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Contributions of Artificial Intelligence in Commercial Companies

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Abstract :

Artificial intelligence is one of the most significant topics that have gained widespread global interest and attention, especially in recent years. This is due to it being one of the essential technologies resulting from the components of the fourth digital revolution, thus permeating various sectors and creating a real breakthrough, particularly in the world of the digital economy. Artificial intelligence primarily aims to surpass the way humans comprehend and interact with the external world and the changes that occur within it. Subsequently, it has quickly evolved to become and form the cornerstone for achieving creativity and innovation in all fields and domains.

Undoubtedly, it has shown great potential for application in various areas of the business sector. This research paper aims to shed light on the contributions of artificial intelligence in companies and commercial entities.

Keywords: Commercial Companies, Digital Revolution, Blockchain Technology, Governance

Introduction:

The world today is rightly living with a rapid and accelerated revolution in the field of communication and information technology, which was termed the so-called Digital Revolution, which came as a result of the steady and tremendous progress in the means of communication and digital technology, so that it gave birth to important and radical transformations in the economy and global trade, It can be described as the pivot point from which the significant development observed today in various fields has emerged.

As some jurists describe that technology in the end has no value if not exploited commercially, and commercial exploitation is the ultimate goal that gives material and commercial value in addition to the scientific value, which entails opening doors for humanity to benefit from this exploitation, it is necessary that this commercial exploitation of digital technology is surrounded by a general external framework that determines the legal positions of the parties to the relations that arise between the dealers in it.

Understanding the technological aspects associated with commercial issues – as a basic and indispensable experience in the world of communication – has become of great importance, if it is not possible to work in this field without a clear understanding and full knowledge of its aspects.

Blockchain technology and smart contracts are one of the most important topics that have received wide global attention and resonance, and increasingly and significantly in recent years, given that it is one of the important technologies resulting from the components of the fourth digital revolution, which has contributed and will contribute to changing the features of the global economy.

Artificial intelligence is a broad research field with economic dimensions whose effects are evident in various fields , as it was not limited to pure technological fields, but included aspects of research, industry, teaching, medicine and media, and there is still hope among those concerned with the future of the machine to reach artificial intelligence to advanced levels , where many human energies can be provided , through the development of the capabilities of the machine to simulate humans.

This term appeared in existence in 1956, at a conference held at Dartmouth University in the United States of America, under the supervision of John McCarthy, in the presence of a group of experts and specialized scientists, most of whom are from IBM, to study "smart software and software capable of thinking." This field was called the term "artificial intelligence", and John McCarthy defined it as the science of engineering and creating smart machines, especially computer programs. Artificial intelligence is a science that is

interested in creating machines and computer programs that can think exactly as a person thinks, learns as he learns, speaks like him, and also acts like him.

The first to use this term was the scientist "Marvin Minsky "when he wrote an article in 1961 under the title "Step towards Artificial Intelligence", and the definitions and interpretations of artificial intelligence by scientists and specialists were numerous. The basis of this difference between them is due to the ambiguity and ambiguity of the concept of "intelligence" itself. The term intelligence involves a lot of confusion, and thus it is impossible to adjust its terminological concept, and this was reflected in the concept of artificial intelligence, and in the eyes of Eileen Rich, artificial intelligence is that science that studies how to make a computer do the same work performed by humans, but in a lesser way than at present.

One of the most important applications and contributions of artificial intelligence in the field of commercial companies is the technology of the blockchain, which appeared at the hands of its founder Satoshi Nakamoto, when he mined the first block known as the Genesis block in 2009, as a result of the exchange of Bitcoin between him and the American programmer Hal Finney on January 12, 2009. Then, researchers and technologists confirmed and realized that the network and the technology on which this process was founded is a safe environment for conducting transactions or saving, exchanging and transferring assets. The most important feature is that it is decentralized, open and distributed. It is also a network based on compatibility and peer-to-peer technology, in addition to being fixed and unchangeable as well as time series (Daoud and Zarkin, 2022, p. 519). As a result of the technical and programmatic development, the Russian programmer Vikital Buterin founded the first application of the second generation of the blockchain known as the Ethereum platform in 2013, which is the basis of the current close contracts (Haitham Al-Sayed, 2021, p. 6)

There is no doubt that the economy has a great role in the development and prosperity of countries, so that developing and developed countries alike have been keen to diversify economic projects, using for this purpose many tools and methods, perhaps the most important of which are commercial companies, which are only the backbone of the local and international economy, as the company as an idea arose automatically given the urgent need for it in the field of commercial activity.

The economic environment also imposed on companies in general and commercial companies in particular to keep pace with the development, as the increasing degree of complexity in the climate in which companies interact is

inevitable, and the speed to adopt technology that answers the challenges and obstacles posed may be the only refuge that ensures their survival.

From the above, we can raise the question of the contributions of artificial intelligence in companies and commercial entities?

Or in other words: What are the advantages that commercial companies gain by applying artificial intelligence?

To answer this problem, the study will embrace the descriptive analytical approach and this is for enrichment, and in line with the scope of the research, we decided to address the topic by first addressing the conceptual framework of artificial intelligence, and then moving on to discuss the role of artificial intelligence in commercial companies, and this was according to the following pattern:

First axis: An exploratory look at artificial intelligence technology.

Second axis: Blockchain as an infrastructure for commercial companies.

First: Definition of artificial intelligence.

Due to the interest of many researchers and thinkers from different disciplines, whether from the natural, applied, or humanities and social sciences, in artificial intelligence, and due to the complexity of artificial intelligence in itself, many conceptual approaches have emerged that have tried to dissect the concept of artificial intelligence and give it several definitions.

Artificial intelligence, sometimes called machine intelligence, is a branch of computer science and one of the main pillars on which the technology industry is based in the current era. The term artificial intelligence refers to systems or devices that simulate human intelligence to perform tasks and that can improve themselves based on the information they collect.

It was the American scientist Johan McCarthy who coined the term artificial intelligence in 1956 and defined it as "the science and engineering of the manufacture of intelligent machines and especially intelligent computer programs, or it is the branch of computer science that aims to create intelligent machines, or branches of computer science that aim to create intelligent machines."

The General Assembly of the United Nations, through the United Nations Commission on International Trade Law, has defined artificial intelligence as: " a science based on devising systems capable of studying and solving problems, and performing functions by simulating mental processes on their own without human intervention, and these systems can reach self-operating

levels, and they can act completely independently, and it is not possible to predict their work or results, because they act as black boxes."

Artificial intelligence has also been defined in the Oxford English Living Dictionary as "the theory and development of computer systems capable of performing tasks that usually require human intelligence, such as: speech recognition, visual perception, language translation, and decision-making," while the Encyclopedia Britannica defined it as "the ability of a digital computer or computer-controlled robot to perform tasks usually associated with intelligent objects," while the Cambridge Dictionary defined it as "the study of how to produce machines that have some of the qualities of the human mind, such as: the ability to understand language, recognize images, and learn." Through the definitions contained in the reference dictionaries we note that they focused on two pivotal ideas, namely simulation and cognitive characteristics, that make artificial intelligence, especially the computer, work and think like humans, but without neglecting other types of intelligence.

The World Intellectual Property Organization (WIPO) defines it as "a discipline in computer science that aims to develop machines and systems that can perform tasks that are perceived to require human intelligence, whether with limited human intervention or without human intervention"

Among the Arab jurists, we find the stadium Abdul Razzaq Mukhtar , who defined it " as a science that seeks to develop computer systems that work with high efficiency similar to the efficiency of the expert human, that is, it is the ability of the machine to imitate and simulate the motor and mental processes of the human being, and the way his mind works in thinking, deducing and responding, and taking advantage of previous experiences and intelligent reaction, it is to emulate the human mind and play its role."
Professor Mustafa Obaid also defined artificial intelligence as: A name that has been agreed upon to be launched on the quality of intelligence that a deaf machine can gain, by inoculating it with programs and algorithms that make it look like it has a mind that simulates human mental abilities in its various patterns, "and thus it makes that machine behave like a rational or distinctive human using artificial intelligence research.

Second: Types of artificial intelligence.

There are many forms and divisions of artificial intelligence according to angle, but most jurists and researchers agree on three basic divisions:

1-Artificial Narrow Intelligence

In this type of artificial intelligence, it is designed to do specific work and functions without going beyond this. It is also called weak artificial intelligence because of its inability to do work independently, such as image recognition, self-driving cars

2.General Artificial Intelligence (AI)

This type is higher than the previous one because it thinks in a similar way to humans and solves problems that need thinking and intelligence, while researchers are still working on developing it to understand the way of human thinking more accurately to link it to computer systems (

3- Super Artificiel Intelligence (Super AI)

It is also called super artificial intelligence. This type is still a research concept under study, and seeks to simulate man. Here, two basic patterns can be distinguished. The first is trying to understand human thoughts and emotions that affect human behavior, and it has a limited ability to social interaction. The second is a model of the theory of mind, where these models can express their internal state, predict the feelings and attitudes of others and are able to interact with them, and are expected to be the next generation of super-intelligent machines.

The second axis: Contributions of artificial intelligence in commercial companies: Blockchain as a model.

It is also known in the world of information technology that over the years a technology appears that holds answers and solutions to several problems and challenges, which marks the beginning of a new era characterized by modernity. Since 2016, that technology is the blockchain, the cornerstone of which was in 1999 by both Haber and Stornetta as a simple initial idea (Kaspars & Renàte, 2018, p12) , to be adopted with the motivation imposed by the economic environment and the inevitable development to emerge from the narrow space that was represented in digital currencies, specifically Bitcoin, to become usable for all sectors of the supply chains of the health sector and the tax sector and others (Taskinsoy, 2019, p2). This research paper focuses on the uses of artificial intelligence through blockchain technology in the economic institution. What are the motives for adopting it by economic institutions and what is its use?

First: Supply Chain Management.

A supply chain is defined as a group of entities that are involved in designing new products and services, purchasing raw materials, converting them into semi-finished and finished products, and delivering them to end customers. Therefore, it is an effective end-to-end management process from the first stage of product or service design to the time when it was sold, consumed, and finally disposed of by the consumer. This process includes product design, procurement, planning and forecasting, production, distribution, fulfillment, and after-sales support (Lauren & Jayashankar, 2015, p3)   .

According to the aforementioned, the supply chain is the link between the producer and the consumer, and to ensure the efficiency of the company and the satisfaction of the consumer's desires to the fullest, effective management is a must and blockchain technology answers to the latter as it ensures the identification of the source of the product and facilitates the traceability process, and the property verification feature through blocks (Shared Ledger) prevents counterfeiting, in addition to the fact that blockchain technology, when integrated with the supply chain, provides security for the chain by identifying any defect in the chain that may result in the destruction of products, and it also enhances confidence among partners in the supply chain, and an example of the above is Ever ledger platform that uses blockchain technology, which has become a global public ledger and one of its most prominent uses is the identification of ownership of luxury products such as diamonds and proof of the originality of the pieces (Ioannis & Georgios , 2018, p389).

Second: Marketing.

Many researchers focus on the idea that the marketing department is very important in the performance of companies, which affects them directly and positively, so that marketing has a role that allows companies to create channels that connect customers with their products (Jochen & Sven, 2013, p179), which facilitates sales and profits. With the expansion of the Internet, marketers have been fortunate to reach consumers quickly through social media platforms, and here was the transition from traditional marketing to digital marketing. This transition has made digital institutions capable of overcoming the challenges posed by the market in the case of full competition, which opened the door for blockchain to be proactive in offering revolutionary solutions and more effective tools for digital marketing. Facebook, the largest social media platform, is developing its own blockchain for the galaxies of evolution.

Blockchain works on the principle of transparency as it is a publicly accessible ledger, which makes the decision-making process based on data-driven marketing more effective. This is because blockchain provides the feature of verifying and confirming the viewing of ads, which results in the viewing of ads by real people. It also gives marketers the ability to control how their assets are displayed and closely monitor where they are displayed so as to reduce advertising fraud resulting from robots and ensure real interactors interact with ads. Blockchain technology also creates Chain is the appropriate and interoperable environment that cannot be achieved with a central database. This technology becomes more suitable for all Loyalty Programs for business-to-business and business-to-consumer exchanges, as it needs to scrutinize data and some important transfers to curb fraud and support customers through the ability to access the blockchain platform in a real-time manner (ADIGÜZEL, 2021, p84). Blockchain technology allows marketers to easily access and obtain information such as file, points, payment dates, purchase pattern, and their responses to promotions and discounts. All of the above allows For the in-house marketer to design offers and programs that suit loyal customers, for example, American Express has hired Hyperledger Blockchain, which grants reward points to customers based on their acquisition of products in an individual way anywhere, instead of evaluating their spending behavior at a specific merchant, and the decentralized nature of blockchain technology allows customers to track their files and know the amount of Reward Points earned and the ability to dispose of them, which gives comfort and freedom to both the customer and marketers from the physical holdings of discount vouchers. Raju, 2011) (Discount coupons)

Third: Internal corporate governance.

Corporate governance   is the microscope that reveals all the problems that affect the decision-making process (Decision-Making) at the level of the Board of Directors and senior management in order to ensure that all decisions taken are in the course of the objectives that serve the company and its shareholders, that is, corporate governance covers all the rules and restrictions of decision-making in companies. Mulbert, 2009)

Corporate governance   exists to answer the problem posed by the inherent problem of agency between both managers and partners, which arose after the separation of ownership from management, as it is represented in the conflict of interests between the two parties, where the party of managers works to exploit the second party represented in the owners for their personal interests because they are more aware of the work environment (boshkoska, 2015), and therefore

corporate governance defines the relationship between both managers and partners, good corporate governance assumes that managers have sufficient incentives to work on behalf of shareholders, and that shareholders are clearly and correctly aware of decisions from managers, and therefore corporate governance allows to achieve a balance between the wishes of managers and shareholders (Wells, 2010).

Blockchain technology has been shown to be a powerful tool that serves owners Shareholders and helps them intervene, and this is the most desirable aspect of corporate governance as it serves its main purpose, allowing blockchain technology (Akgiray, 2019):

– Greater transparency in terms of ownership and transfer of ownership on the one hand, and all users can see the trades and transfers by managers, activists and others, with regard to the processes of legal internal trading and the violations that occur in it, such as backdating, disguised derivatives hedging, and similar illegal and desirable actions that are impossible to occur in the blockchain network.

– Effective and fair meetings for owners, due to the availability of an easy and effective digital voting system, which results in the referral of vote manipulation as it takes place on the blockchain network.

– Real-time accounting: The technology that characterizes blockchain technology, known as distributed ledger technology (DLT), is a big and revolutionary step. After the introduction of double-entry ledgers, blockchain technology greatly reduces traditional auditing and leaves the role to smart contracts, which results in a reduction in costs.

> Poor governance may be the biggest factor in the failure of companies and the occurrence of crises and arise because of the divergence between the parties to the task in the company, such as owners and managers, as well as the complexity of the network of intermediaries between them, and since the most important goal of blockchain technology is to eliminate intermediaries, it works to provide a great opportunity to improve corporate governance. Akgiray, 2019)

Characteristics of Blockchain	Objective of Corporate Governance
Shared distributed Ledger	Transparency
Irreversibility of Records	Accountability
Peer-to-peer communication	Responsibility
Smart Contracts	Fairness

Source: Vedat Akgiray, The Potential for Blockchain Technology in Corporate Governance, OECD Corporate Governance Working Papers, 2019. P21

Fourth: Business model.

The business model has recently gained the attention of many researchers because it is an important factor in creating value so that it represents the description and engineering that creates, receives and captures value (Weking, 2019, p286). The business model is a new concept in management studies. The term "business model" first appeared in 1957, but until the twentieth century, it began to gain sufficient fame among researchers. The business model can be considered as the story that explains how the institution works, or how the institution does its work. In addition to the multiplicity of definitions of the business model and its close link to value creation, it was found that there is a strong link between the business model and technology, and the way in which systems have established technology (IT) allows it to support the business model, which makes the business model a middle layer between the organization's strategy, management processes and its information technology system. Whatever the development of the information technology system cannot stand alone and ensure the success of the organization, and this relationship between the information technology system (IT)and the business model (BM) is essential and necessary to understand, the business model (BM) guarantees the company a competitive advantage and mediates between modern technologies Creating economic value, as well as the performance of companies, it is necessary to capture value from innovations and ensure its commercial success (Holotiuk, 2017). The organization must understand and know how modern technology affects its business model, led by blockchain being the leader in recent times. According to Osterwalder and Pigneur, the business model consists of 9 blocks, which represent the four most important axes of work in the organization, namely consumer, supply, infrastructure, and financial liquidity. As for 9 elements, they are the customer sector, value proposition, channels, customer relations, revenue sources, key resources, key activities, and key

partnerships. The cost structure, when these elements are combined and properly aligned, creates value for the institution (Alexander Osterwalder, 2010, p10). Blockchain affects each element to be more effective than before, so that the customer segment is the customers that the institution is trying to reach. Blockchain technology allows the accurate identification of customers in the market, and individuals interested in buying and consuming the institution's services, in addition to addressing new customers in markets that have not been addressed before. The value proposition element also includes all the activities of the institution that create value for the customer. The customer buys a product with the intention of meeting His needs, and the value derived (Retained value) from the customer increases in this case as his degree of saturation increases. Blockchain technology can affect the value derived from the customer by providing products or services that did not exist previously or require a long time and high costs. For example, in South Africa, Cent bee provides the ability to send Bitcoin to the List Contact across borders using the phone application in a simple, faster and inexpensive way and without the need for the Currency Exchange Service. For channels, it is the ability of the institution to communicate and reach the customer sector. Customer Segment) to provide value propositions. These channels may be represented in the sales force, its website, shops, etc. Blockchain technology affects the channels by canceling the third party and facilitating and simplifying operations within the channels, such as the ability of smart contracts to make the process of selling and transferring real estate property faster and canceling the personal approval of the authentication bodies because they work automatically (Vida J, 2019, p6). As for customer relationships, they describe the types of relationships that the company establishes with a specific sector of customers. These relationships may be motivated by acquisition The integration of blockchain technology aims to enhance trust and transparency through (Distributed Ledger Technology), followed by revenue sources (Revenue Streams), the fifth element of the organization's business model, which represents the cash generated by the company from the customer sector. There are two types of revenue sources, revenue from one-time payments and recurring revenue resulting from continuous payments in order to provide a value proposition to the customer or provide after-sales services. $10.6 billion was estimated as revenue generated through blockchain projects from the sale of programs and the provision of services only, and blockchain technology allows to achieve revenues by reducing the costs of transfers(Transaction Costs) and activities that occur in the network (Vida J, 2019, p5) The sixth and seventh component of the business model, which is represented in resources and basic activities (Key Resources

and Activities) Resources are on the one hand the most important element required to ensure the success of the business model, they create value propositions for customers, maintain relationships and collect revenues, and may be either in-kind, financial, intellectual or human As for the main activities, they contain all the activities required to provide value, that is, how the institution converts resources into ways to create value (Alexander Osterwalder, 2010, p19) , and the characteristics of blockchain technology that allow increasing the flexibility of resources to allow the institution to move from traditional ownership of resources to the ability to access resources only when they are required. They also allow the automation of many services to allow the human factor to focus its focus and energies on other parties, such as documentation, examination, and auditing (Vida J, 2019, p6), and key partnerships (Key Partnerships) The network that brings together suppliers and partners makes the business model work, and these partnerships may take many forms, including strategic alliances, joint ventures, and reliable supplies (Alexander Osterwalder, 2010, p 20). Blockchain technology may have the merit of canceling traditional intermediaries and transforming financial institutions. The use of blockchain attracts new partners such as technology institutions that help develop applications and programs for windows (APIs). The latter block is the cost structure, which describes all the costs that appear when operating the business model, and the integration of blockchain technology with the latter reduces the number of Remittance costs, negotiation and research costs and the elimination of intermediary costs, as it is expected that blockchain technology may save from 10 to 20 billion dollars in the financial sector by the end of 2022, these savings are the result of reducing the costs resulting from maintenance operations of the information technology (IT) infrastructure, as well as eliminating manual operations that did not bring value to the institution .Vida J, 2019,p17-19)

Fifth: The accounting audit process.

There is no doubt that any company is obliged to appoint a governor and a representative of the accounts in order to   audit and audit the financial information and statements presented to the Board of Directors and the use of artificial intelligence in this field allows to carry out the audit process in a short time   and lower costs by creating accounts through websites that allow companies to evaluate their financial information electronically in addition to allowing the state represented in its bodies such as the   Tax Authority to periodically review the company's files whenever the need arises. The systems supported by artificial intelligence also allowed the portfolios to establish an electronic portal that helps them in auditing and auditing quickly and fairly with

a commitment to international standards, all of which supports and helps to implement the rules of transparency.

Sixth: Increasing the operational effectiveness of companies: Since the 1970s, companies have been investing large amounts of money in information technology, automating manual and repetitive tasks. AI advances now lead to the automation of professional tasks, from auditing to legal work to medical diagnosis (Davenport and Ronaki 2018). Technology also reduces transaction costs between and within companies (Williamson 1975). Companies often deal with each other without any human intervention, and increased transparency of course makes it easier to resolve disputes and problems.

Seventh: Companies are becoming less vertically integrated and more horizontally specialized: this is a long-term trend. Think of the postindustrial war period, when many companies controlled the entire value chain (Ford Motor Company had its own rubber plants for its tires, and IBM developed its own processors). Gradually, it became clear that this level of vertical integration was inefficient and lacking in flexibility, and companies increasingly focused on a narrower set of activities for which "core competencies" were the norm. As the 1990s and 2000s entered, this trend toward horizontal specialization continued to grow and the norm among enterprises in the digital age became the pursuit of narrow expertise in a single, but global, area of work. Google and Facebook represent this trend, as do organizations like Uber, WeWork, and Palantir.

Conclusion

Through this modest study, we have found that blockchain technology answers many questions and hypotheses that have asked the ink of many thinkers, perhaps the most important of which is the problem of agency, which stems from the problem of asymmetry of information between managers and owners, which governance has always strived to devote the principle of transparency to alleviating this conflict, and finding a balance that achieves satisfaction for both parties. The transparency advantage given by blockchain technology through Distributed Ledger Technology may be sufficient for this.

 Blockchain technology also extends to other aspects that the institution is interested in , such as minimizing costs by canceling many costly and unprofitable traditional operations , creating value , enhancing the relationship between the company and customers, effective management of the supply chain and others, but despite the effectiveness of this new technology , it has a number of challenges that may hinder its activity, so excessive transparency

may result in many problems that are related to customers and the nature of the work , as is the case in banks and financial institutions.

Among the most important recommendations proposed are:

- The need to accelerate the development of a legal framework for smart contracts, which balances the economic and programmatic thought of smart contracts with the ethical dimension of contract law.

- Holding scientific conferences and seminars by specialists for the benefit of students, researchers and university professors interested in this field to clarify the technical, legal and economic aspects of blockchain technology.

- The Algerian legislator should encourage the work of the blockchain network, especially for financial and economic institutions and entities.

- The government should support projects based on blockchain technology and smart contracts, to benefit from them during the digital transformation process.

- Unlike some Arab countries, the position of the Algerian legislator is unsuccessful with regard to the adoption of this technology, so that through Law 17-11, which includes the Finance Law of 2018, it did not deal in virtual currencies, which are among the uses of artificial intelligence.

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