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Responsibility of smart contract parties in Algerian legislation.

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Abstract

Smart contracts are simply programs stored on a blockchain that run when predetermined conditions are met. On blockchain, the goal of a smart contract is to simplify business and trade between both anonymous and identified parties, sometimes without the need for a middleman. A smart contract scales down on formality and costs associated with traditional methods, without compromising on authenticity and credibility. What is the civil liability of the parties to the smart contract? What is the Algerian legislator's position on these contracts? This is what will be discussed in this article.

✓ **Keyword : Smart contracts, blockchain, liability, Bitcoin**.

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1. INTRODUCTION

In 2009, blockchain technology was used for the first time, which relies on transactions recorded in a large ledger available to everyone, and the user must create an account and exchange his traditional money (Dollars, Euros) for Bitcoin. Initially, Blockchain was seen as the technology supporting the Bitcoin network, but it evolved and was used in other transactions, such as secure file storage, concluding smart contracts...

Dealing with smart contracts can reduce the risks of contract fraud and facilitate its implementation. This is one of the strengths of this contract, as it limits the occurrence of contractual errors and reduces judicial disputes. It is also impossible to cancel the smart contract, but with all its advantages it is not without some disadvantages; the difficulty of canceling a smart contract is an obstacle if its parties want to modify it.

This research will focus on cases of legal responsibility for the parties to the smart contract and the parties involved in its preparation, namely the contractors, the programmer, and the reviewer. It is possible that the damage results from an error committed by the contractor, such as the incorrect communication of his will to the smart contract programmer. It is also possible for the smart contract programmer to commit a mistake.

In interpreting the will of the contractor, the auditor may also make a mistake when approving the validity of the contract terms, because good transmission of the will of the contractors, good understanding of the programmer, and good review from the reviewer, will result in a correct smart contract.

Based on the above, we pose the following problems:

What are the limits of responsibility of the smart contract parties?
To what extent are the general rules of civil law regulating these contracts sufficient?

To answer this question, we will touch upon the following points:

- Distinguishing between electronic and smart contracting
- Responsibility of smart contract parties.
- Responsibility of the intervenor in the smart contract.

At the conclusion of the research, we conclude with appropriate results and recommendations, with the hope of contributing to enriching the research topic with new ideas that will serve as a starting point for future research.

2. Distinguishing between electronic and smart contracting :

We will define the electronic contract as the beginning of smart contracting, then the concept of the Block Chain platform, which is the electronic field in which smart contracts are created and implemented, and after that we will discuss smart contracting.

a) Electronic contract :

Jurisprudence defines it as a contract concluded via the Internet. It is also defined as a contract concluded by electronic means, whether that means is electrical, magnetic, optical,

or any other similar means, and it is an agreement between two or more people via remote communication technologies, to establish, modify, or terminate a legal relationship.[1]

In the terminology, The Qatari law for electronic transactions is defined in its first article; An electronic transaction is any transaction, contract, or agreement concluded or implemented, partially or completely, by means of electronic communications.[2] As stated in Algerian Law N° 18-05 relating to electronic commerce in its article 06, an electronic contract is every agreement or agreement aimed at selling a good or performing a service, which was prepared in advance by one of the parties to the agreement with the acquiescence of the other party, so that the latter cannot make a real change in it. It is concluded remotely, without the actual and simultaneous presence of its parties, resorting exclusively to electronic communication technology. [3]

We note that the Algerian legislator does not find a difference between the electronic and traditional contract, in terms of its content or fields, but rather the difference in the method of concluding, implementing and proving, as both of them are an agreement between two or more parties to create a certain legal effect, and he considered it a contract of adhesion in which the other contracting party does not have the right Negotiation or amendment, either accepting or rejecting the contract. These are contracts concluded between absent persons at a distance, and their conclusion is limited to electronic means of communication such as e-mail.

The Algerian legislator considered them to be real contracts (Article 70 of the Algerian civil law) and that the disparity between the two parties is economic, not legal, and has no effect on consent and the existence of the contract, which is subject to the general rules of contracts. Consent exists, but it is imposed by economic factors more than by legal or psychological factors.[4]

Accordingly, the electronic contract is concluded via the Internet, using an electronic intermediary to exchange offers and acceptances between the contracting parties, creating contractual obligations. And its characteristics; It is a contract of adhesion, a consensual contract, concluded via an electronic medium, concluded remotely and between absentees, the absence of a paper document, the difficulty of determining the place of concluding or implementing the contract, and of a commercial and international nature. The pillars of contracts are; Consensus, which expresses free and sound will, the object, which is the focus of the electronic contract, whether selling a good or performing a service, the reason, which

is what is intended by the electronic contract, formality, which is the conclusion of the contract in a specific form required by the law.[5]

b) Blockchain:

It is the material and basic pillar of these contracts. This technology was created for safe trading of virtual currency, so trading takes place from one party to another without the intervention of a third party between them, such as a bank (peer to peer), and after that it was used in other fields; Such as financial transactions, smart contracts, electronic voting, etc.[6]

The Blockchain platform is a giant database that includes a series of linked blocks, where information is sent between those blocks, and each block serves as a digital record that stores the information in a secure manner to complete the execution of the transaction process. Network members can review and verify this digital record. This platform provides legal and informational stability for members.

It should be noted that Blockchain technology includes many platforms, such as the Ethereum platform, which operates smart contracts, as it acts as an electronic mediator between contractors, as it replaces banks and the real estate registry office.[7] It can be defined as recording information in a shared database (digital ledger), to recording transactions and tracking assets in a decentralized network, where each member maintains an exact copy of all transactions, until consensus on the validity of the transaction between clients.[8]

The block chain as a database capable of managing ever-increasing records (blocks), and is designed to preserve the data and not be able to modify it.[9]

The blockchain includes two types of blocks: **The first type;** public blockchain (without permission) Any person who has the right to view the information in the database, send the information to be recorded in the database, and participate in it remains anonymous. **The second type;** a private blockchain (with permission) is reserved for a limited number of participants, often affiliated with a company or organization, who are selected in advance, with specific criteria or official approval.[10]

If a member of the platform wants to trade cryptocurrency daily, the BLOCKCHAIN.COM wallet is best, but if you want to store it for a longer period, the wallet must be supported by a Nano Ledger device (Nano S). The platform has executed more than 100 million transactions across 140 countries quickly, securely and without intermediaries.[11]

Any form of currency that only exists digitally, that usually has no central issuing or regulating authority but instead uses a decentralized system to record transactions and

manage the issuance of new units, and that relies on cryptography to prevent counterfeiting and fraudulent transactions.

Creating a blockchain wallet is easy, through a series of specific steps: making sure to use an email with a strong password, and then following the steps that the platform presents to you. Once your wallet is created, you will be given an ID to access it, and then you can manage it in a very simple way. The security settings are the longest part of wallet management, and once you log in using the wallet ID, several icons appear that are used as needed.[12] Dashboard - Buy and Sell Bitcoin - Security Center – Settings.[13]

c) Smart contract :

Smart contract is a new term. It is an information program that seeks to implement the contract in an automatic manner without the intervention of others. This new style has appeared in the automated philosophy. The inventor of the smart contract ((Nick Szabo)) employed blockchain technology as a service for this contract, to develop a protocol that allows people to conclude secure actions without the need for a third party (The Bank), as smart contracts rely primarily on blockchain, such as (Machine Turing).[14]

The Investopedia website has defined them as self-executing contracts, programmed within the framework of a decentralized distribution network (Blockchain), whose terms and conditions regulate the relationship between the seller and the buyer without the need for the presence of a central authority (third party), as they are able to provide confidence in executing the transaction according to the terms and conditions contracting. [15] Once the conditions are met, the contract is automatically executed and sent to both regulators and auditors in order to verify the credibility of the new data.[16]

Muhammad Salmon defined it by saying: The smart contract is a special protocol, which aims to contribute to the negotiation, implementation and verification of the contract, and it is the reason why the blockchain is described as decentralized. It allows for traceable, irreversible and secure transactions, without the need for a third party.[17] He was identified by the Conscience Telegraph website ; It is a computer program that directly controls the transfer of currencies or digital assets between the parties to the contract under certain conditions, determines obligations and penalties for violation, and imposes obligations and penalties automatically, unlike traditional contracts.[18]

It is noted that smart contracts are based on the idea of peer-to-peer (if this is achieved -then this is achieved) and are followed by all users of the blockchain platform. It is difficult for

there to be an error in them, because the information is available before contracting, and this negates the possibility of unilateral amendment of contracts.[19]

It can be said that smart contracts are an information program in the form of coding on the computer by the programmer, and they are operated within the framework of a network (Blockchain) that is keen to implement them without the need for a credit intermediary, after agreeing on the fundamental issues, and this arranges the legal effects of the contract. These contracts require the general elements of the contract to be met, and they also require the availability of new electronic conditions to complete their conclusion and implementation. Such as using a computer with specific characteristics, having an account on the blockchain platform, storing and using the data and documents necessary to contract on the platform, having a balance of encrypted digital currency, reviewing the contractual process, approving it, and implementing it against the contractors.

The smart contract consists of the following: the parties to the contract, the subject of the contract, electronic digital signatures, terms of the contract, and a technical system based on decentralization.[20]

The procedures for implementing smart contracts are: [21]

- Create a smart contract on the blockchain platform, specify the conditions according to the will of the parties, program them into a protocol, and when they are fulfilled, the contract is executed automatically.
- The program verifies the implementation of the conditions. If they are met, the contract is executed automatically without the need for the intervention of an intermediary. If any condition is not met, the contract ends and is not implemented.

As for the legal nature of smart contracts, there is a side of French jurisprudence that considers them to be real contracts in the legal sense, and another side that doubts that they are not contracts, but an information program that accompanies the contract.[22] The only variable is that the paper bond has become electronic.

Under the theory of the principle of authority of will, the contracting parties are free to contract or not, and to determine the content of the contract. If she decides to contract, she is responsible for carrying out her obligations, and this is the binding force of the contract. Smart contracts are like traditional contracts and contracts concluded remotely. Blockchain technology has been employed to translate contractual wills and even automatically execute contract terms and automatically implement penalties.[23]

3. Responsibility of smart contract parties :

The Algerian legislator has regulated the electronic contract in Law No. 18-05 relating to electronic commerce, but it has not yet regulated the smart contract. Accordingly, we will determine the cases in which the responsibility of the parties to the smart contract arises under the provisions of civil law. Civil liability is the term that is used when someone commits a tort and must face the consequences.[24] The fault principle has traditionally been understood as a principle of morality, which can justify not only the imposition of liability but also the assessment of compensation. The civil liability of the parties to the smart contract is based on; Fault, damage and causation.

When one of the parties neglects or refuses to send necessary information related to the contract, or commits an error when expressing his will to the programmer, compensation for damage is based on contractual liability.[25] This is in accordance with Article 107 of the Algerian Civil Code, that is, in application of the principle of good faith in implementing the contract, including the obligation to inform in a fair and transparent manner.

When one of the contracting parties is in a privileged position because of his prior knowledge of certain information about the contract (lawyer, economic assistant) or because he has access to the information without the other contracting party. Here, the superior party is imposed on the principle of obligation to inform, which was approved by the Algerian legislator in the stage prior to concluding the contract. In accordance with Article 352 of the Algerian Civil Code, and Article 17 of Law N° 09-03 relating to consumer protection and suppression of fraud.

As an example of the bad transmission of the will to contract by one of the parties: The contractor neglected to transfer basic information about the contract to the programmer when preparing the smart contract to be concluded. The contracting parties are obligated to clearly express their will to the programmer.[26] Expression of will can be verbally, in writing, by pointing, or by taking a specific position, t is permissible to express will implicitly.[27]

4. Responsibility of the intervenor in the smart contract :

The programmer and reviewer intervene during the preparation of the smart contract, The programmer translates the terms of the smart contract into encrypted digital codes. He will be held responsible if the damage results from a coding error. As for the reviewer, he verifies the validity of the relationship between the parties and the encryption established by the programmer. He bears responsibility if an error occurs in verifying the validity of this process.

a) Responsibility of the smart contract programmer :

In addition to the possibility of bad information about the terms of the contract to the programmer, The bad will of the parties to the smart contract is conceivable, and the only hypothesis in which we can consider the smart contract as a robot is if the technology makes the blockchain platform completely independent in searching for the information required to set up the contract intelligently; No broker would have to pre-program the contract, but this smart technology does not exist yet.[28]

If the hypothesis is true, respecting the will of the contractors will not have an impact on the preparation and operation of the smart contract. Without the consent of the contracting parties, the contract is not valid, and therefore the smart contract is not a robot, and its legal system is not comparable to the provisions related to smart machines (Robot).[29]

The programmer is considered responsible for any error in the poor translation of the will of the contracting parties, and in order for him to be relieved of responsibility, evidence must be presented that denies this assumption.[30]

In smart contracts, the parties express their contractual will and transmit it to the programmer, who translates it into a digital program. If the contracting parties are not responsible for protecting the smart contract, the blockchain platform assumes this role, because it has the authority to prepare and execute the smart contract, by receiving data and verifying the validity of transactions.[31]

Therefore, it is difficult to determine the identity of the participants in the public blockchain, because they are multiple and anonymous, and this makes it impossible to attribute responsibility to anyone, and it can be said that the digital links on the public blockchain platform cannot be considered responsible for protecting the smart contract. The question of who is responsible for protecting the smart contract remains unanswered. If the users of the blockchain are not responsible, are the intervenors responsible for protecting the smart contract setup?

b) Responsibility of the smart contract reviewer :

The parties to the smart contract may request that the contract be reviewed to ensure that it is translated correctly. The reviewer must verify that the encrypted digital codes designed by the programmer are compatible with what the parties desire. If he violates his obligation, his contractual responsibility falls. But is his commitment to achieving a result or to exerting care?

The reviewer's responsibility arises when he does not commit to exercising diligence in verifying the validity of the smart contract. The obligation to exercise diligence does not aim to achieve a specific result, but rather to exercise only the necessary diligence, whether the purposed result is achieved or not.[32] The reviewer is obligated to review and examine the encrypted digital codes that the programmer has prepared to express the true will of the contracting parties, without guaranteeing the implementation of the contract.[33] According to the text of the article 172 of the Algerian Civil Code.

And he must also make an honest effort and respect the scientific principles for that. If it is proven that he did not fulfill his obligation to audit with the required care, this is proof of his contractual error, which requires proof of damage for compensation, unless he proves the existence of a foreign reason for his failure to carry out his obligation, then his contractual responsibility does not exist. If an error is found in the smart contract, an alarm is triggered and a notification of an error is sent so that the transaction does not occur.[34]

In the future, smart contracts prepared by specialized companies that are actually present on the blockchain platform can be used, and this avoids them resorting to an auditor to limit errors when preparing them. "Rozario et Thomas" came up with the idea of creating an audited smart contract to reduce the occurrence of errors in the smart contract.[35]

5. CONCLUSION :

At the conclusion of this research on the responsibility of smart contract parties in Algerian legislation, there are results and recommendations for understanding this topic.

A. Results :

- The decentralized nature of the blockchain platform makes it transparent, secure, and private.
- The smart contract does not require the physical presence of the contracting parties, as the contract council is virtual, and it does not require a traditional credit intermediary (self-execution).
- Each Party must promptly execute all documents and do all such acts and things as is necessary to implement and give full effect to the provisions of the smart contract.
- Implementation of the smart contract is a duty (inevitability of implementation) Failure to complete the smart contract will be automatically terminated.
- Smart contracts are encrypted digital technology that facilitates the conclusion and execution of a contract.
- There are many problems when implementing smart contracts, especially proof.

B. Recommendations :

- ✓ Good preparation for applying blockchain technology in Algeria, We also call on the Algerian legislator to develop a special law that provides a secure environment for smart contracts.
- ✓ Cyber security, a variety of cyber security solutions are required to mitigate cyber risk.
- ✓ Technological and legal awareness and preparing training courses for everyone who wants to deal in the field of smart contracts.

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