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# The role of artificial intelligence and emerging technologies in UAE commercial transactions law (2023)

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## Abstract

In light of the Fourth Industrial Revolution, the intervention of artificial intelligence in commercial transactions has expanded significantly. It has not remained merely a subject or object of the contract, whether as a material or moral product. However, it has progressed to play a fundamental and effective role in concluding contracts as an electronic agent. This agent enables the automation of contracts, either wholly or partially, without human intervention. The UAE legislator has shown keen interest in regulating this usage, initially through the Electronic Transactions Law of 2006, then the updated law of 2021, and most recently through the Trade through Modern Technology Law of 2023. This framework considers artificial intelligence an information program that represents the original principal and bears the consequences of the transaction it engages in, despite the absence of legal personality for the electronic agent. The integration of artificial intelligence and modern technologies has profoundly transformed the landscape of commercial law. AI technologies, including natural language processing and machine learning algorithms, are increasingly employed in contract formation, risk assessment, and dispute resolution. These tools enhance efficiency, reduce human error, and streamline transactional processes, benefiting both businesses and consumers. Furthermore, the rise of modern tools such as digital currencies, smart contracts, and blockchain has revolutionized commercial transactions by offering unprecedented levels of transparency, security, and automation. Blockchain ensures immutable and verifiable records, while smart contracts self-execute upon fulfillment of predetermined conditions, reducing reliance on intermediaries and reinforcing transactional integrity. This paper also explores the legal and regulatory responses to these developments. Jurisdictions globally are facing the need to revise existing laws or draft new ones to address the challenges posed by artificial intelligence and emerging commercial technologies. The evolving nature of technology calls for flexible and adaptive legal frameworks to ensure that commercial law remains relevant and effective.

**Keywords:** artificial intelligence, automated contract, electronic intermediary, regular agent, trade with modern technology



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## 1. Introduction

Commercial transactions have seen several developments due to their close association with commercial activity, which is characterized by rapid movement in both time and space. Transformations in transportation, media, and communication have had a significant impact on the emergence of multiple forms of contracts and transactions (Berman & Kaufman, 1978). Over time, commerce transitioned from barter and goods exchange to cash-based transactions; and later, from traditional paper-based contracting to electronic dealings following the spread of e-commerce. E-commerce now exists in various forms: between businesses (B2B), between businesses and consumers (B2C), between businesses and governments (B2G), and between governments and consumers (G2C). The current trend, however, reflects the growing involvement of artificial intelligence (AI) in transactions and the provision of both government and private sector services. This has also paralleled the shift from traditional government to e-government and, more recently, to smart government systems (Jamal Qasim Hassan & Mahmoud Abdel Salam, 2021).

In recent years, the use of artificial intelligence in business transactions has expanded significantly through what is known as the electronic or intelligent agent. The first such agent, *Eliza*, was created in 1966 by German researcher Joseph Weizenbaum to conduct basic conversations and answer user questions. It later evolved to provide product information for sales purposes, with *Alice* being one of its advanced versions. As internet technologies evolved, these agent programs were no longer limited to research institutions like MIT and IBM. They began to serve more complex functions beyond simple data retrieval, eventually being adopted globally—both in military and civilian sectors—as internet accessibility became widespread (Sameh Zeinhom Abdel Gawad, 2008).

With AI's capacity to learn and adapt, some transactions now depend on computer programs that execute user commands or operate independently without human oversight. These systems can make decisions related to contracts after analyzing and processing data—sometimes even without the user's direct awareness (Hermans, 1997). This evolution has led to the perception that AI-based contracts may represent a new frontier for humanity. Some researchers even argue that once these boundaries are crossed, AI could catalyze a new era of advanced human civilization (Aboelazm & Ramadan, 2023). Still, a core principle remains: artificial intelligence cannot entirely replace human intelligence.

The UAE's orientation toward technological leadership is evident in its efforts to adopt artificial intelligence strategies to facilitate life and enhance community services. This progressive stance has enabled the UAE to stay aligned with global advancements, especially within its commercial sector. Other Arab countries, such as Saudi Arabia, have also witnessed rapid electronic development due to increasing volumes of sales and transactions. This has been reflected in a series of important legislative efforts, including:

- *Federal Law No. 1 of 2006*, which laid the foundation for electronic transactions regulation.
- *Federal Decree-Law No. 46 of 2021*, concerning electronic transactions and trust services.
- *Federal Decree-Law No. 50 of 2022*, which amended provisions regulating commercial transactions, recognizing platforms, websites, smart applications, data, and artificial intelligence as professional commercial businesses.
- *Federal Decree-Law No. 14 of 2023*, which introduced rules for trade using modern technology. These provisions define modern tech trade as including the sale and purchase of goods, services, and associated data in technical environments conducted through websites, platforms, or smart applications. It also includes non-digital goods/services obtained virtually or physically using digital means. AI and smart applications are explicitly recognized as modern technological tools.

Artificial intelligence can participate in commercial transactions in two primary ways: either as the subject or object of the transaction, or as an intervening party (Jacquemin & Hubin, 2017). AI simulates

human intelligence using machines and software to perform complex tasks. This study focuses on the second role, AI as an intervening party in contractual relations.

**Relevance of the Study:** The UAE's adoption of the *Artificial Intelligence Strategy 2031*, which promotes the ethical and safe development of AI, underscores the strategic significance of this research. Practically, the topic is important due to AI's increasing role in shaping contracts between merchants and consumers. Legally, the subject is timely, as new regulations have begun to define AI's role as a "transaction partner" or automated intermediary, particularly in *Federal Decree-Law No. 14 of 2023*.

**Research Problem:** The expansion of e-commerce and AI usage raises several legal questions:

- How does UAE law regulate AI's role in transactions as an active party before or during contract formation?
- Should these transactions be subject to general contract rules or electronic transaction provisions?
- What is the legal status of contracts concluded by an electronic agent in light of Federal Decree-Law No. 14 of 2023?
- Is the AI system itself legally responsible, or does accountability lie with its user or operator?

This study aims to examine how UAE legislation addresses AI's participation in commercial transactions, particularly in negotiation and contract execution, while assessing whether current legal frameworks uphold the principle of technological neutrality. This principle ensures that electronic transactions are treated on par with traditional ones. The analysis is especially relevant after the replacement of the 2006 Electronic Transactions Law by the 2021 Electronic Transactions and Trust Services Law, and the introduction of new provisions under the 2023 trade law.

## 2. Literature Review

This section presents a review of past information about the impact of artificial intelligence and the impact of commercial technology on the Specific Transactions Law of 2023. The intervention of artificial intelligence in commercial transactions, and developments in the Commercial Law through modern technology for the year 2023, will be by studying its role in the pre-contractual stage and in the contractual stage, after identifying the legislative provisions regulating contracting electronically using an electronic agent.

### 2.1 Legal Regulation of Artificial Intelligence as a Party to a Commercial Transaction and Electronic Agent

The development of information technology has been a key factor in the emergence of electronic contracts. Alongside this, automated systems have proliferated due to the openness and widespread use of the internet, as well as the continuous advancement of digital technologies and their broad applications in various transactions, particularly in e-commerce, which is now conducted almost entirely online. Among the most significant innovations in this space is the rise of the electronic or smart mediator. Contracts have now transitioned into "smart" contracts, enabled by artificial intelligence and automation (Petit, N., 2017). The primary objective of these smart systems is to assist individuals in completing tasks while minimizing financial costs and time consumption. Regarding the regulation of electronic transactions, UAE law has been at the forefront. Since the early 2000s, the UAE has addressed electronic intermediaries through progressive legal reforms, beginning with Federal Law No. 1 of 2006 and extending to amendments enacted in 2022. More recently, business dealings involving artificial intelligence have been governed by the newly introduced *Federal Decree-Law No. 14 of 2023* on trade through modern technological means.

To understand AI's legal role in commercial contracts, it is essential first to define its position as an electronic intermediary or agent and then to explore the features that distinguish it (Andrade, F., Novais, P., Machado, J., & Neves, J., 2007).

### 2.1.1 What Is an Electronic Agent? (Artificial Intelligence in Contracting)

Artificial intelligence is fundamentally built on a robot's or digital computer's ability to perform tasks typically associated with intelligent entities and to adapt to changing environments. In commercial contracting, AI systems may function as a contracting party by executing contractual tasks or decisions. To properly define an *electronic agent*, we must examine the term both jurisprudentially and legislatively. The jurisprudential foundation dates back to the concept of the *executive director*, introduced by legal scholars to describe the role of autonomous systems in transactions. These definitions often focus on the system's purpose and the nature of tasks it performs (Franklin & Graesser, 1996). For example, intelligent software, also called client programs; may participate in contract dialogues, facilitate negotiations, and coordinate information. Such agents can be described as independent computer programs that operate without human or external agent intervention, maintaining control over their internal state and decision-making processes. Their behavior and problem-solving methods are influenced by the surrounding environment and by the program's pre-defined objectives (Weitzenboeck, 2001). Another common definition frames the electronic agent as any *electronic system, program, or means* capable of automatically carrying out or reacting to an action in whole or in part, without reference to a real person. These systems can process data messages and react without needing human input every time they are activated. Essentially, they serve as intermediaries in electronic transactions, performing the role traditionally held by human agents, whether legally qualified or not.

Some legal scholars argue that electronic agents may be preferable to traditional agents in certain tasks, due to their efficiency, speed, and lack of human error. However, their use in legal transactions is not without challenges, including ethical concerns, reliability, and the question of legal accountability. Despite the lack of a precise statutory definition of artificial intelligence, legislators across jurisdictions have shown increasing interest in regulating contracts involving automated systems and electronic agents (Aboelazm, K. S., 2023). Influences from *Canadian and American law*, the *UNCITRAL Model Law on Electronic Commerce*, and the *United Nations Convention on the Use of Electronic Communications in International Contracts* have also helped shape the UAE's legal approach.

A formal legal definition of "electronic intermediary" first appeared in *Article 2 of Dubai Emirate Law No. 02 of 2002*, concerning electronic transactions and commerce. According to Price and Al Tamimi (2005), the term referred to a computer program or system capable of autonomously acting or responding, wholly or partially, without the supervision of a natural person at the moment the action takes place. Later, *Federal Law No. 1 of 2006* refined this definition, introducing the term "automated electronic intermediary," and described it as an information technology program or system that operates automatically and independently without human involvement. This law deliberately added the adjective "automated," signaling the legislator's intention to emphasize autonomy.

Following this, *Federal Decree-Law No. 46 of 2021* (which repealed the 2006 law) continued using similar language. It defines an electronic information system as one that operates automatically and independently, in whole or in part, without any human intervention at the time of operation or response (Qouteschat, O. H., & Alawamleh, K. J., 2017). This legal continuity reflects the UAE's evolving yet consistent approach to regulating AI systems in commerce.

### 2.1.2 Characteristics of the Electronic Medium

To better understand the role of artificial intelligence as an electronic agent or mediator in contracting, it is useful to examine its distinguishing characteristics. Swarna, T. et al. (2002) categorized these traits into two areas: the degree of technological interference in a transaction, and the subjective attributes of AI systems. The most common usage of an electronic agent is in e-commerce. These agents do more than just search for goods and services—they can initiate, negotiate, and execute contracts. AI has evolved from merely assisting with transactions to becoming the medium through which digital commerce is conducted.



According to Federal Decree-Law No. 14 of 2023, trade using modern technological means includes “any technical means used for trade,” including electronic, digital, biometric, AI systems, blockchain technologies, and other smart tools. It also recognizes platforms, websites, and applications as mediums through which such activities take place (Wimmers, J., 2021). These means may be employed in commercial activities involving real or virtual goods or services, through technical mediation, or via social media platforms, digital commerce websites, and smart applications. In practice, AI systems today include tools such as digital assistants, speech recognition software, translation tools, and recommendation engines, like Apple’s Siri. More advanced AI systems function autonomously in settings like self-driving vehicles, industrial IoT systems, and automated logistics (Sardar et al., 2019). These systems support human decision-making or completely replace human intervention in some cases.

The defining trait of these smart agents is independence; they execute legal or physical actions with a degree of autonomy, minimizing or eliminating human involvement. A smart agent operates based on inputs, follows internal logic, and produces predefined outputs. It can be regarded as a “virtual person”, not because it holds legal status, but because it behaves like one in transactions.

Advantages of smart agents include freedom of operation, adaptability, and the ability to communicate with other users or agents. They are designed to react to events automatically and independently, making them vital components in modern, dynamic digital marketplaces (Aboelazm, K. S., 2024).

### 2.1.3 Distinguishing Between Intelligent Agents and Ordinary Agents

To better understand electronic agents, it is necessary to distinguish them from traditional or regular agents. While both facilitate transactions between parties, their legal standing, formation, and operational modes differ significantly (Padgham & Winikoff, 2005). Under the UAE Civil Transactions Law, a regular agency is a contract in which a principal appoints another party to act on their behalf in a known, permissible transaction. This agreement requires mutual consent between the two parties, often documented in writing.

In contrast, an electronic agency is not formed through negotiation or offer and acceptance. Instead, it is created unilaterally by programming an electronic system to act within specified limits in commercial transactions. The system’s functions, whether preparing, negotiating, or concluding contracts, are dictated by data input and predefined parameters (Aljasmī, A. E., 2015). The conditions for a valid traditional agency are well-defined. The principal must have the legal right to delegate, the agent must be qualified, and the subject matter must be specific and capable of representation. However, in an electronic agency, these requirements do not apply. The system is governed by electronic transactions law, not civil agency law (Alustath, H., 2016).

Attempts have been made in jurisprudence to recognize electronic agents as possessing legal personality, capable of expressing contractual will and creating legal consequences for the principal. Yet legislators have stopped short of granting such status. Most Arab jurisdictions, including Bahrain, Kuwait, and Jordan, treat electronic agents as tools, not legal persons. Differences between regular and electronic agents also arise in how they can exceed the scope of their authority. A regular agent can act beyond instructions if doing so benefits the principal. In contrast, an electronic agent is strictly bound by its programming. However, with advanced AI, a smart agent can make decisions beyond its original boundaries, posing new challenges for accountability (Poole & Mackworth, 2010).

In cases where a product selected by an AI agent does not match the principal’s preferences, a regular agent could cancel or revise the contract. A smart agent, however, would execute the order automatically. Some scholars even envision a “web manager”, a highly intelligent program that conducts entire transactions without any user control (Lynn Kaarst-Brown & Robey, 1999). Debates about whether AI agents should have legal personality have yielded three main views:

- **Legal Fiction Theory:** Supports granting AI a virtual legal identity for accountability purposes.
- **Communication Tool Theory:** Views the AI agent as nothing more than a medium.
- **Financial Liability Theory:** Suggests creating insurance-backed financial autonomy for AI agents, enabling merchants to allocate assets and shield themselves from liability.

All of this is done without monitoring or control from the user as long as his work is independent, which calls into question the extent to which the electronic agent enjoys the legal capacity that enables him to conclude transactions. Opinions were divided into two sections: granting the electronic agent a virtual legal existence and personality and adhering to considering it a mere communication tool that does not rise to the level of being considered a legal person, as follows:

- Natural personality in law is the acquisition of rights and the bearing of obligations, according to your personal belief or taking it into consideration. First, the boat of artificial intelligence is excluded by the person because the natural human being alone is intelligent and has this description, and the intelligent agent does not have a real tangible existence but rather a virtual one due to its scope and field and the absence of feelings, awareness, and free will as is possible. Does this make him depart from the principle of the person in particular, which is a group of funds or a group of funds or individuals and an organization of funds and thus a specific goal or leavers involved in the project of controlling its existence, and is distinguished by its independence from the persons who compose it, and the jurisprudential opinions conflicted on the basis of those groups. The legal existence is either the theory of tricker assumption or imagination or the theory of truth. It appears that the theory of imagination is compatible with the electronic agent, but it requires that you be affected to grant it legal personality. Who has not done so now?
- The second rejects the commercial law of the smart agent, but rather it is merely a tool for linking and mediating to conclude electronic transactions and in everything necessary, three objectives must be applied to the legal framework of the electronic agent, represented in verifying the validity of the contract, then the responsibility of its users with protection and dealing with it, all of this to enhance electronic commerce and increase legality.
- Another trend emerged as a result of research into the responsibility of artificial intelligence, which relies on adherence to the theory of financial liability, by recognizing the electronic phone agent's financial liability with the adoption of the alliance system by subscribing to insurance with a specific registration and choosing to apply the allocation liability. The dealing merchant allocates an independent and distinct financial liability that he grants to the electronic mail agent to carry out a specific activity, which cannot be implemented by the merchant's creditors. It begins with the transfer of some of the merchant's assets, which are disposed of by the agent, and insurance is added to it.
- However, the CEO remains just an electronic program, machine, or device that performs the tasks assigned to him in an automated manner without any modern human influence.

Despite these views, the UAE legislator currently treats the electronic agent as a machine, requiring digital merchants to provide insurance coverage for AI-assisted transactions to protect consumers and ensure responsible commerce.

## 2.2 Role of Artificial Intelligence in Transactions

The closing decades of the twentieth century witnessed significant technological advancements, including the emergence of programs capable of issuing model offers through data exchange systems, and registering and recognizing acceptance from contracting parties (Draganov, M., Panicharova, M., &

Madzhirova, N., 2018). The surge in available data stemming from increased e-commerce activity and consumer behavioral tracking led to the development of electronic mediators, which now play a pivotal role in facilitating transactions on behalf of the client or principal.

### **2.2.1 Role of Artificial Intelligence in the Pre-Contractual Phase**

Electronic intermediaries serve various functions, including information retrieval, monitoring, assistance, and enabling e-commerce. These intermediaries typically exist in two forms: those that physically execute tasks on behalf of users and those that perform digital functions such as data analysis and recommendation. In the pre-contractual stage, electronic intermediaries help identify relevant information, promote products and services, and influence the contracting parties' decisions (Giaglis, G. M., Klein, S., & O'Keefe, R. M., 2002). Smart programs search the internet to collect and filter data aligned with user preferences. They suggest suitable products or services and offer merchants insights into customer needs. Based on this analysis, merchants can adapt products, refine marketing strategies, and attract new customers (Segaran, T., 2007). These agents may also monitor internet trends and assist users through learning-based adaptations; filtering emails, responding to inquiries, and improving over time through user feedback.

Advertising, as shaped by AI, focuses on collecting behavioral data from social networks and digital platforms. Tools such as cookies, big data analytics, and chatbots enable personalized marketing. In finance, AI facilitates transactions in insurance and loans with minimal human intervention (Yas, N., Al Qaruty, R., Hadi, S. A., & AlAdeedi, A., 2023; Magnuson, W., 2020). For such practices to remain lawful, they must conform to UAE legal standards for electronic advertising. Any electronic communication encouraging the sale of goods or services must avoid fraudulent or misleading content. Misleading advertisements—such as those omitting essential facts or promoting fictional discounts—are prohibited under UAE law (Bakos, Y., Marotta-Wurgler, F., & Trossen, D. R., 2014). Only campaigns that meet the standards set by competent authorities for digital marketing are permitted.

Further, any promotion involving misleading digital assets (e.g., cryptocurrencies) or unlicensed electronic payment units is criminalized, especially when conducted via digital platforms (Khamvan, A., 2016). UAE legislation has expanded these regulations to include the misuse of AI, such as creating robots that disseminate fraudulent information. This framework protects consumers, particularly vulnerable ones and ensures transparency and accountability, even when the advertiser is a non-human agent.

### **2.2.2 Effects of Artificial Intelligence Intervention on the Contractual Stage**

As e-commerce expanded, electronic intermediaries have become indispensable in enabling and executing contracts. Upon conclusion of negotiations, the intermediary, on behalf of the merchant or buyer, may autonomously finalize the transaction. Whether procuring raw materials or purchasing a product, AI can act as a digital representative for either party.

In blockchain-powered environments, AI facilitates instantaneous transfer of ownership and payments, often without the need for follow-up. Once the digital agent confirms the transaction, blockchain ensures security and traceability (Ebers, M., Poncibò, C., & Zou, M., 2022). The buyer, through AI assistance, must still fulfill legal obligations, reviewing goods or services and contract terms diligently. Purchases are governed by standards ensuring informed consent, and rights such as product return must be exercised responsibly. Smart contracts, automatically executed when predefined terms are met, represent the future of digital contracting (Poncibò, C., 2023). When automated inventory systems are in place, sellers can respond to orders autonomously. In some cases, buyers receive approvals without human confirmation (Yas, N., Elyat, M. N. I., Saeed, M., Shwede, F., & Lootah, S., 2024).

Emerging models even predict AI-initiated communications between devices, as seen with Internet of Things (IoT) applications. For example, a smart refrigerator ordering groceries autonomously demonstrates the new paradigm of transactional automation. Such transactions, which operate with

minimal human involvement, are classified under UAE law as automated electronic transactions. These are generated by systems that process, store, and exchange electronic information (Aljneibi, K., 2014). The consumer interacts through digital means, while the intermediary acts as a facilitator, ensuring all conditions of the contract are met.

The Trade Law through Modern Technology of 2023 protects digital consumers by mandating transparency in digital contracts, disclosing product details, merchant identity, payment methods, and logistics information. The law also introduces insurance obligations for digital merchants, covering potential risks such as fraud or data loss. Approval of such insurance terms may be required by the Ministry of Economy or the Council of Ministers.

### **2.2.3 The Actions of the Electronic Agent Are Deemed to Be Issued by and on Behalf of the Originator**

Under UAE law, the actions of an electronic agent are attributed to its human or organizational originator. Since the Electronic Transactions Law of 2006, and reaffirmed by Federal Decree-Law No. 46 of 2021; such actions are treated as valid and binding, with equal legal weight as traditional paper-based transactions. The law maintains that a contract does not lose its enforceability simply because it was executed electronically. It affirms that when an electronic agent acts on behalf of a party, the legal consequences extend to that party. It is regarding electronic transactions Trust.

- Which is considered one of its objectives to enhance trust, encourage and facilitate electronic transactions of all kinds, and protect the dealers, so it explicitly states that the contract does not lose its validity or evidentiary value or enforceability merely because it was made by one or more electronic documents.
- . The legislator considers that the actions of the electronic agent are issued by the originator and on his behalf.
- The aforementioned indicates that the electronic transaction is specifically linked to the originator as the source of the electronic document because the automated electronic program is set up to function automatically by the originator or on his behalf, or as the addressee because he confirmed receipt by sending a simple message via electronic, automated, or any other method. Even if there is no direct or personal involvement from any real person during the contract-making process in these systems, the agreement is nevertheless enforceable, valid, and has legal consequences. The law also allowed a person to enter into a contract with another person through an automated electronic information system if the other party is aware, or should be aware, that the contract will be automatically concluded or executed by the system. As per the United Nations' stance on the use of electronic messages in international contracts, contracts between smart information systems (also known as electronic intermediaries) can be made without the need for human intervention. Furthermore, these contracts are legitimate transactions that have electronic consequences.
- Thus, electronic transactions are equal to regular transactions, and the use of a smart application cannot be considered in any way a reason for the invalidity of the contract or the loss of its legal value. Artificial intelligence systems benefit from the equality between regular and electronic contracting systems, so contractors cannot evade their obligations because the contract is based on an independent smart program or mechanism.

Electronic transactions remain enforceable even when no human directly participates in the contract formation. The law allows contracts between automated systems, provided both parties understand the automated nature of the transaction. This aligns with the United Nations' position on electronic contracting. Furthermore, Federal Decree-Law No. 50 of 2021 emphasizes that commercial transactions, whether traditional or electronic, are subject to the same legal standards. Verification of parties through



digital identities and digital signatures affirms the legitimacy of such contracts.

Finally, the UAE's 2023 legislation stipulates that those who engage in technology-based trade are accountable for their actions. Violations of Decree-Law No. 14 result in legal liabilities, reinforcing trust in AI-driven commerce and ensuring technological neutrality in commercial law.

### 3. Methodology

This study employs a dual-method approach combining descriptive and analytical methods. The descriptive component identifies and compares the role of the electronic agent—an embodiment of artificial intelligence (AI) to that of the traditional agent in commercial transactions. The analytical method is used to evaluate how the UAE legislator has addressed the legal implications of AI intervention in transactions. This includes a close examination of legal texts, regulatory frameworks, and amendments to commercial laws, particularly the Federal Decree-Law No. 14 of 2023 and related statutes.

### 4. Discussion

Artificial intelligence and modern technologies have profoundly reshaped commercial transactions. The UAE, in particular, has emerged as a pioneer in legally recognizing and integrating these innovations into its commercial framework. From the early 2000s, the UAE began regulating electronic transactions and intermediaries, culminating in the comprehensive 2023 law on trade through modern technology. This legislative evolution marks a shift in perception: AI is no longer merely a facilitative tool but a functional participant in commercial dealings.

Under UAE law, an electronic agent refers to an autonomous computer program capable of performing transactional functions independently of human oversight (Qouteschat et al., 2017). The legal recognition of electronic agents has enabled contracts executed by AI systems to be binding and enforceable. These agents replicate many functions traditionally assigned to human intermediaries: negotiating terms, executing contracts, and managing transactions based on environmental and system cues.

The legal framework established by the UAE beginning with Dubai Emirate Law No. 02 of 2002 and reinforced by subsequent legislation treats electronic agents as autonomous systems with defined roles in commercial activities. This clarity has facilitated the use of AI in business and promoted trust in electronic transactions.

The AI-driven transformation of commercial activity extends to the nature of agency relationships. According to the UAE Civil Transactions Law, a traditional agency is a bilateral agreement between a principal and a human agent to act on the former's behalf in a legally permissible transaction (Aljasmī, 2015). In contrast, an electronic agent is not a party to a bilateral contract but rather a product of a unilateral act an algorithm or program assigned defined powers based on input data.

Despite similarities in function, traditional and electronic agents differ significantly in their operational scope and legal treatment. Traditional agents may exceed their authority for the benefit of their principals. However, electronic agents are bound by their programmed parameters. As AI becomes increasingly sophisticated, these agents may act beyond their initial instructions, raising concerns about accountability and legal capacity (Poole et al., 2010).

The UAE's legislation recognizes this challenge and addresses it through proactive regulation. AI is acknowledged as a transformative force in commerce but is also subjected to checks, including insurance mandates and consumer protection measures, especially under the Trade Law through Modern Technology of 2023.

### 5. Recommendations

To safeguard contracting parties, especially vulnerable ones, from potential risks posed by AI-based transactions, further legislative action is essential. This should include:

- Establishing a standardized legal framework across Arab states to address disparities that hinder regional economic development and investor confidence.
- Promoting Emirati legal standards as a model for regional and international adoption, given their comprehensiveness and forward-thinking nature.
- Encouraging laws that mandate insurance coverage for risks arising from AI-mediated contracts, as exemplified by the UAE's 2023 law.
- Governing the use of AI comprehensively from pre-contractual interactions to post-contract execution rather than limiting regulation to the moment of contract formation.

While the UAE has made significant strides, emerging technologies demand dynamic and anticipatory legal frameworks that uphold innovation while ensuring fairness, transparency, and accountability.

## 6. Conclusion

As AI and intelligent systems evolve, legal systems must respond not by merely applying classical doctrines of legal personality but by developing innovative, context-specific frameworks. The UAE's legal response acknowledges that AI, especially in the form of electronic agents, plays a substantive role in both pre-contractual and contractual phases.

The legislator treats these agents as autonomous programs operating on behalf of originators, establishing legal consequences for their actions. While they are not granted legal personhood, they are regulated through laws that provide them with operational legitimacy. This approach allows for their integration into digital commerce, ensuring enforceability and consumer protection.

The distinction between traditional and electronic agency is foundational. While traditional agents are human or legal persons bound by mutual agreement, electronic agents function through algorithmic processes, without the need for human consent at each action point. Their impact spans negotiating, concluding, and executing contracts.

AI's integration into commerce introduces novel legal complexities from liability and consumer protection to contract validity and enforcement. Therefore, AI-mediated contracts are now governed not only by general commercial and civil rules but also by specialized regulations like the UAE's 2021 Trust Services Law and the 2023 Trade through Modern Technology Law.

Ultimately, AI's presence in commercial law necessitates constant legal adaptation to protect all parties involved and ensure that technology remains a tool for human benefit rather than disruption.

## References

- Aboelazm, K. S. (2023). The success of the E-voting to Enhance the Political Engagement: A Comparative Study. *Journal of Law and Sustainable Development*, 11(11), e1732-e1732.
- Aboelazm, K. S. (2024). Using E-Tenders in the United Arab Emirates to Enhance Transparency and Integrity. *Kurdish Studies*, 12(1), 91-102.
- Aboelazm, K. S., & Ramadan, S. A. (2023). Transformation to E-Public Procurement in the United Arab Emirates in the Light of Uncitral Model Law. *Journal of Law and Sustainable Development*, 11(8), e1499-e1499.
- Aboelazm, K. S., Obeidat, M. A., Tawakol, F., Alfil, N. Z., & Ul Haq, F. H. I. (2025). Ameliorating Public Procurement Performance: Green Public Procurement Policies Within a Legislative Framework. *Corporate Law and Governance Review*, 7(2), 21.
- Aboelazm, K. S. (2024). The role of judicial review in the settlement of state contracts disputes. *Corporate Law & Governance Review*, 6(3), 122-134.
- Aboelazm, K. S. (2024). Supreme Constitutional Court review of the legislative omission in Egypt in light of international experiences. *Heliyon*, 10(17).
- Aboelazm, K. S., Tawakol, F., Ibrahim, E., & Ramadan, S. A. (2025). The Legal Framework for BOT Contracts in Egypt and the United Arab Emirates. *Journal of Lifestyle and SDGs Review*, 5(2), e03286-e03286.
- Aljasmi, A. E. (2015). Choice of law in respect of agency relationships in the European Union and the United Arab Emirates (Doctoral dissertation, University of Essex).
- Aljneibi, K. (2014). The scope of electronic transactions and electronic evidence in the courts of the United Arab Emirates. *Digital Evidence & Elec. Signature L. Rev.*, 11, 37.
- AlLouzi, A. S., & Alomari, K. M. (2023). Adequate legal rules in settling metaverse disputes: Hybrid legal framework for metaverse dispute resolution (HLFMDR). *International Journal of Data & Network Science*, 7(4).
- Allouzi, A. S. (2024). Mediation and conciliation centers and their impact on resolving legal disputes in UAE "Under Federal Law No. 17 of 2016 and its amendment No. 5 of 2021". *Journal of Infrastructure, Policy and Development*, 8(10), 6703.
- AlKhamaiseh, M. A., Allouzi, A., & Karima, K. R. I. M. (2025). The adequacy of the UAE Commercial Law in 2023 in regulating artificial intelligence as a subject of the contract. *Research Journal in Advanced Humanities*, 6(1), 1-12
- Alustath, H. (2016). Choice of Law in respect of contracts in the United Arab Emirates and the European Union; and related aspects of Private International Law in relation to the Dubai International Financial Centre (Doctoral dissertation, University of Essex).
- Andrade, F., Novais, P., Machado, J., & Neves, J. (2007). Contracting agents: legal personality and representation. *Artificial Intelligence and Law*, 15, 357-373.
- Albayati, Y. K., Allouzi, A. S., Abdalaziz, M. M. O., Al-Ali, M., & Yas, H. (2025). Development of a sustainable society and economy based on knowledge in the United Arab Emirates. *International Journal of Innovative Research and Scientific Studies*, 8(2), 854.
- Allouzi, A. S., & Yas, N. (2024). Procedural aspects of civil liability for nuclear damages in UAE law. *Journal of Infrastructure, Policy and Development*, 8(9), 6705.
- Bakos, Y., Marotta-Wurgler, F., & Trossen, D. R. (2014). Does anyone read the fine print? Consumer attention to standard-form contracts. *The Journal of Legal Studies*, 43(1), 1-35.
- Bellia Jr, A. J. (2001). Contracting with electronic agents. *Emory LJ*, 50, 1047.
- Berman, H. J., & Kaufman, C. (1978). *Law of international commercial transactions (Lex Mercatoria)*. *Harv. Int'l. LJ*, 19, 221.
- Blythe, S. E. (2007). The Dubai Electronic Transactions Statute: A Prototype for E-Commerce Law in the United Arab Emirates and the GCC Countries. *Journal of Economic and Administrative*

- Sciences, 23(1), 1-23.
- Dafri, W., Yas, N., Salem, O., Khalifa, A. A., & AlLouzi, A. S. (2025). Policies and laws of the digital customer and the digital government service in the Emirates. *International Journal of Innovative Research and Scientific Studies*, 8(4), 1161-1172.
- Draganov, M., Panicharova, M., & Madzhirova, N. (2018, June). Marketing 5.0. transactions of artificial intelligence systems in the digital environment. In 2018 International Conference on High Technology for Sustainable Development (HiTech) (pp. 1-3). IEEE.
- Drummer, D., & Neumann, D. (2020). Is code law? Current legal and technical adoption issues and remedies for blockchain-enabled smart contracts. *Journal of information technology*, 35(4), 337-360.
- Ebers, M., Poncibò, C., & Zou, M. (Eds.). (2022). *Contracting and contract law in the age of artificial intelligence*. Bloomsbury Publishing.
- Elyat, M. N., Al Bayati, N. Y., Al Baloushi, N. A., Sarhan, M. I., Marks, A. A., Khudhair, H. Y., & Allouzi, A. S. (2024). IMPACT OF INTELLECTUAL PROPERTY RIGHTS AND TECHNOLOGICAL FACTORS ON INFORMATION SECURITY. *Journal of Infrastructure, Policy and Development*, 8(8), 6303.
- Franklin, S., & Graesser, A. (1996, August). Is it an Agent, or just a Program? A Taxonomy for Autonomous Agents. In *International workshop on agent theories, architectures, and languages* (pp. 21-35). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Giaglis, G. M., Klein, S., & O'Keefe, R. M. (2002). The role of intermediaries in electronic marketplaces: developing a contingency model. *Information systems journal*, 12(3), 231-246.
- Guo, X., & Lu, J. (2007). Intelligent e-government services with personalized recommendation techniques. *International journal of intelligent systems*, 22(5), 401-417.
- Hermans, B. (1997). *Intelligent software agents on the internet: Chapters 6-7*. First Monday.
- Ibrahim, E., Sharif, H., & Aboelazm, K. S. (2025). Legal Confrontation of the Cyber Blackmail: a Comparative Study. *Journal of Lifestyle and SDGs Review*, 5(2), e04039-e04039.
- Jacquemin, H., & Hubin, J. B. (2017). Aspects contractuels et de responsabilité civile en matière d'intelligence artificielle. In *Intelligence artificielle et droit* (pp. 73-141). Larcier.
- Jamal Qasim Hassan, Mahmoud Abdel Salam. (2021). "E-commerce", a series of introductory brochures, No. 20, directed at the young age group in the Arab world, Economic Department, Arab Monetary Fund,, Abu Dhabi, United Arab Emirates, pp. 9-12.
- Khamvan, A. (2016). Legal issues related to online advertisement regulation.
- Lynn Kaarst-Brown, M., & Robey, D. (1999). More on myth, magic and metaphor: Cultural insights into the management of information technology in organizations. *Information Technology & People*, 12(2), 192-218.
- Magnuson, W. (2020). Artificial financial intelligence. *Harv. Bus. L. Rev.*, 10, 337.
- Mallat, C. (2000). *Commerical Law in the Middle East: Between Classical Transactions and Modern Business*. *Am. J. Comp. L.*, 48, 81.
- Padgham, L., & Winikoff, M. (2005). *Developing intelligent agent systems: A practical guide*. John Wiley & Sons.
- Petit, N. (2017). Law and regulation of artificial intelligence and robots-conceptual framework and normative implications. Available at SSRN 2931339.
- Poncibò, C. (2023). Artificial Intelligence as a Communication Tool in Contract Law. *European Review of Private Law*, 31(2/3).
- Poole, D. L., & Mackworth, A. K. (2010). *Artificial Intelligence: foundations of computational agents*. Cambridge University Press.
- Price, R., & Al Tamimi, E. (2005). *United Arab Emirates Court Of Cassation Judgements: 1998-2003* (Vol. 27). Brill.

- Qouteschat, O. H., & Alawamleh, K. J. (2017). The enforceability of electronic arbitration agreements before the DIFC Courts and Dubai Courts. *Digital Evidence & Elec. Signature L. Rev.*, 14, 47.
- Sameh Zeinhom Abdel Gawad. (2008). "Smart Agent Programs for Smart Search and Marketing on the Internet", Nas Printing Company, First Edition, pp. 119–120.
- Sanz-Bas, D., Del Rosal, C., Alonso, S. L. N., & Fernández, M. Á. E. (2021). Cryptocurrencies and fraudulent transactions: Risks, practices, and legislation for their prevention in Europe and Spain. *Laws* 10: 57.
- Sardar, P., Abbott, J. D., Kundu, A., Aronow, H. D., Granada, J. F., & Giri, J. (2019). Impact of artificial intelligence on interventional cardiology: from decision-making aid to advanced interventional procedure assistance. *Cardiovascular interventions*, 12(14), 1293-1303.
- Segaran, T. (2007). *Programming collective intelligence: building smart web 2.0 applications*. " O'Reilly Media, Inc."
- Shwede, F., Yas, N., & Abdijabar, Z. (2024). The impact of intellectual property rights and the level of information sensitivity on information security in the United Arab Emirates. *Journal of Infrastructure, Policy and Development*, 8(8), 6303.
- Swarna, T., Kalyane, V. L., Prakasan, E. R., & Kumar, V. (2002). Characteristics of the electronic journal: library philosophy and practice. *SRELS Journal of Information Management*, 39(3), 271-282.
- Weitzenboeck, E. M. (2001). Electronic agents and the formation of contracts. *International Journal of Law and Information Technology*, 9(3), 204-234.
- Wettig, S., & Zehender, E. (2004). A legal analysis of human and electronic agents. *Artificial Intelligence and Law*, 12, 111-135.
- Wimmers, J. (2021). The Out-of-court dispute settlement mechanism in the Digital Services Act: A disservice to its own goals. *J. Intell. Prop. Info. Tech. & Elec. Com. L.*, 12, 381.
- Wooldridge, M. (1999). Intelligent agents. *Multiagent systems: A modern approach to distributed artificial intelligence*, 1, 27-73.
- Khudhair, H. Y., Jusoh, A., Mardani, A., Nor, K. M., & Streimikiene, D. (2019). Review of scoping studies on service quality, customer satisfaction and customer loyalty in the airline industry. *Contemporary Economics*, 375-386.
- Khudhair, H. Y., Jusoh, A., Mardani, A., & Nor, K. M. (2019). A conceptual model of customer satisfaction: Moderating effects of price sensitivity and quality seekers in the airline industry. *Contemporary Economics*, 13(3), 283.
- Saeed, M. D., & Khudhair, H. Y. (2024). MANAGING COMPLEXITY AND STAKEHOLDER DYNAMICS IN LARGE-SCALE INFRASTRUCTURE PROJECT, *International Journal on Technical and Physical Problems of Engineering*, 16(1), pp. 265–276.
- Yas, H., Mardani, A., & Alfarttoosi, A. (2020). The major issues facing staff in islamic banking industry and its impact on productivity. *Contemporary Economics*, 14(3), 392.
- Khudhair, H. Y., & Mardani, A. (2021). The Major Issues Facing Staff in Islamic Banking Industry. *International Journal of Economics and Management Systems*, 6.
- Yas, H., Mardani, A., Albayati, Y. K., Lootah, S. E., & Streimikiene, D. (2020). The positive role of the tourism industry for Dubai city in the United Arab Emirates. *Contemporary Economics*, 14(4), 601.
- Khudhair, H. Y., Jusoh, A., Nor, K. M., & Mardani, A. (2021). Price sensitivity as a moderating factor between the effects of airline service quality and passenger satisfaction on passenger loyalty in the airline industry. *International Journal of Business Continuity and Risk Management*, 11(2-3), 114-125.
- Yas, H., Jusoh, A., Streimikiene, D., Mardani, A., Nor, K. M., Alatawi, A., & Umarlebbe, J. H. (2021). The negative role of social media during the COVID-19 outbreak. *International Journal of Sustainable Development and Planning*, 16(2), 219-228.



- Yas, H., Jusoh, A., Nor, K.M., Jovovic, N., Delibasic, M. (2022). IMPACT OF AIRLINE SERVICE QUALITY ON PASSENGER SATISFACTION AND LOYALTY: MODERATING INFLUENCE OF PRICE SENSITIVITY AND QUALITY SEEKERS | ORO LINIJŲ PASLAUGŲ KOKYBĖS SVARBA KELEIVIŲ PASITENKIMUI IR LOJALUMUI: JAUTRUMO KAINAI IR KOKYBĖS SIEKIANČIŲJŲ ĮTAKA, 21(3), pp. 120–150.
- Yas, H., Alkaabi, A., ALBaloushi, N. A., Al Adeedi, A., & Streimikiene, D. (2023). The impact of strategic leadership practices and knowledge sharing on employee's performance. Polish Journal of Management Studies, 27.
- Yas, H., Dafri, W., Sarhan, M. I., Albayati, Y., & Shwede, F. (2024). Universities Faculty's Perception of E-learning Tools: Filling the Gaps for Enhanced Effectiveness. In Artificial Intelligence in Education: The Power and Dangers of ChatGPT in the Classroom (pp. 573-588). Cham: Springer Nature Switzerland.
- Yas, N., Dafri, W., Yas, H., & Shwede, F. (2024). Effect of e-Learning on Servicing Education in Dubai. In Artificial Intelligence in Education: The Power and Dangers of ChatGPT in the Classroom (pp. 623-639). Cham: Springer Nature Switzerland.
- Yas, H., Aburayya, A., & Shwede, F. (2024). Education Quality and Standards in the Public School and the Private School-Case Study in Saudi Arabia. In Artificial Intelligence in Education: The Power and Dangers of ChatGPT in the Classroom (pp. 563-572). Cham: Springer Nature Switzerland.
- Yas, N., Al Qaruty, R., Hadi, S. A., & AlAdeedi, A. (2023). Civil Liability and Damage Arising from Artificial Intelligence. Migration Letters, 20(5), 430-446.
- Yas, N., Elyat, M. N. I., Saeed, M., Shwede, F., & Lootah, S. (2024). The Impact of Intellectual Property Rights and the Work Environment on Information Security in the United Arab Emirates. Kurdish Studies, 12(1), 3931-3948.