



# A LEGAL PROGNOSIS OF CONTRACT LAW IN THE BLOCKCHAIN ERA

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## ABSTRACT

The history of law of contract indicates how human relationships change, its impact on trade and technology. The evolution of contract law has brought about implied contracts to written contracts that are enforced in a court of law. Old fashioned contractual commitments have been based on human interpretation and institutional implementation. This type of traditional concept is totally different with the nature of modern blockchain technology and smart contracts. Self-executing contract Smart is a way to make contracts efficient as well as more transparent and less dependent on mediators. Simultaneously with their rigidity and regulatory unpredictability creates complicated legal questions. This paper will critically pursue the migration of contractual jurisprudence in the blockchain age, explore the legal basis and issues and problems facing by smart contracts and scrutinize its repercussions on established principles contract like consent, enforceability, jurisdiction and remedies. It also imply that need to embrace law and hybrid contractual forms that incorporate technological innovation and existing law protection to ensure that it promotes automation as opposed to eroding the human values on which the law of contract is based.

**KEYWORDS:** Smart Contract, Blockchain Era, Contractual Jurisprudence, Traditional Contracts and Hybrid Contracts

## INTRODUCTION

It is true that the renowned Greek philosopher Aristotle, in the 4<sup>th</sup> century, said 'A man is an animal of social kind. He further claimed that a person who is unsocial is naturally and not accidentally so, either under our notice or above human'. One can easily infer with the quote above where the ancient philosopher Aristotle has stated that relationships established between man and society are the foundation upon which a contract can be established. The relationship between man and the society is unavoidable. This theory was also promoted by John Locke but it was later to be known as the 'Social Contract Theory'.

The development of the contract law in ancient and Roman eras has changed paradigmatically into the blockchain era or the future time. Traditional contracts are significantly valid in the legal system and the natural language. Being the terms that are articulated using human language, the concept of reasonableness and fairness have a natural flexibility in its interpretation by the judges in case of a conflict.

This flexibility, however, has a price: in case a violation is established, such enforcement is usually expensive, time-intensive and requires other parties to intervene like a bank, bailiff or lawyers, to make sure that money or property is actually being transferred between two parties. The trend of the transition of the traditional or oral based contracts towards the smart contracts of the modern day era is indicative of substantial changes in the law of contracts. Leaving aside the convention of contract enforcement, technology can offer a fundamental change of the way contracts are carried out. Smart contracts offer the platform upon which just that can be done.

The cryptographer Nick Szabo, who conducted a study of digital currency, published an article on smart contracts as early as 1995, in the magazine Extropy in early 1996. He is regarded as the founder of the idea of smart contracts as a computerized transactional protocol, which implements the conditions of a contract. He also characterised a contract as a combination of promises which are mutually assented in a meeting of the minds, which is the conventional method of formalising a relationship. These kinds of contracts are one of the pillars of a free market economy and can be applicable in business relations, marriages and politics.

This is a type of research article that examines the paradigm shift in the contractual jurisprudence whereby the automated smart contracts that are based on blockchain technology, substitute the traditional contracts that are informed by the common law traditions. It also explores the legal aspects of smart contracts; the legal and practical issues of adoption, and also recommends the necessity of legal and hybrid contract models being adaptable.

## SMART CONTRACTS-- legal implications and foundations of blockchain

Some of the tools of trust that have evolved over time to facilitate trade and protect the buyers and sellers include banks, paper money and mint coins. The use of innovations such as the mobile devices, the Internet, phones and credit cards has increased the efficiency with which transactions are conducted and helped the development of the global economy. However due to the issue with the current systems of payment, including prolonged payment periods, intermediaries, fraud and cyber-attacks, more effective and safe mechanism are required.

In this regard trust is still the main issue of any form of trade. Traditionally, the legal systems and financial institutions have played the role of middle man so as to maintain the reliability, accountability and enforcement. With transactions getting quicker and more internationalized in essence, reliance on centralized authorities has revealed vulnerabilities of structure such as high transaction costs and systemic weaknesses. It is these shortcomings that have continued to elicit a quest into finding alternative mechanisms that can guarantee trust, transparency and security without undue institutional dependence.

Blockchain is a disruptive innovation that will transform the manner in which we perceive the digital space. It is a distributed registry technology that is decentralized and records and verifies transactions between numerous platforms safely. In a recently passed Arizona law, a blockchain is a distributed ledger technology that relies upon a distributed, decentralized, distributed and replicated ledger, which can be public or private, permission or permission less, or tokenized crypto economic or token less. The information about the ledger is secured using cryptography, is unchanging and auditable and offers an uncensored truth. In simple terms a smart contract is an agreement that can execute itself, the terms of which will be stored in a secure, decentralized, and immutable registry and coded directly into computer code. The contract eliminates the need of human enforcement, intermediaries (such as lawyers, banks or notaries) and trust by automatically carrying out the required actions once the required conditions are met.

The autonomy, self-sufficiency and decentralization of the Blockchain technology make smart contracts digital contracts between parties which are automatically executed by code without human supervision. They do not resemble the traditional contracts, as they do not demand trust and are followed in an algorithmic manner. The main difference between a smart contract and a traditional contract is that the former involves the use of complicated block chains and is a self-executing computer program that cannot be changed by third parties. The latter however, is dependent on the implementation of the agreed legal terms of the parties, which does not exclude any disputes and may be altered at any time and upon their consent.

It is also worth remembering that smart contracts are not only digital agreements (many of which rely on trusted authorities to reach a consensus and execute them) but also do not involve artificial intelligence (they are more robotic, conversely the converse) and the fact that a smart contract is not a lawyer who thinks or otherwise, knows anything. This may be something that an artificial intelligence can do in the future.

Smart contracts are however, associated with several issues, including the need to introduce new laws and regulations and their impact on the contract laws and the social contract. Smart contracts may be applied in various scenarios, e.g., pledge platforms, inheritance gifts, and automatic payment of betting. Though they have to be modified to some extent because of their widespread use they may offer valuable advantages compared to traditional contracts. Smart contract architecture

is constructed on several fundamental components, including code, blockchain, oracle and nodes.

The introduction of smart contracts based on blockchain not only represents a new step toward making the contract enforcement more responsive but also pre-emptive but also questions the fundamentals of the centuries-old theory of a contract. To fill the gap between machine executable code and human readable purpose, now professionals are supposed to write Hybrid agreements. This will ensure that the broad legal framework remains intact to provide a solution in the circumstance of a database failure or coding error of an "Oracle" data error. Moreover, the blockchain age demands a reassessment of jurisdictional sovereignty; since a smart contract is based on a decentralised registry but not on a physical location, the standard Choice of Law rules is facing an existential quandary. Thus instead of overturning the human soul, the future of contract law is in creating a new, robust and global legal framework where automation helps cut transaction costs, and the introduction of a so-called human safety valve in the form of decentralised arbitration and standardised digital messages.

### SMART CONTRACTS TRIAL: THE FUTURE CHALLENGES

There are numerous benefits of smart contracts yet they possess weaknesses. The fact is that implementation of the application of smart contracts in the daily transactions is likely to raise both operational and legal issues.

To begin with, smart contracts can be attacked. The bugs in the code obtained by hackers can be also used in addition to the exploitation of the vulnerabilities of the underlying platform. The other major problem is that the smart contract is irrevocable and once it is in the blockchain, it cannot be changed. In that case, one would not be able to salvage the contract in case a security loophole occurred, e.g., the DAO attack. A major issue is the issue of privacy of data. The privacy of the data would be hard to ensure due to the transparent character of blockchain technology. In case data were to be stored in a public blockchain, there would be a possibility of manipulation of this data. This manipulation would interfere with the contract. Also it would be possible to violate laws that are related to data protection.

Three significant regulatory challenges in three key fields of law during the process of integrating smart contracts and the first one is that under the prism of corporate law regulation, these smart contracts must be created so that they do not infringe the fundamental shareholder rights, such as dividends and voting and that the officers and directors do not lose their obligation to the company. Any logical inconsistency of these contracts may occur and in case it occurs, there may be significant legal ramifications to the company. Besides that the fact is that such smart contracts do not require such standard practices as the annual meeting and board approval and thus their implementation may be in conflict with the standard regulation processes of many jurisdictions.

Secondly, regulations on data protection and privacy are a big

impediment. It can be explained by the fact that blockchain technology transparency and immutability tend to conflict concerning confidential business information and shareholders. This involves having proper encryption and control measures to ensure that the confidentiality needed is upheld and that the information does not get into the hands of the masses. This becomes more salient in the GDPR context regarding the so-called right to be forgotten, a right of the individuals to ask to have their personal data erased, which blockchain immutable records are obstructing, on the contrary.

Last but not the least, the fact that smart contract transactions are decentralized and anonymous makes it even harder to adhere to normal procedures of Know Your Customer and Anti-Money Laundering regulations. To address this issue, the concerned businesses will either need to rely on reliable third-party services or use techniques in their smart contract code to make sure that they do not promote any illegal financial operations to begin with.

### CASE STUDY

Businesses that use Smart contracts: A number of big business have started to use smart contracts, with most of such businesses being in the banking sector, real estate sector and the supply chain management. In order to enhance productivity and reduce fraud as an example, Deutsche Bank had investigated the potential application of smart contracts and blockchain solutions to trade finance. In agreement with the above statement, Ever ledger is also relying on the smart contracts which use blockchain in the industry and this ensures that the ownership and source of diamonds cannot be compromised and that the traceability of the supply chain is maximized.

### Real World Use Cases:

In the real estate sector, the smart contracts are used to facilitate the exchange of ownership of house when specified requirements are met. Also, blockchain-based voting systems, including those deployed in the e-residency programme in Estonia, have helped to make voting more transparent and secure to citizens and other stakeholders to vote.

### CONCLUSION

Smart contracts and blockchain technology represent a radical change in how trust, enforcement and certainty in transactions are attained in commercial relationships. Using cryptographic authentications and decentralized consensus, smart contracts provide quicker processing speed, lower transaction expenses, improved transparency, and heightened security compared to the use of intermediaries between parties. Their self-destructive character questions the classical principles of the contract law, especially notions of intention, performance, breach, jurisdiction and remedies.

Nevertheless, even though smart contracts are technically efficient, they cannot function in absolute autonomy of the legal systems. Coding errors, oracle breakdowns, asymmetry of bargaining power, regulatory compliance and dispute settlement issues indicate that human intervention and legal intervention are still required. The development of hybrid

contracts has been an attempt to smooth out the integration of machine readable code and human readable legal intent to ensure that the requirements of a contract are enforceable under existing legal systems.

Instead of becoming irrelevant to the traditional contract law, blockchain-based smart contracts force its development. The future of contractual governance is to create a legal architecture that is balanced in terms of automation and accountability, decentralized and regulated, and efficient and fair. In this respect, smart contracts cannot be perceived as an alternative to the rule of law but rather as an instrument of technology, which, when duly controlled, can improve trust, certainty and fairness in international business dealings.

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