The Indian Journal for Research in Law and Management

Open Access Law Journal – Copyright © 2025

Editor-in-Chief – Dr. Muktai Deb Chavan; Publisher – Alden Vas; ISSN: 2583-9896

SMART CONTRACTS AND THE LAW: ENFORCEABILITY AND REGULATORY CHALLENGES OF SMART CONTRACTS

~ Raj Jaiswal

Introduction

Blockchain technology has raised serious questions for traditional wine law, as smart contracts prove to be one of the most radical departures from common contract law. Smart contracts are one of the most revolutionary aspects of blockchain tech and may very well supplant traditional contracts in the digital age. With the emergence of cryptocurrencies, DeFi, and NFTs, smart contracts are going to have a decisive importance for time to come. We will delve into what smart contracts are, how they work, the legal aspects and the positions taken by various countries in what follows, giving readers an insightful glimpse into what all this means for professionals and individuals seeking to survive in this new world.

What is a Smart Contract?

In the 1990s, computer scientist Nick Szabo was the first to conceive of a smart contract, which is basically a legally enforceable contract with the terms delineated in the lines of code. Unlike traditional contracts, which require a level of human interpretation and enforcement, smart contract use technology, in particular, blockchain, to automatically enforce the terms of an agreement when a set of predetermined conditions is fulfilled. The best-known platform is Ethereum, but other blockchains that can run smart contract code include Binance Smart Chain, Tezos and Hyperledger. More concretely, on Ethereum, contracts are written in high-level languages (like Solidity) and then compiled to bytecode, which is sent to the blockchain. Every contract has a different address living on Ethereum. When a smart contract is deployed it is final and cannot be interfered with, and the chain will reject any unauthorized changes.

Enforceability of Smart Contracts

Enforceability in the Event of Smart Contract Bugs and System Malfunctions One of the greatest legal issues lies with smart contract failures or unintended outcomes. By contrast, in traditional contracts, courts can interpret ambiguous provisions and order equitable remedies, whereas smart contracts perform as programmed, irrespective of whether they accurately reflected parties' intended outcomes. This rigidity results in intricate situations where legal solutions may oppose technological facts. For example, where a smart contract performs in such a situation it will be difficult to ascertain liability and resulting remedies due to legal complexities. The law treats a smart contract as a regular contract, if it has all the classical elements of a contract and is legally valid. For a contract to be smart, therefore an enforceable contract it must satisfy offer, acceptance, consideration, capacity etc. Just like an English contract. In other words, due to the fact that smart contracts are programmatically-executed, they are not automatically exempted from contract law.

Risks and Limitations of Smart Contracts

- **Code vulnerabilities:** When it comes to smart contracts, a flaw in the code can lead to serious, irreversible problems. Once a contract is running, it cannot be easily stopped or undone. An infamous case is the 2016 DAO incident, where a weakness in a smart contract for a decentralized fund was taken advantage of, resulting in millions of dollars' worth of ether being stolen. This incident, known as the "DAO hack".
- **Immutability and errors:** Once a smart contract is deployed, its code cannot be altered. This feature is meant to keep the contract safe from changes, but it also locks in any little errors. If someone makes a mistake when writing it or if the market shifts, the involved parties can't just change the terms as needed
- **Oracle and data reliance**: Smart contracts usually rely on oracles, which are data feeds from the outside world that provide information such as flight statuses, weather conditions, prices, or election results. If an oracle gives false or tampered information, it can lead to a smart contract making the wrong decision
- **Privacy and transparency:** Every node can see and copy smart contract code on a public blockchain. If the contract contains sensitive terms (like secret business conditions), that privacy is lost. Although, some solutions (private blockchains or zero-knowledge proofs) exist, but by default smart contracts offer full transparency of their code and state.

Conclusion

Smart contracts represent a fundamental shift in how agreements are formed, executed, and enforced. While they offer significant benefits including reduced transaction costs, increased transparency, and automated execution, they also present novel legal challenges that existing frameworks are still adapting to address. The path to their widespread, legally sound adoption requires careful navigation through complex issues of jurisdiction, enforceability, liability, and interpretation. As technology continues to evolve at a dizzying pace, legal frameworks must adapt, not to stifle innovation, but to provide the certainty and protection needed for these powerful new tools to reach their full potential, ensuring that the "code of law" keeps pace with the "law of code." What remains clear is that smart contracts are not a passing trend but an important development in the ongoing digitization of commerce and law.