on Autopilot Kills Someone, Who Is Responsible?” <http://www.nyu.edu/content/nyu/en/about/news-publications/news/2022/march/when-a-tesla-on-autopilot-kills-someone--who-is-responsible-->.

<sup>57</sup> Stanford University, *op.cit.*, 17, 266.

<sup>58</sup> Henz, *op.cit.*, 4-5.

showcasing the varied approaches nations have taken in addressing the multifaceted implications of AI.

**Table 1. AI-Related Legislation From Select Countries, 2022**

Country	Bill Name	Description
Kyrgyz Republic	About the Creative Industries Park	This law determines the legal status, management, and operation procedures of the Creative Industries Park, established to accelerate the development of creative industries, including artificial intelligence.
Latvia	Amendments to the National Security Law	A provision of this act establishes restrictions on commercial companies, associations, and foundations important for national security, including a commercial company that develops artificial intelligence.
The Phillippines	Second Congressional Comission on Education (EDCOM II) Act	This law provides for the establishment of a congressional commission to renew the state of the education system. It calls for reforms to meet the new challenges in the education system, which are characterized, among other things, by the rapid development of AI.
Spain	Right to equal treatment and non-discrimination	A provision of this act establishes that artificial intelligence algorithms involved in public administrations' decision-making take into account bias-minimization criteria, transparency, and accountability, whenever technically feasible.
United States	AI Training Act	This bill requires the Office of Management and Budget to establish an AI training program for employees of executive branch agencies. This is intended to ensure that employees are informed about the capabilities and risks associated with AI.

Source: AI Index, 2022 | Table: 2023 AI Index Report

For instance, the focus has primarily been on sector-specific regulations in the United States. The transportation department has been keen on setting guidelines for autonomous vehicles. In contrast, the health department scrutinizes AI in medical diagnostics.<sup>59</sup> As noted above, recent

<sup>59</sup> See “USDOT Automated Vehicles Activities | US Department of Transportation,” <https://www.transportation.gov/AV>. and the Pew Charitable Trusts, “How FDA Regulates Artificial Intelligence in Medical Products,” <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2021/08/how-fda-regulates-artificial-intelligence-in-medical-products>.

Senate hearings illustrate the growing concern at the federal level, regarding the far-reaching implications of AI and the need for comprehensive legislation. Moreover, the 'AI Training Act' in the United States demonstrates a proactive approach to governance. Recognizing that informed governance begins with an informed workforce, this bill mandates AI training for certain executive agencies. This not only ensures responsible AI acquisition but also emphasizes the need for a government workforce that understands AI's nuances.

In Europe, the European Union (EU), while not a single nation, offers a glimpse into a cohesive regional approach, especially in the context of data privacy and AI regulation. The General Data Protection Regulation (GDPR) was enacted to protect individual privacy by reigning in firms' use of personal data.<sup>60</sup> It prescribes specific requirements for AI, such as ensuring a lawful basis for processing personal data, often through explicit consent.<sup>61</sup> It is emphasized that only the data required for specific purposes may be processed,<sup>62</sup> a principle that poses a particular challenge for data-intensive AI systems. The regulation also requires rigorous assessments to identify and mitigate potential risks to individuals' rights before AI systems are deployed.<sup>63</sup> In addition, it insists on robust data security measures to protect personal data<sup>64</sup> and calls for transparency in AI operations to ensure that individuals are clearly informed about how their data is used and processed.<sup>65</sup>

Individual EU nations, like France and Germany, are also exploring national strategies to promote AI innovation while ensuring ethical deployment.<sup>66</sup> Individual countries within Europe are also formulating specific laws addressing AI concerns. For instance, Spain, focusing on the ethical deployment of AI, passed the 'Right to equal treatment and non-discrimination' act.<sup>67</sup> This signifies a move to ensure AI-driven decision-making in public administrations is not only transparent but also devoid of biases, reflecting a broader European commitment to ethical AI.

Asian countries present another spectrum of responses. Japan emphasizes the harmonization of AI advancements with societal values. At the same time, China's rapid AI development is accompanied by state-driven

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<sup>60</sup> Samuel Goldberg,, Garrett A. Johnson, and Scott K. Shriver, "Regulating Privacy Online: An Economic Evaluation of the GDPR," *Law & Economics Center at George Mason University Scalia Law School Research Paper Series* no. 22-25 (2019): 1.

<sup>61</sup> The European Union, General Data Protection Regulation, Arts. 5(1)(c), 6, and 7.

<sup>62</sup> *Ibid.*, Art. 5(1)(b).

<sup>63</sup> *Ibid.*, Art. 35.

<sup>64</sup> *Ibid.*, Art. 32.

<sup>65</sup> *Ibid.*, Arts. 12, 13, and 14.

<sup>66</sup> Ulrike Franke Sartori Paola, "Machine Politics: Europe and the AI Revolution," <https://ecfr.eu/publication/machine-politics-europe-and-the-ai-revolution/>.

<sup>67</sup> See Eduardo Gamero Casado, "Automated Decision-Making Systems in Spanish Administrative Law," *Ceridap* 1 (2023): 31.



guidelines focusing on innovation and control.<sup>68</sup> Similarly, the Kyrgyz Republic has made strides in bolstering its creative sectors. The 'About the Creative Industries Park' law aims to foster the growth of creative industries, encompassing AI. This showcases an approach where AI is viewed not just as a technological tool but as a cornerstone for innovative industries. Following this, the Philippines, recognizing the transformative power of the Fourth Industrial Revolution, instituted the 'Second Congressional Commission on Education (EDCOM II) Act'. This legislation emphasizes the need for an evolved educational framework that addresses the challenges brought about by rapid AI development.

However, a common thread among many nations is the realization that traditional legal frameworks might be inadequate to address the novel challenges posed by AI. The dynamic nature of AI and its ability to learn and evolve autonomously necessitates forward-looking and adaptable national legal frameworks. While some countries have made significant strides, many are still in the nascent stages of drafting AI-specific legislation.<sup>69</sup> This patchwork of national responses underscores the need for international collaboration and standardization, leading us to the broader discussion on international legal frameworks.

### **2.5.2. International Legal Frameworks**

The push towards developing and utilizing AI technologies on a global scale makes it imperative for the international community to develop cohesive legal frameworks. The inherent challenges posed by AI not only transcend national borders but also invoke concerns that are shared by nations around the globe. In this light, several international initiatives have taken the lead.

All 193 member states of the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted a historic agreement on the Ethics of AI. This agreement defines the common values and principles essential for the healthy development of AI. The technology, while prevalent in our daily lives and specialized fields, brings forth challenges such as gender and ethnic bias, threats to privacy, and issues related to mass surveillance. UNESCO's agreement aims to guide the establishment of legal infrastructure to ensure AI's ethical development. The organization

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<sup>68</sup> See "Social Principles of Human-Centric AI" (Cabinet Office, Government of Japan, 2019), <https://www.cas.go.jp/jp/seisaku/jinkouchinou/pdf/humancentricai.pdf>; Stephen Chan, "What You Need to Know about China's AI Ethics Rules," <https://techbeacon.com/enterprise-it/what-you-need-know-about-chinas-ai-ethics-rules>; Cyman, Gromova, and Juchnevicius, *op.cit.*, 102-103; and Stefan Larsson, "On the Governance of Artificial Intelligence through Ethics Guidelines," *Asian Journal of Law and Society* 7, no. 3 (2020): 446-447.

<sup>69</sup> IAPP Research and Insights, "Global AI Legislation Tracker," [https://iapp.org/media/pdf/resource\\_center/global\\_ai\\_legislation\\_tracker.pdf](https://iapp.org/media/pdf/resource_center/global_ai_legislation_tracker.pdf).

emphasizes the need for AI to uphold human rights, transparency, and accountability.<sup>70</sup>

On September 5, 2023, in anticipation of a drafting session for the Committee on AI of the Council of Europe, civil society organizations urged member states to avoid references to "national security" that could potentially weaken the first global treaty on AI. The Council of Europe's mission is to champion democratic institutions, the rule of law, and fundamental rights. However, civil society groups have expressed concerns that proposed exemptions in the draft AI Treaty for national security could benefit authoritarian governments. They have suggested two potential courses of action: completely omitting any mention of national security or referring to national security solely as a valid reason for restricting the rights outlined in the AI Treaty. These restrictions must be clearly established by law and be necessary and proportionate in a democratic society.<sup>71</sup>

The EU, in its pursuit of a robust AI strategy, released the Commission's White Paper on AI in 2020, emphasizing a "European ecosystem of excellence and trust." The document proposes increased AI investment and the regulation of "high-risk" AI applications, ensuring they align with the EU's human rights framework. This approach underscores the EU's commitment to international cooperation, aiming for a shared ethical foundation in AI development. The EU seeks to work with like-minded countries, promoting values such as human dignity, privacy, and non-discrimination, aiming for a harmonized global AI landscape.<sup>72</sup>

Across the globe, there is a significant drive towards establishing shared ethical AI principles. The collaboration of various entities, including governments, international organizations, academia, and industry, highlights the universal importance of this matter. These collective efforts aim to develop common AI ethical guidelines, reflecting shared democratic liberal values such as non-discrimination, human dignity, and privacy. The goal is evident: to ensure AI's integration into global society is ethical, trustworthy, and respects individual rights and values. This convergence around ethical AI principles provides a foundation for international

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<sup>70</sup> UN News, "193 Countries Adopt First-Ever Global Agreement on the Ethics of Artificial Intelligence," <https://news.un.org/en/story/2021/11/1106612>.

<sup>71</sup> Center for AI and Digital Policy, "Council of Europe AI Treaty," <https://www.caidp.org/resources/coe-ai-treaty/>.

<sup>72</sup> Joshua P. Meltzer and Cameron F. Kerry, "Strengthening International Cooperation on Artificial Intelligence," <https://www.brookings.edu/articles/strengthening-international-cooperation-on-artificial-intelligence/>. Regarding the EU's equality and non-discrimination legal framework on AI, see Alba Soriano Arnanz, "Creating Non-Discriminatory Artificial Intelligence Systems: Balancing the Tensions between Code Granularity and the General Nature of Legal Rules" *IDP. Revista De Internet, Derecho Y Política* 38, (2023): 1-12.

cooperation, promoting a harmonized approach to AI development and deployment.<sup>73</sup>

In conclusion, the international landscape of AI regulation is in flux. However, the concerted efforts by global entities provide hope that a coordinated, ethical, and human-centric approach to AI governance is on the horizon. The need of the hour is collaboration, dialogue, and a shared vision that places humanity at the heart of AI's future.

## **2.6. Key Outcomes**

Throughout the investigation into AI's role in business operations, several key outcomes have emerged. First, AI's influence in the modern business world is undeniable. Its transition from theoretical concepts to practical applications has led to a paradigm shift in how businesses operate and make decisions. Second, the challenge of attributing responsibility for AI-driven outcomes remains unresolved. The inherent autonomy of AI systems, combined with their capacity to learn and evolve, introduces complexities that traditional legal and ethical frameworks are currently grappling with. Third, the legal perspective on AI is varied and evolving. Different nations are at different stages of formulating and implementing regulations concerning AI, highlighting the need for a cohesive and harmonized approach to address the challenges posed by AI on a global scale. Fourth, ethically, AI's potential to mirror societal biases has emerged as a significant concern. The paper underscores the importance of ensuring that AI's deployment in business does not inadvertently perpetuate or amplify existing societal inequalities. Fifth, the global dialogue on AI, as exemplified by events like the 'AI Insight Forum', underscores the collective recognition of AI's transformative potential and the challenges it presents.

## **3. CONCLUSION**

This paper highlights the central role of AI in transforming business operations and the associated challenges in allocating responsibility, legal regulation, and ethical use. Integrating AI into business has been disruptive and brings complexity, particularly in autonomous decision-making and the potential to reflect societal biases. The different legal perceptions in different countries and the ethical implications of AI highlight the urgent need for a harmonized global approach and frameworks. The future of AI in business requires a quest for innovation and responsibility. A concerted effort is needed to establish clear, ethical, and universal guidelines. It is essential to harness the potential of AI while mitigating its risks and ensuring its beneficial integration into the global business landscape.

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<sup>73</sup> Meltzer and Kerry, *loc.cit.*

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