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The Legality and Effectiveness of Smart Contracts, As Well As Its Impact on Traditional Concepts of Contract Law

Karwan Dhahir Saber[1] and Rebin Ali Mohammed Ameen[2]
[1]Business and Management Department, Faculty of Administrative Sciences and Economics
Tishk International University,Erbil, Iraq
[2]Director-General of Administrative and Financial Affairs,
Ministry of Natural Resources, Erbil, Iraq
Correspondence: karwan.uk@tiu.edu.iq - rebin.zangana@mnr.gov.krd
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Abstract

Although, in the world of law, smart contracts are still a new concept, they have already given rise to many possibilities. common examinations of smart contracts, a modern innovation aimed at displacing traditional contract law. Some claim that smart contracts will completely replace traditional contracts while others claim that they will spell the end of contract law. This research investigates the role of "Smart Contracts," a recently invented technology. What sets them apart is the use of computers to automate the execution of these legal agreements. This article further examines how smart contracts differ from traditional contracts from a legal aspect. It also explains the differences between strong and weak smart contracts, as well as how smart contracts work and fit into current contract law about revocation and modification. Since Smart Contracts are merely a new proactive self-help that politicians and judges should not restrict.

While some extreme examples of strong smart contracts may require regulation, courts and legislators should foster an environment in which smart contracts are considered separate types of contracts. As a result, a technique has been devised for dealing with any concerns that may arise because of the Smart Contract. For legal purposes, researchers distinguish between traditional contracts and smart contracts based on their strong and weak smart contracts. The study relied on an examination of already published information as well as any related papers obtained from public libraries, websites, and data from previously completed surveys, among other sources. Finally, based on comparative research, the study came to some plausible findings about the legality of Smart Contracts and made some recommendations.

Keywords: Smart Contract, Legality, Technology, Development, Traditional Contract

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1. Introduction

The term "smart contracts" refers to computer code that, when placed on a blockchain-based platform, automatically executes all or parts of an agreement. As will be mentioned further below, the code may either serve as the exclusive representation of the parties' agreement or it may supplement a standard text-based contract by carrying out specific clauses like fund transfer and other activities. Because the code is distributed among several blockchain nodes, it receives help from the immutability, permanence, and security that blockchains provide. The code is, in fact, performed as each new block is added to the blockchain due to this replication. The code will run the transaction if the parties have shown by starting a transaction that specific criteria have been met. The function would not act if such a transaction had not been started. Most smart contracts are created in one of the programming languages like Solidity that is specifically made for creating such computer applications. (Altay, H., & Motawa, I. 2020).

Currently, a smart contract requires precise and measurable input parameters and execution stages. In other words, carry out step "y" if "x" happens. As a result, the actual functions that smart contracts carry out are basic, such as automatically transferring a particular amount of cryptocurrency from one party to another's wallet when certain conditions are met. Smart contracts will get more complex and be able to handle more complex transactions as blockchain use grows and more assets are tokenized or "on chain." In fact, developers are already connecting different transaction phases to create smart contracts that are more complicated. (Woebbeking, M. K. 2019). Nevertheless, it will be many years before code can decide on more arbitrary legal standards, such as whether a party made commercially reasonable efforts or whether an indemnifications clause needs to be activated and the indemnity paid. (Liu, Y., & Huang, J. 2019)

Smart contracts are now ideally adapted to automate two types of "transactions" that are common in many contracts: the payment of funds upon specific triggering events and the application of financial penalties if specific aim conditions are not satisfied. The costs associated with executing and enforcing contracts are reduced since, once the smart contract has been launched and is operational, no human intervention is needed, whether through a trustworthy escrow holder or even the legal system. For example, the buyers would lower their account payable costs while sellers would receive speedier payment and no longer be needed to engage in dunning. This might influence the need for working capital and ease financial operations for both parties. In terms of enforcement, a smart contract may be set up to block access to an internet-connected item if a payment is not made. (Raskin, M. (2016). For instance, if payment was not made, access to some content might be at once prohibited. However, while discussing the technological features of smart contracts, it is important to keep in mind the pertinent legal concerns. The evolution and innovation of traditional contracts is what smart contracts are. Electronically created smart contracts automatically carry out agreements using software that is precisely encoded on the Blockchain. As a result, the paper addresses the issues of how to analyze the legal ramifications of smart contracts and how to create smart contracts that follow the law.

2. Literature Review

Although the first contracts date back thousands of years, many of the most significant innovations in contracting history have occurred in the recent century. Contracts were typically negotiated equitably between parties with equal bargaining strength, or at agreed fixed negotiations (Poitras, 2009). Though, the concept of self-help has been around for a long time. Individuals often act before turning to the formal legal system, whether it is erecting barriers to keep trespassers off their property or filing a lawsuit. A contract is defined as a promise between two or more parties. This promise is enforceable by law with the purpose of taking an action or not to take. Every person who agrees to the agreement of the contract is known as a part of the contract. The two main part of the contract is the offer and the acceptance (Dam, 1999). The party that makes the agreement is known as the offeror and the part that accepts or does not accept the offer is known as the offeree.

However, when contract terms were standardized, national and international mass-market contracting became possible. This simpler contract technique reduced human involvement in the negotiation process, cutting transaction costs and causing a shift in the bargaining process. Contract law must adapt to these new conditions as the information society evolves (Woebbeking, 2019). A group of researchers has been developing computer technologies that bring self-help to the arena of contracts during the last few years. For example, Nick Szabo produced the term "Smart Contract" in 1997, long before Bitcoin. To put it another way, he wanted to store contracts on a distributed ledger. These new contracts are referred to as "Smart Contracts". Their goal is to make it easier for contracting parties to enforce their agreements in an advanced way of letting two or more parties come to an agreement (Raskin, 2016).

Since smart contracts are agreements that are executed automatically, usually by computers. These agreements are designed to ensure that performance is satisfied without the need for litigation. The basic vending machine is an example of a smart contract; if the machine is working properly and money is inserted into it, a contract for sale will be at once fulfilled. This is a smart contract in action. There would be no legal difficulties if the machine dispensed soft drinks; however, there would be legal issues if the machine dispensed heroin. Should vending machines be banned because they have the potential to be exploited for illegal purposes? Should they be regulated after they have been used? Certain conditions will need the use of smart contracts by the law, and the aim of this essay is to investigate their legality and prove that smart contracts can easily be implemented into the existing contract law in further below. Traditional legal analysis can aid in the development of simple standards to serve as a framework for this complex occurrence, and modern technology does not need unique jurisprudence (Christidis, & Devetsikiotis, 2016).

Furthermore, under this sort of contract, all necessary transaction licenses are obtained without intervention. All your digital money transactions will be made easier with this digital protocol. These agreements can also be used to track many transactions. To have a better understanding of how smart contracts function, consider this example. Consider the following case: You may like

to sell your apartment, but you are aware that it will take a considerable period due to the paperwork needed. One of these organizations can handle the entirety of the apartment selling process on your behalf. These employees handle all your marketing and administrative efforts. After these steps are finished, both the buyer and seller must pay a part of the agency's commission. The vendor may incur a loss due to the interest payment. This was also seen in a variety of financial markets, prompting the construction of a smart contract capable of resolving the issue in a matter of minutes by executing the processes online.

The smart contract, on the other hand, does not differ significantly from a typical contract in the real world; the primary distinction is that smart contracts are entirely digital. A smart contract is a little computer program that is stored within a Bloch chain (Szabo, (1997). These contracts allow you to put your money in a safe place and only release it when certain criteria are met. It may deploy a wide range of banking products using this method without the requirement for a central authority. Smart contracts might handle things like automatic payments and investment items. Therefore, Smart contracts are the next step in the evolution of the contractual contract from a set of common law terms and conditions to a set of conditional statements governed by a programming language and blockchain technology principles (Webber, 2019).

3. Methodology

This section supplies an overview of the comparative methods and approaches that are essential to the current inquiry. The method primarily consists of a qualitative study that gathers data using secondary (document analysis) methodologies. Examples of secondary sources include reviews of the relevant literature, periodicals, journals, websites, and publications that are closely related to the topic. An observational research design was adopted in the current study. When the researcher has no or little influence over the occurrence, this approach uses a comparative strategy to get a conclusion. In this paper, several types of solutions to the legality and efficacy of smart contracts, as well as their influence on traditional ideas of contract law, are examined using a comparative method. For example, if a researcher tries to evaluate a single legal system, it may be challenging to examine the norms of smart contact law. In some areas of law, researchers may have to investigate the law of other legal systems. Using the research strategy, a conclusion has been made.

4. The Legal Nature of Smart Contracts

The term “Smart contract” refers to computer codes that implement all or parts of the transaction stages of an oral or written agreement between two or more parties. The code can either be the only appearance of the parties’ agreement (code-only smart contracts) or it can supplement a traditional natural language based on a contract by carrying specific provisions of that contract known as (ancillary smarts contract)The main distinction between smart contract and natural language contract is how they handle performance; natural language contract typically rely on the parties to enforce the contract’s obligations, however, smart contracts carry out the parties’

obligations automatically once activated. By dropping the need for human intervention, smart contracts have the potential to lower contract performance and enforcement costs since the implementation is automated (Levi, 2018). This automatic execution is often carried out using a computer running code that has translated legal jargon (special coded) into an executable (program run by computer) program. This program has authority over the physical or digital objects needed for execution (Raskin, 2019). The input limits and execution process for a smart contract must be specific. More specifically, in step "A" occurs then step "Y" is performed. As an outcome, the real task that smart contracts perform is simple. That task includes moving a certain amount of cryptocurrency (digital currency) from one party's wallet to another when certain standards are met (Richard, 2017). Moreover, developers are already connecting multiple transaction steps to create more complex smart contracts. We are many years away from the code being able to figure out more subjective legally developed standards (Lipton,2018). Currently, smarts contracts are the most suitable to automatically perform two main types of "transactions" that are found in many contracts that include.

1. Making sure the payment of money is happening upon certain triggering events.
2. Imposing financial consequences if certain aim conditions are not satisfied (Levi, 2018).
3. Smart contracts, such as digital currency protocols, allow for online payment while supporting the enforceability, confidentiality, and divisibility of paper money. When looking at digital cash protocols in the context of smart contract design, they can be used for more than just creating money. The implementation is a complete customer–seller transaction that causes more than just a digital cash protocol; it also needs a protocol that guarantees that the product will be delivered if payment is made through the system and vice versa (Bundesbank, 2020).

Nowadays, commercial systems employ a variety of strategies to carry out this, such as certifying mail, face-to-face interactions, relying on credit history and collection agencies to grant credit, and so on. Many commercial transactions can receive help from smart contracts since they can reduce fraud enforcement expenses. The semantics of the transaction are communicated to the parties involved via the smart contract, which has been missed by standard EDI. There is lots of potential in smart contracts for "smart fine print," or software activities that are not visible to a transaction's other parties. Customers are not told if their names are connected to their purchases in a database by POS equipment at grocery stores, for example. Even though thousands of such transactions have been executed right under their noses, the clerks have no knowledge (Szabo, 1999).

Thus, through the hidden action of the software, the customer is giving away information that they may consider valuable or confidential, but the contract has been drafted, and the transaction has been designed, in such a way that those important aspects of the transaction are hidden from the customer. There is lots of potential in smart contracts for "smart fine print," or software actions that are not visible to the contracting parties. Customers are not told if their names are connected to their purchases in a database by POS equipment at grocery stores, for example. Even though thousands of such transactions have been executed right under their noses, the clerks have no

knowledge. Thus, through the concealed activity of the program, the client is giving away information that they may consider valuable or confidential, but the contract has been crafted, and. the transaction has been constructed so that those crucial portions of the transaction are hidden from the consumer (Szabo, 1994).

4. How the Traditional Contract Formation

Traditional contract law sets up norms and principles governing the voluntary assumption of responsibilities, regulating the execution of such obligations, and imposing penalties for not executing. The traditional contract can be defined as an agreement with precise terms between two or more parties in which one piece of value is exchanged for another. Contracts may be legally binding in theory, but this is contingent on the nature of the document (oral or written) and whether it is enforceable by law (Altay, & Motawa, 2020). For example, unlike a contract of employment, which legally binds both parties, a contract between friends does not have to be legally binding. A traditional contract has an offer and acceptance, some of the principles governing offer and acceptance are intended to apply only when there is no sign of a contrary purpose. According to German law, an offeror cannot withdraw an offer until the time showed in the offer has passed, or until a reasonable time has gone if no time is specified, although this rule is overruled by a statement in the offer that the offer is reversible (Goddard, & Ormand, 2011). Under Anglo-American common law, when parties contract by letter, acceptance occurs when the letter is issued, but the offeror can say that no contract will be formed until the acceptance is received. These rules fill in the gaps when the parties have not been specific in their discussions for several reasons.
Another purpose of offer and acceptance standards is to aid the parties in recognizing when their discussions have gone from the exploratory to the commitment stage. The terms "offer" and "acceptance" are a touch formal; they imply that discussions go ahead in phases, which is not always true. However, they help the parties discern between negotiation and commitment. The terms "offer" and "acceptance" have come to mean the embrace of responsibilities (Scott,1980). A settlement mediated agreement is a contract, according to the prevalent – in theory and case law – perspective and is thus regulated by ordinary contract law principles. It should be noted that when certain contractual features are incorporated, a settlement agreement is considered a contract. Offer, acceptance, and consideration are the three basic parts of a contract. If these minimal criteria are carried out, the court concludes that there has been a "meeting of the minds" and that the agreement can be recognized as an enforceable contract. This means that if a disagreement arises over the implementation of mediated agreements, courts will apply standard contract law principles to figure out the reality behind each agreement. Thus, traditional contract law distills essential interests that apply in the context of mediation, as well as in other contract contexts, by supplying a stable framework for enforcing correctly achieved agreements while refusing to enforce defective agreements (Goetz, & Scott, 1980).

5. Challenges in the Potential Adoption of Smart Contracts in the following ways:

A standard contract can take anywhere from one to several days to prepare, draft, and formulate, depending on the quality of legal services and the desire of the contracting parties. When using a ready-made contract platform, the time for smart contracts can be shortened to a few minutes. Ethereum, Hyperledger Fabric, and others are examples of such platforms. Traditional contracts bind the parties to pay the amounts due on time - but only manually, and with added organizational work on their part. Payments in smart contracts are automated and performed automatically when the agreed-upon and documented conditions are met (Richard, 2017).

5.1 The total cost of the procedure

In theory, smart contracts do not require the involvement of intermediaries or third parties, hence their cost is close to nothing. This choice, for better or worse, is still a possibility in the unknown future, and lawyers' involvement in guaranteeing the contract's conformity with existing legal rules is critical (Howell, & Potgieter, 2021). Smart contracts, with or without their aid, are not only speedier and more practical for negotiating parties, but also much less expensive.

5.2 Security and protection of data

Unlike a traditional contract, which is just a piece of paper, a smart contract can give qualitatively new levels of security and privacy. While the cryptographic protection provided by Blockchain technology gives an exceptional level of anonymity, especially if the contract is recorded on a private rather than a public ledger. In addition to the demand for physical attendance, it is becoming increasingly vital to undertake distant acts without jeopardizing their trustworthiness, given the dynamics of our ever-changing world. A smart contract is signed with an electronic signature, which drops the necessity for both parties to be physically present, which is a disadvantage that regular contracts cannot overcome (Elisa, & Cao, 2018).

5.3 Smart Contracts: Archiving and Advantages

Traditional contracts require time, space, administration, and oversight to begin with. Smart contracts, on the other hand, happen automatically, safely, and without wasting time or natural resources. Smart contracts have certain disadvantages when compared to regular contracts, such as lower contract term flexibility and troublesome "readability" for people without specific backgrounds and certifications (Kuperberg, & Jeschke, 2019). Fortunately, both concerns may be readily remedied with the help of an experienced lawyer who is aware of the intricacies of smart contracting while staying within the bounds of existing legal requirements.

Smart contracts clarify the terms of the agreement for the parties involved. The contract terms are defined in code (rather than legalese) and are accessible through a predetermined data source. On the blockchain, identical, dynamic copies of the contract are stored. Conforming to a 'consensus algorithm,' the computers of all participants verify modifications to the contract. This resolves the version-control issues. Contracting parties no longer must run document-comparison tools to avoid

subtle, detrimental alterations to the conditions made by other parties. Contracting parties can "see" and "follow" the contract's status, potentially in real-time upon the fulfillment of a condition, the contract is instantly performed. Because smart contracts are digital and automated, there is no paperwork to deal with, and no time was wasted fixing errors that often occur when filling out paperwork by hand (Richard, 2017). Due to the absence of a third party and the distribution of encrypted transaction records among participants, there is no need to worry about information being altered for personal gain. Blockchain transaction records are particularly difficult to attack since they are encrypted (Xu, & Chi, 2021). Moreover, because each item on a distributed ledger is linked to the entries that came before and after it, hackers would need to modify the entire chain to change a single record (Pacific, 2021). Smart contracts reduce the need for intermediaries in the execution of transactions, as well as the time and cost delays that result from their use.

6. Are Smart Contracts Legally Enforceable?

For a smart contract to be legally enforceable, it must include the fundamental elements of a valid contract, as figured out by the applicable authority. In general, an offer, an acceptance, a valid consideration, the intent to create legal relations and clarity). Consequently, there is no reason, in principle, a smart contract cannot be a legal contract, just as legally binding contracts can be made electronically through online apps. Consequently, even though many fundamental concepts apply uniformly across state lines and there has been a push to harmonize state laws, any conclusions about smart contracts must be qualified by the possibility that states may hold divergent perspectives. A discussion of the enforceability of smart contracts must begin with the distinction between an agreement and a contract. Most states accept that although two parties can engage in a variety of "agreements," a contract signifies that the agreement is legally binding and enforceable in a court of law. State courts typically examine whether the common law conditions of offer, acceptance, and consideration are met to assess enforceability as mentioned above (Chong, & Chi, (2021). Surely, supplementary smart contracts can satisfy these fundamental requirements.

7. Conclusions

This study conducted a mixed-methods analysis of the deployment of smart contracts across multiple industries to figure out their status, benefits, and prospective procurement advantages as well as their distinction from traditional contracts. According to the research findings, the current development of smart contracts is still in its immaturity. However, smart contracts have the potential for widespread adoption across industries, particularly in using each industry's strengths or innovations to overcome inefficient processes in current conventional procurement systems. Smart contracts are becoming increasingly common and simple to design, and they are being linked to a large array of financial and business processes.

A variety of individuals want smart contracts today, and they play a significant role in the construction of contracts with several benefits, including autonomy and cost savings, backup and

security, speed, and precision. Examining the enforceability of smart contracts must begin by distinguishing between an agreement and a "contract." States often recognize that, while two parties can enter a variety of "agreements," a contract shows that the agreement is legally binding and enforceable in court. State courts figure out enforceability based on whether the common law conditions of offer, acceptance, and consideration are satisfied. Certainly, more intelligent contracts can achieve these fundamental goals.

As a result, there is little doubt that the implementation and expansion of smart contracts is the next step in innovation, as they can at once contribute to the elimination of billions of dollars in indirect costs while also enhancing the system's overall efficiency. Although smart contracts must be enhanced before they can be widely employed in complicated business interactions for production reasons, they have the effect of significantly altering the reward and incentive structure that will affect future contracting. Therefore, while considering smart contracts, it is vital to look beyond the application of conventional ideas and structures to this modern technology. Smart contracts have the potential to change international commerce and trade by speeding up transactions, decreasing bureaucracy, and lowering costs. Even if smart contracts' legal and technological limitations supply a variety of challenges, it is still debatable whether the technology is suited for managing complicated transactions.

Even though the Bitcoin blockchain guarantees immutability and security, it cannot conduct complex transactions. It is also crucial to note that not all contractual obligations can be encoded in computer code. These limits the types of transactions that smart contracts could potentially oversee. This is especially true for contracts based on legal concepts such as "reasonability" or "best efforts." Consequently, the traditional contract is not endangered. Even though smart contracts can ease some transactions, they are not ideal for all transactions. Moreover, they have the potential to produce legal problems and conflicts. Any party entering a smart contract should consult with an experienced attorney to review the contract's underlying mechanics, as well as their rights and remedies in case of a legal disagreement.

8. Significance of the Study and Future Implications

The traditional contracts be replaced with smart contracts, which are digital contracts that execute themselves when certain conditions are satisfied. Additionally, Smart contracts are immutable, meaning they cannot be altered after their start, and they are traceable since they are stored on a blockchain. In comparison to traditional contracts, these "new" contracts offer many advantages. Smart contracts, for example, do not require the approval of a third party to certify their validity. This saves money and time for all parties engaged in a particular transaction. Consequently, it is recommended. Since Smart contracts are less expensive than traditional contracts and you can easily automatically pay, also it is easier for the party to sign the contract digitally. The prevalence of smart contracts is on the rise. They are cost-effective, safe, traceable, and legal, making them attractive to a variety of enterprises. As a future recommendation, businesses prefer smart contracts to traditional ones. Every business will need a smart contract in the future since they are designed

to make business and trade between anonymous and found parties as simple as possible, sometimes without the need for an intermediary. Therefore, it is suggested that the entire government use this modern technology. A smart contract reduces the formality and costs of traditional procedures while keeping their validity and legitimacy. Smart contracts can be used for different purposes that including the government voting system. Therefore, the legal system should recognize this contract advancement. Thus, all government sectors are-recommended use of smart contracts contributes to the development of conventional financial services and formally legalizing smart contracts. Finally, when agreeing to and implementing a smart contract, it is crucial to consider cybersecurity considerations and thoroughly know the underlying code. Once launched, a smart contract is self-executing and tamper-proof, making it extremely difficult for a single individual to make corrections; defects in the code that could expose it to cyber-security threats must therefore be thoroughly examined.

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