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Contracting in the Age of Smart Contracts

التعاقد في عصر العقود الذكية

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Abstract:

This paper aims at discussing the phenomenon of artificial intelligence , which began since the 1960s ،and the interest has been increasing steadily since 2010. However, the reason for this increase is not only due to the expansion of the use of AI in everyday life ،but in particular due to the specific legal challenges that this technology poses. Furthermore, in recent years ،there has been an increase in contract automation ،in other words , the possibility of performing certain procedures related to contracts on the basis of pre-programmed code without human review or any other intervention. Therefore, this technology offers significant benefits in terms of speed ،costs of implementing and administering contracts ،including matters related to contract execution.

Keywords : Contract Automation; Blockchain ; Smart Contract.

الملخص:

تهدف هذه الورقة إلى مناقشة ظاهرة الذكاء الاصطناعي التي بدأت منذ ستينيات القرن الماضي ، وتزايد الاهتمام بها بشكل مطرد منذ عام 2010. إلا أن سبب هذه الزيادة ليس فقط بسبب التوسع في استخدام الذكاء الاصطناعي في الحياة اليومية ، ولكن على وجه الخصوص بسبب التحديات القانونية المحددة التي تطرحها هذه التكنولوجيا. علاوة على ذلك ، في السنوات الأخيرة ، كانت هناك زيادة في أتمتة العقود ، بمعنى آخر ، إمكانية تنفيذ إجراءات معينة تتعلق بالعقود على أساس كود مبرمج مسبقًا دون مراجعة بشرية أو أي تدخل آخر ، لذلك تقدم هذه التقنية أهمية كبيرة الفوائد من حيث السرعة وتكاليف تنفيذ وإدارة العقود ، بما في ذلك الأمور المتعلقة بتنفيذ العقد.

الكلمات المفتاحية : أتمتة العقود؛ سلسلة الكتل؛ العقد الذكي .

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Introduction:

The world accepts a new revolution led by artificial intelligence, 3D printers, block chains and other smart technologies.As this revolution will not change only the structures of production, the characteristics of societies, and the balance of power. Besides, humanity is on the verge of turning towards a new generation of societies. This transformation portends the emergence of a highly intelligent society in which the machine has the upper hand over man, by removing the lines between what is human and material, Morever, it goes beyond what has been called the information society; for the emergence of a post-information society.

In the same context, technological developments have produced new concepts, driven by the invention of the Internet, smart phones, and the Internet, some of them are still unclear, and others have not been settled in their final form as a complete concept.

Blockchain or block Chain technology revolves around ; About a ledger distributed on multiple servers located in different, meaning that the same data has become with many copies as servers around the world, furthermore, this ledger stores the ever-increasing ledger and forms blocks, Thus, some like to call it Blockchain, Besides, the dependence of the ledger is on all servers not only on a single server, which makes it very difficult to be hacked, Rather, It is impossible until now, to be more clear , it can be said that : they are obligations that take a digital form which each party takes upon itself without the presence of intermediaries between them; Where the smart contract monitors the implementation of all obligations and controls the appropriate financial flows, Therefore, there is no need for an intermediary or a third party to include the encrypted code on all conditions,as it works automatically.Morever, the closest thing is to a vending machine in which you put money in it until it gives you what you need of a product after selecting it. If you would like a drink such as coffee, you come to the machine and put the money in it and then receive the drink, and sometimes the machine returns the money again and then it is not possible to receive the drink.

The emergence of the block chain coincided with the appearance of the term smart contract, which is the result of the use of two technologies: the computing of contractual content and the use of the blockchain. Where these two techniques led to the birth of a contract of a tamper-proof which is executed automatically as well as in a transparent manner. Although the smart contract cannot provide a final solution to the problem of trust, but whenever it is possible to improve transparency and ensure good implementation of the

contract, in a technical way, it can contribute positively to influencing the climate of trust between the parties.

The theoretical importance of the research, according to the researcher's knowledge highlights the limitations of previous studies that directly examined smart contracts, and their lack in Arab libraries. Therefore, it is hoped that this research will have scientific value added to Arab libraries and enhance knowledge of smart contracts.

The research also derives its practical importance by addressing a relatively recent topic, where smart contracts are considered among the important matters for members of society, as well as at the same time represent the center of interest of many institutions, companies and individuals, especially in light of contemporary economic and social conditions, thus the research attempts to explain the concept of smart contracts and purposes that prompted companies and individuals to apply it.

Accordingly, the problematic of the study lies in the following questions: What is the Blockchain technology and what are its legal repercussions on contracting? What is meant by smart contracts and how can this technology support trust in contractual relationships. ? The study relied on the analytical and descriptive method and it was divided into three axes:

1 - Blockchain technology.

2 - Smart contracts and their characteristics.

3- the legal rooting of the impact of the blockchain on contracts

1. Blockchain Technology.

Historically, the emergence of the concept of blockchain dates back to the emergence of the digital currency Bitcoin on October 31, 2008, when Satoshi Nakamoto published a short but groundbreaking research paper to the Crypto Forum. in which he outlined a way to overcome the Double-Spend Problem that wracked an earlier coding mechanism.

The first use of bitcoin dates back to January 3, 2009 when Nakamoto created the first blockchain(1) (the first block in the blockchain and the only one that has no previous block to be associated with, called the Genesis block), and issued itself in the first 50 bitcoins, as all the blocks in bitcoin Refers to this original deal .(2)

1.1 Blockchain concept

[1]- See, E.G., Satoshi Nakamoto, Bitcoin: A Peer-To-Peer Electronic Cash System, Bitcoin Project, Http://Bitcoin.Org/Bitcoin.Pdf [Https://Perma.Cc/Gxz8-6sdr].

[2] -Figuet, J.-M. Bitcoin Et Blockchain: Quelles Opportunités ? Revue D'économie Financière (03) 2016 , P. 325-338.

Block chains are defined as a distributed database [1] that maintains a constantly growing base of data records against tampering or modification even on the part of the operators of the data stores in the nodes. The block chain can be considered as a general ledger of all transactions that are executed, as it is constantly increasing as a complete block that is added to the previous blocks that make up the chain, the most important , the blocks which are added to the chain in a linear chronological sequence. Every miner gets a copy of the block chain when it joins the network and the block chain that include a complete and accurate information about the correct balances from the formation block to the final block of the chain.[2]

Some have defined it as a long chain of encrypted data distributed to millions of computers and people around the world that allows many parties to enter information and verify it, Morever, every computer or party in this chain possesses the same information, when one of them is hacked or disabled, this does not affect the rest of the series; It is an encrypted, secure and public record, it is also considered as a strong chain of trust. In which there are some faults in the central nodes in the network or loopholes for penetration or an electronic attack,however, the network is able to correct itself by verifying the validity of the transaction by protecting its previous data through an automated equation electronic contracts or agreements are added to “Blockchain”, its terms are verified without human intervention, it is the largest open digital record that allows the transfer of the origin of ownership from one party to another at the same time without the need for an intermediary, with verification a high degree of security for the transfer process against fraud or manipulation attempts, as all individuals around the world subscribe to this registry.

However , it is necessary to make sure of the data that is to be added to the blockchain technology before saving it because it is not yet adjustable Preservation.[3]

1.2- Elements of Blockchain Technology

Blockchain technology is based on a set of elements, including a block, which is a set of operations or tasks that are carried out within the chain; Such as transferring money or registering data and following up on a case, each block absorbs a specific amount of operations and information, thus, it does not accept more than it so that the process can be

[1] -K. Fanning, And D. Centers. «"Blockchain And Its Coming Impact On Financial Services.» The Journal Of Corporate Accounting& Finance, 2016.p.330.

[2] -Roda, Christopher. «Smart Contracts, Dumb Contracts.» Dalloz Ip/It France, 2018.p 397.

[3] - Al-Hadithi, H. S. (). Altering Technology Contracts (Smart Contracts). Journal Of College Of Law For Legal And Political Sciences , 2021 .P 324.

completed inside it permanently, then a new block associated with it is created, its aim is to prevent fake transactions within the block because of the chain will be frozen and prevented of terminating or recording transactions.

Hash: It is a mathematical process that contains documents, images, and videos to form a compressed string of alphanumeric characters that cannot be reprinted to their original content. Hashing performs key functions; As it is credited with distinguishing the chain from others by taking each one in a distinct hash that is unique, by hashing the blocks which are linked to each other within the chain so that each block is linked to the previous and the subsequent hash, which makes it go in one direction from the original block that follows it, as it is not allowed to modify the blocks that were created.

Information: It means the individual order that takes place within the block and is represented with other orders and information of the same block, as this information depends on a type of applications and processes in which this chain is used, it may be a record of buying or selling transactions, bank settlement or contracts.

Time imprint: It is the timing in which any operation within the chain was performed, this element is related to the hash, as the process through which the Blockchain technology is carried out takes a distinct time stamp that distinguishes it from others, Furthermore, this element with its predecessor increases the security of this technology and the accuracy of the information transmitted which increases confidence in this technology in the processes of preservation, confidentiality and security.

As for Ethereum, it is a decentralized digital information system that is carried out through electronic computers linked to each other and spread throughout the world [(1)] .These computers use applications during which many orders related to smart contracts are executed in a very complex way, and requires many information protocols. In a manner similar to the conclusion of customary financial contracts, in order to be implemented after being subject to many conditions and requirements in a way that is difficult to simulate or defraud. [(2)]

All of these digital protocols are not subject to any authority or government at all, as there is no party able to control the mining or exchange of Ethereum, in 2013 “Vitalik Buterin” [(3)]introduced the Ethereum currency that adopts blockchain technology not only to use it as a

[1]- See Buterin, V. A Next Generation Smart Contract & Decentralized Application. 2013.P24.
[2] -Al-Sawy, Op Cit P490.
[3]- Ben Tariah, A. (2019, May). Smart Contracts Embedded In The Blockchain: What Challenges To The Contract System Currently? (Kuwait International Law College Journal, Special, P. 482.

virtual currency, but as an introduction currency for smart contracts so that the third party can be dispensed with. Looking at the previous definitions, we find that everyone agreed on the meaning and characteristics, even if the phrases differed. Everyone agreed that the blockchain technology is a decentralized information system that allows all parties around the world to view it, and even keep a copy of it on its computer, and that the encrypted information that enters in the form of a contract cannot be changing or tampering with it, Thus, it cancels the role of the mediator or the third party whatsoever; Such as the real estate registry, for example, in the transfer and registration of ownership, or the bank, in the transfer of funds and their access to the other party, however, the last definition added that its complex system is similar to the conclusion of conventional financial contracts and that it is carried out on terms that cannot be imitated, manipulated or defrauded due to its reliance on encryption which is difficult to imitate.

2. Smart contracts and their characteristics

2.1- Definition of Smart Contracts

Investopedia defines it as: “Self-executing contracts that are built and programmed within a decentralized distribution network whose terms and conditions regulate the relationship between the seller and the buyer (they may not know each other) without the need for a central authority (third party), as they are able to provide confidence because they are irreversible.Therefore, the two parties carry out the transactions in accordance with the terms and conditions of the contract.

It was also defined as: "a contract that brings together two or more parties, that can be programmed electronically and its terms automatically implemented once certain events or pre-defined conditions are met.". [1]

It was also defined as: the contract that is written using encrypted tokens, where the obligations under the agreement can be activated and implemented automatically. Smart contracts (also called self-executing contracts) in this sense are considered a contract between two or more self-executing parties through the protocol [2]that is based mainly on mathematical symbols called algorithms, and includes all information about the rights and duties of the parties, as well as the implementation of all clauses of the contract which is

[1]- Huber, Elise. , Op Cit P49.
[2]- Al Balooshi, A. «Introduction To Smart Contracts.» Paper Presented To Al Baraka Symposium 39. 2019.P 179.

based on block chain technology.These software evaluates the terms or conditions of the contract, if any of them is achieved, a periodic report is sent to each of the organizers to verify the credibility of the data.Once a clause or condition is fulfilled, a certain process is automatically implemented.Updated reports are sent to both regulators and auditors in order to verify the credibility of the new data.Furthermore, smart contracts can be implemented in any cryptocurrency and the Ethereum currency is more used in the application of smart contracts, as it is not just a currency but an integrated platform with certain characteristics that are not available in others, thus it has become the most famous platform to deal with smart contracts.

From this point of view, we can come up with a definition of smart contracts, we can say: They are stand-alone software that automatically implements the terms and conditions of the contract without the need for human intervention. All procedures are done automatically without resorting to the services of intermediaries.

After defining smart contracts, we can monitor the common characteristics between these contracts, whatever the field in which the contract is. Among these qualities, writing in smart contracts is not done in the traditional language; Because it comes in an encrypted form or a special code, as from it the contract is automatic. For example, if the issue concerns one of the ownership transfer contracts, the transfer of ownership from (A) is done automatically to (B) if (B) transfers the consideration to (A) . [(1)]

In addition to the feature of the implementation mechanism of the obligations stipulated in the smart contract, however, noting that this requires the intervention of the human factor by providing the agreed items, so its example is like a vending machine that needs the intervention of the human element, whether to determine the product he wants or to enter the money.

The fact that smart contracts are self-executing; It means that the agreement of the two wills in the smart contract cannot stop its procedures once the two wills meet.Furthermore, all this makes smart contracts less costly because they do not need the third element such as a lawyer, broker, broker or notary, given the independence of these contracts. [(2)]

Thus, a smart contract is more than a (simple) electronic exchange of data, but rather participates in the crystallization of a contractual 'voluntary agreement', by automating the

[1]- Al-Sawy, Op Cit P 488.
See Also Don Tapscott & Alex Tapscott, Blockchain Revolution: How The Technology Behind Bitcoin Is Changing Money, Business, And The World 102 (2016) ("[Before Blockchain], Smart Contracts Were An Idea All Dressed Up With Nowhere To Go, As No Available Technology Could Deploy Them As Szabo Described.
[2] -Al Balooshi, A, Op Cit P176.

identification process of the parties even without their knowledge, just like a POS transaction in Shopping Center.(1)

When a person purchases a plot of land from another one , he enters the register of plots of land on which all individuals involved in the blockchain technology which have publicly registered their property for everyone. Besides, he buys the piece of land he wants from its current owner, thus the block chain or this globally distributed record allows individuals to follow all the movements made on this piece and the date of its transfer from one owner to another, until it reaches the current owner, and if the two parties agree, the current owner transfers the ownership to the new owner through the same record, which shows to all individuals that this party has transferred the ownership of the plot of land which is transferred to the new party, after that, it does not need to be documented with the real estate registry or to be traced back to the neighborhood; Where millions of individuals around the world participate in documenting this transaction that takes place within the registry, as all individuals who performed the mining process get a percentage of the authentication, however, it's much lower than traditional authenticators for the effort they put into ensuring the security of the transaction through mining.

Among the applications of smart contracts are bets and guarantee, digital rights, and digital currency applications, such as: e-commerce, financial payment, remittances, direct lending: person to person, microfinance, and applications of guarantees: for instance private markets, debt, crowdfunding, financial derivatives, Record keeping like : health care, address records, voting, intellectual property, and the blockchain technology which has been widely applied in the real estate field contracts and agreements. There are many applications that are in the process of construction, among the most prominent applications that have been implemented.

Worked in it: in the field of real estate property transfer, in the field of investment in real estate assets and in the digitization of contracts and agreements .(2)

2.2 Components of Smart Contracts

Each smart contract is based on three components; The first is the signatories, which are the two or more parties that use the smart contract, agreeing or disagreeing on the terms of the agreement using digital signatures. The second component: the agreement, which can just be a

[1]- Lauren Henry Scholz, Algorithmic Contracts, 20 Stan. Tech. L. Rev. 128, 146 .2017.
[2]- Mansour, D. Legal Aspects Of Smart Contract Applications. Journal Of Legal And Political Sciences, September2021 12 (2).P 45.

one that exists in the smart contract environment. Instead, the smart contracts must have direct, unhindered access to the component. The third component: the smart contract must include specific terms, that must be described in a fully mathematical way and using a programming language appropriate for the environment of the private smart contract, this includes the expected requirements from all participating parties as well as all the rules, rewards and penalties associated with the mentioned terms.(1)

The environment for smart contracts needs to support the use of public key cryptography which enables users to log out of the transaction using unique and specially generated cryptographic tokens. The environment must be fully decentralized to implement the smart contract blockchain networks, especially Ethereum which are the ideal environments for smart contracts.Furhtermore, The source of digital data used in the smart contract must be fully documented, as this requires the use of basic SSL security certificates, HTTPS, and other secure communication protocols that have not been widely used now.

2 .3 The impact of blockchain technology on the protection and stability of smart contracts

Contracts based on blockchain technology have several characteristics, including dispensing with the intermediary or third party; This is the so-called decentralization that has become a tangible reality through the presence of a global network of computers; Where the Blockchain technology records a common data management base that in return records the operations occurred through all network devices, morever, each of the users who wish to add data or transactions verify them according to the consensus system in the Blockchain before distributing them to all nodes (Nods) so that each point keeps a copy from the chain that includes the blocks that have been verified and added.

It is important to verify data and transactions to be added to the blockchain technology before saving it; As it is impossible to be modified or tampered after saving data, because the encryption system based on this technology prevents data from being changed or tampered, Besides, if incorrect data is entered, blocks containing invalid transactions can be discovered and are not accepted in the network.

Considering the open source blockchain technology, anyone can use this technology in any application he wants, in order for the transaction to pass correctly, it must be passed on to

[1]- Al-Hadithi, Hala Salah. «Altering Technology Contracts (Smart Contracts).» Journal Of College Of Law For Legal And Political Sciences , 2021 .P .35.

all users for the purpose of recording and confirming the transaction, because this record does not have a central database.

In addition to the feature of independence, which means that each point of the network is independent of the other without being affected by it with its equal, independence also means that the smart contract performs its task independently from its user, which authorizes the software to buy or sell any good or service without referring to its user or request which needs it. The blockchain mechanism enjoys confidentiality and anonymity, as this technology allows transactions to be carried out without revealing the true identity with the possibility of using a pseudonym to deal with.Furthermore, transactions are made by giving the dealers two keys; The first is a personal key in which there are details about the true identity of the person which is done even once, there is also the public key, which is a code linked to the personal key that appears in front of everyone with a pseudonym or nickname.

The transactions that take place in the blockchain technology are also characterized by speed [(1)]and low costs compared to the current systems that need manual auditing, which affects them in the aspect of speed by delaying the procedures until all data is verified and corrected.

The characteristics of transactions based on blockchain technology make the smart contract a major role in the stability of transactions, it is encrypted as it is very difficult to be penetrated, it is also distributed so that it is impossible to change or forge it, Morever, it is self-executing because it is irreversible, thus it adds stability of transactions at every stage of the work of Smart contracts programs.

In the phase of concluding the contract, encryption and distribution ensure that there is no loss or change, which leads to the stability of transactions, as there is no room for fraud or counterfeit.

Also, authentication through openness and decentralization keeps smart contracts away from documenting transactions through banks, institutions, and others, as it has to stay away from corruption and forgery.

In the implementation phase of the smart contract, we find three characteristics that play a role in the stability of transactions, namely:

* Immediate execution that does not allow the terms or conditions to be tampered with.

[1]- Al-Sawy, Op Cit P490.

* The system cannot be tampered with. Because implementation is no longer in the hands of one party.(1)

* The last characteristic of the implementation phase is that it cannot be revoked (non-revocation), in the rest of the contracts it can be reverted as long as the contracting parties are in the contract council in general, however the smart contract ends in the contract council with the confirmation of acceptance, therefore, the option period ends by simply pressing the OK button

3 .Legal rooting of the impact of blockchain on contracts

Determining the extent of the credibility of the concept of contract in the legal sense on transactions that are based on blockchain technology requires researching to which extent the definitional concept of these transactions agrees with the one of contract adopted within the traditional contract theory which necessitates the examination of its truth and description, as it is a procedure or a contract, and the nature of legal description for its procedural dimension.

Where fiqh was divided into two parts (2), the first part gives the character of a contract to actions based on a block chain , it is called a smart contract, whereas the second part negates the character of. its contract.

Among the first section was the French jurist Bruno Dendero, who considered it as a contract integrated into the blockchain platform, once it contained contractual terms.

While both Mustafa Mekki (3)and Christopher Roda, (4)considered that the so-called smart contracts are not up to the level of a contract, as they are an information program that accompanies a previously concluded one. However, The dominant trend in American jurisprudence is that the smart contract is an information technology or information support that seeks to modernize the classic contracts with the inevitable existence of pre-established conditions.(5)

[1]- Sannidhi Agrawal, **Smart Contracts: Functioning And Legal Enforceability In India,** International Journal Of Law And Social Sciences (Ijls) Volume- 7, Issue- 1 – 2021.P05.

[2] - Mekki Mustapha , Op Cit , P 106. See Also Lee Bacon, Nigel Brook & George Bazinas, "Smart Contracts:" Where Law Meets Technology, Clyde&Co (June 22, 2016), Http://Www.Clydeco.Com/Insight/Article/Smart-Contracts-Where-Law-Meets-Technology.

[3]- Mekki Mustapha , Op Cit , P 230.

[4] -See Fabian Gillioz, Du Contrat Intelligent Au Contrat Juridique Intelligent, In Dalloz Ip/It, N 1 Janvier 2019.P16.

- see also Roda, Christopher, Op Cit , P 397.

[5] -Al-Senussi, Op Cit , P56.

Perhaps the difference in definition and description led to a difference in defining the legal nature of this name, this is due to the fact that the first people who defined the smart contract were programmers and automated media men.

3.1 The smart contract is an automated contract

This requires the integration of the contract concluded by traditional methods into the computerized media device, so that the language in which it was written (Arabic, French or English..), it is transferable and interpretable due to its flexibility which turns into a fixed and statices digital language, therefore it does not accept any interpretation. Because the logic of mathematics and algorithms replace the one of traditional language.

Note that the process of translating the terms of the contract into language and information technology has important limitations, however, all clauses of the contract are not translatable into computer language and noting that some contractual terms are completely translatable, because they are subject to a precise definition.

However, the purpose of a smart contract is not only to go beyond a computerized contract but rather it must also perform some contractual obligations. In other words, evaluating the performance conditions of the contract which represents only an initial step in achieving its main objective of automatic execution of the contract.

The first step leads to the execution of the contract technically is by adding a few instructions to the initial algorithm, we can "notify" the computer to act in order to perform some contractual service if all the conditions for the execution of the contract are met.

However, the smart contract knows certain limits as the process is controlled by a computer program, as the latter cannot perform all the tasks, at least for the time being[(1)] .While certain operations such as transferring a non-physical work, sending a specific code or restoring or interrupting service over the Internet .., the theory can be performed under a smart contract. While the implementation of some commitments requires human intervention.

In this case, dealing in the block chain or the so-called smart contract becomes a simple tool aimed at facilitating the implementation of the contract when it does not play any role in the stage of its formation.Furthermore, all contractual clauses are expressed in the traditional language. When the parties decide to translate one or more clauses of this contract into

[1]- Ababneh, A. «The Role Of The Electronic Mediator In Contracting: A Study In The Bahraini And Comparative Electronic Transactions.» Law Journal, June 2010.p. 359.

computer language for the purpose of designing a smart contract. Thus, the computerized part of the contract does not become an execution tool.(1)

However, in the case where some or all of the terms are expressed exclusively in computer language, the smart contract is no longer just a tool for enforcing the original contract. Rather, it becomes a self-contained legal entity.

Some believe that a smart contract does not exist unless all the contractual content is translated into a digital code or a digital language. According to these, a smart contract exists only if all contract terms are expressed in computer language and all the resulting obligations are automatically performed by a smart contract i.e. That the existence of the entire contract must be managed through computerized setups.

3.2The smart contract "action or contract

In the last amendment to the French Civil Code of 2016, the French legislator defined in Article 1101 of the amended Civil Code as the agreement of two or more wills to create, modify, transfer or terminate an obligation, while the previous civil law defined it as an agreement through which one or more persons are obligated towards a person to give While the smart contract is defined according to the established fiqh as: "A program that guarantees the implementation of the contract without the presence of an intermediary (2) in the event that its requirements are met. Previously agreed upon, according to the rule (in the event that... it will be). « If this.… then that »(3)

By analyzing the various previous definitions, it can be said that the smart contract does not meet the legal conditions of the contract; The fact that it is legally based on the compatibility of the wills of the originator of the contract and the one prior to its implementation.Besides, the four outputs of voluntary compatibility: creation, modification, transfer and termination are the results of the contract, not the contract.However, implementation is part of the stages of the contract which is divided between two articulated stages: the conclusion preceded by negotiation and the implementation followed by the termination, with this simple adaptation, it cannot be said that the contract was born in the blockchain system, but rather most of what can be acknowledged within this system is the execution that is the output of the contract, not the contract.

[1]- Muhammed Al-Amin Boudakhil, Mustafa Bin Shalat, Mubarak Bin Zair. «Smart Contracts And Islamic Economy Transactions -.» Annals Of The University Of Algeria, March 2021 .P717.

[2]- Buraghda, Narimane; Blockchain Contracts (Smart Contracts) From A Contract Law Perspective. Algerian Journal Of Political And Economic Legal Sciences, 02(52), 2019 P. 106.

[3] - See Ben Tariah, Op Cit,P 482.

Also, one of the issues that arose in justifying the legal description of smart contracts as contracts is their digital nature, as some jurisprudence goes to the possibility of considering them as a hypothetical contract in which its life cycle is completed in the digital environment rather than the real one, which is not without criticism. This is because it is not possible, until now, to say that there is a contractual process that takes place entirely in digital form. Such saying requires that the various stages of the contractual process be fully computerized and encrypted, starting from the negotiation stage to the conclusion stage and ending with the implementation stage, which is missing because it is impossible to say that nowadays we are capable in front of a digital system of programming and encoding these various stages.

Many contractual matters are still outside the scope of computing, especially those related to the principles framing the contractual process, such as the principle of good faith, the principle of binding force of the contract, the principle of contractual balance and others. Likewise, the processes of offer and acceptance are still outside the digital framework, in addition to the issues related to defects of will and capacity, within the latter, the verification of digital identity constitutes the contracting person and its conformity with the physical identity which is a very complex issue, as how we verify the validity of consent and approval in order to claim the existence of a digital personality that proves the physical reality of the person in the digital environment.

3.3 **Smart Contract or Electronic Contract**

It is necessary to differentiate between the concept of smart contracts and electronic contracts due to the severity of the confusion between them. Electronic contracts are contracts that are made through modern electronic devices such as mobile phones, tablets, computers and others through the Internet through various means of communication by image, voice or electronic communication (messages) via e-mail. electronic contracts are thus more comprehensive than smart contracts that require certain procedures and conditions.(1)

A smart contract (as previously explained) is a computer code that can be embedded in the blockchain to write, verify, and negotiate a contract. Smart contracts operate under a set of conditions that users agree to, and when those conditions are met, the agreement is automatically executed.

For example, you want to rent an apartment from me using a smart contract. The deal is that I will give you the access code to the apartment as soon as you pay me a month's wages.

[1] -Muhammed Al-Amin Boudakhil, Mustafa Bin Shalat, Mubarak Bin Zair. «Smart Contracts And Islamic Economy Transactions -.» Annals Of The University Of Algeria, March 2021 ,P713.

We will write the deal into a smart contract, which will automatically exchange the apartment's access code for the rental amount when it's time to pay. Certainly, smart contracts are still in their infancy, nowadays, they can be programmed to perform only simple functions.

It is also necessary to distinguish between smart contracts that represent the electronic execution of the contract, and electronic contracts that represent electronic contracting within the organization of the processes of acceptance, rejection and proof, while the electronic implementation phase remained outside this context, today smart contracts, albeit with some privacy, come to take over this task related to the implementation of the contract, so that in the two stages we are in front of a human dependence on the machine in contracting and in implementation to complete the structure of a traditional contract, although the electronic contracting process represents the raw generation of the digital revolution that is dominated by human nature, while electronic implementation today represents the most advanced generation of the revolution Predominantly digital, automated, here's the difference.(1)

Note that, if some are inclined today to expand the scope of smart contracts as it includes the two stages of conclusion and implementation, but this proves that the majority of this procedural mechanism up to now is the implementation of contracts, without eliminating the possibility that the latter has an active role in concluding contracts, but within the privacy they enjoy especially their nature and privacy .

The digital system on which it is based, it means the “Blockchain” system, so that it will be limited to a digital contract that leads to a digital implementation according to the conditional rule of this system, “If… it will be..”, concerning the electronic contracting, we are not in front of a conditional system, but in an electronic procedural mechanism for a traditional contract that will be implemented traditionally, outside the “niahckcolB” blockchain system, according to the concept of traditional deal , especially in the special consideration of this contract. We are not talking here about a digital currency, or a narrow range of contracts that can fall under The “Blockchain” system, but rather about an electronic procedural mechanism for contracting that can include all types of contracts, rights as well as obligations.

[1] - Marique, E. Les Smart Contracts En Belgique : Une Destruction Utopique Du Besoin De Confiance.2019. P.24.

Regardless of the doctrinal controversy existing in classifying this type of contract, regulated legislation, including the US law issued in the state of Nevada in 2017, amending the provisions of the federal law on electronic transactions which encouraged its work by exempting them from taxes.

As for the French legislator, which was adopted by Law No. 520/2016 of April 2016 concerning fund bonds. And Law No. 1691/2016 of 12/09/2016 on combating corruption and modernizing economic life. [1]

As for Arab legislation, such as Algerian, Tunisian and Jordanian legislation, and in the absence of recognition of blockchain technology as the cornerstone of smart contracts, it is not time to legalize these contracts. But on the other hand, Arab countries, led by the UAE[2] , have taken great strides in the field of working with the blockchain system. Therefore, this may encourage other countries to follow suit in the future.

Conclusion:

Based on what was stated in this study, we found that the life cycle of a smart contract begins with recording the terms of the contract between the contracting parties on the blockchain network. This network is shared by each of the contracting parties, organizers and confirmers, according to the type of contract concluded. The contract is linked to various systems, whether internal or external, according to the nature and terms of the contract.

Once the smart contract is linked to the various relevant systems, a special algorithm continuously evaluates the terms or conditions of the contract, waiting for any of them to be verified. The smart contract sends periodic reports to both regulators and auditors in order to verify the credibility of the data. As soon as one of the terms or conditions of the contract is fulfilled, a certain process is automatically executed. Immediately after that, updated reports are sent to both regulators and auditors in order to verify the credibility of the new data.

The completion of smart contracts depends on two essential elements that have no third, namely, the presence of the block chain, and the presence of an encrypted digital currency. As for the block chain, it is the application platform for smart contracts through which third-party services are dispensed with, and as for the encrypted digital currency, it is considered The intermediary currency through which the payment and completion of contracts are made. The

[1]- See Huber, Elise. «Les Smart Contracts : Contrats Non Identifiés ? .» Actualités Juridiques Du Village De La Justice. 29 Juin 2018. /Www.Village Du Droit.P.34.
[2] - Al-Sawy, Op Cit P492.

establishment of smart contracts on these two elements represents the difference between them and other traditional terms that are woven around contracts, transactions and sales.

Given the link between smart contracts and these two elements, many researchers have now called smart contracts blockchain blockchain contracts a contract, as they are called digital currency contracts, which confirms the close link between them and these two essential elements.

It is clear that smart contracts will change some of the basics in the traditional contract, including termination and payment of non-implementation, which are in the event of a breach by the contracting party of his obligations. But in a smart contract, the execution is automatic. For example, in a smart insurance contract, the insured pays the premiums automatically by deducting the premiums from his account on the block chain and transferring them to the insurance company's account without the intervention of brokers or agents. If the risk is realized, the insurance is automatically activated and the compensation value is transferred to his account.

Although many countries have prohibited the use of digital currencies in trading as a result of speculating on them, and I feared the exit of capitals in foreign currency or the inability to track operations and transactions made in this currency, which may be suspicious transactions, such as arms or drug trafficking. However, this does not prevent the use of the technology of the blue-chain inherent in these currencies, and the keenness to teach it and benefit from it in various economic and service journals. Increasing the added value and improving the overall performance of companies in various sectors.

The most important findings of the research can be stated from

Recommendations on the following points:

First, Arab legislation should adapt the legal frameworks and rules, and recognize the agreements made on the Blockchain in the same way as the official document.

Secondly ,We recommend the Algerian legislator to develop and adapt legislation related to electronic transactions So that these legislations accommodate all modern methods of contracts and keep pace with developments the rapid pace witnessed by digital technology, and we suggest adding the following text: It may be done Contracting through automated electronic means, where the contract is considered valid and productive legal effect, notwithstanding the absence of the direct personal involvement of a natural person in the process of concluding the contract in accordance with these contractual regulations.

Third, the necessity of practical benefit from the experiences of the countries that have adopted these contracts in their modern system, so that they have become a part It is an integral part of its daily transactions, which helps in discovering and filling gaps in proportion to our system.

Fourthly, the necessity of preparing developmental courses for groups working in the field of changing technology contracts (Smart Contracts).

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