

Smart Contracts Regulation: A Legal Revolution or Simply Evolution?

With technological advancements, the nature of contracts has evolved. During the move from paper-based traditional contracts to electronic contracts, the effectiveness of contract law has been put to the test. Smart contracts are a step forward in this transition.¹ Smart contracts labelled as anything from “one of the first truly disruptive technological advancements to the practice of law since the invention of the printing press”² to a “dumb idea”³, have finally made it onto the legislators and regulators agenda.

A smart contract is a self-executing contract in which the terms of the buyer-seller agreement are put directly into lines of code. The code and agreements it contain are disseminated throughout a decentralized blockchain network.⁴ The code can either be the only embodiment of the parties' agreement ("code-only smart contracts") or it can be used to supplement a standard text-based contract and perform certain terms ("ancillary smart contracts").⁵ Smart contracts differ from traditional text-based contracts in how they handle performance. Traditional text-based contracts rely on parties to fulfil their contractual obligations, whereas smart contracts fulfil such obligations automatically once triggered.⁶

Consider an arrangement between an insurer and a farmer which would compensate the farmer if temperatures fall below a specified level. In a typical text-based contract, the farmer would have to monitor the temperature every day, file a claim if it drops below the agreed-upon temperature, and then wait for the

¹ Shilpa Singh Jaswant and Prajakta Kale, “Smart contracts and blockchain: legal issues and implications for Indian contract law”, (November 2021) *International Review of Law, Computers & Technology*.

² Aaron Wright and Primavera De Filippi, “Decentralized Blockchain Technology and the Rise of Lex Cryptographia”, (March 2015) 10.

³ Kieron O’Hara, “Smart Contracts – Dumb Idea”, (March 2017) *IEEE Internet Computing* 21(2) 97-101.

⁴ Jake Frankenfield, “Smart Contracts,” (March 2022) Investopedia <https://www.investopedia.com/terms/s/smart-contracts.asp> accessed on 19 May 2022.

⁵ Stuart D. Levi and Alex B. Lipton, “An Introduction to Smart Contracts and Their Potential and Inherent Limitations,” (May 2018) *Harvard Law School Forum on Corporate Governance*.

⁶ Stuart Levi, Alex Lipton and Cristina Vasile Skadden, “Legal issues surrounding the use of smart contracts,” (2020) In Josias N. Dewey, “Blockchain & Cryptocurrency Regulation,” (2020, 2nd ed.) *Global Legal Insights* 155-170.

insurance to validate the claim and pay the farmer (or dispute the claim). If a smart contract component is added, the smart contract can automatically receive a feed of the official recorded temperature (using a measure agreed upon by the parties) and then transfer funds from the insurer's account to the farmer's account if the temperature falls below the agreed-upon level.⁷

Smart contracts are not a completely new concept. Nick Szabo, a computer scientist and legal theorist, coined the term in the 1990s. The modest vending machine, according to Szabo, is a "canonical real-life example that we can consider to be the primitive ancestor of smart contracts."⁸ A vending machine's mechanism is built on if-then logic, in which payment activates irreversible actions such as money retention and item supply. The insertion of the coin initiates a series of events that cannot be stopped or reversed. This series of actions is pre-programmed into the vending machine's coding.⁹

Smart contracts have been out of the limelight for some time due to technological constraints. However, the rapid development of cryptocurrencies and their underlying blockchain technology has resurrected Nick Szabo's original concept of smart contracts, which are computer protocols that automatically facilitate, verify, and enforce the negotiation and implementation of digital contracts without the intervention of central authorities.¹⁰ In fact, the worldwide smart contract industry is fast expanding, with a compound annual growth rate of 17.4 percent predicted from 2020 to 2025, bringing the total market size to USD 208.3 million from USD 109.8 million in 2019.¹¹

⁷ Ibid.

⁸ Nick Szabo, "Smart Contracts: Building Blocks for Digital Markets," (1996) https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html accessed on 19 May 2022.

⁹ Agata Ferreira, "Regulating smart contracts, Legal revolution or simply evolution?", (2020) Telecommunications Policy 45.

¹⁰ Shuai Wang, Liwei Ouyang, Yong Yuan, Xiaochun Ni, Xuan Han, and Fei-Yue Wang, "Blockchain-Enabled Smart Contracts: Architecture, Applications, and Future Trends," (November 2019) IEEE Transactions On Systems, Man, and Cybernetics: Systems 49 (11).

¹¹ Agata Ferreira, "Regulating smart contracts, Legal revolution or simply evolution?", (2020) Telecommunications Policy 45.

Smart contracts can increase commercial efficiency while cutting transaction and legal costs and enhancing transparency. They might be used for a wide range of activities, such as automating dividend payments, property transfers, and insurance claim automation, as well as speeding up clinical studies and exchanging data more efficiently.¹² However, smart contracts also pose a variety of challenges, ranging from finding an adequate definition to the uncertainty around contract formation and liability allocation in the event of a violation.¹³

The Code of Obligations and Contracts is the main legal document in Lebanon that governs all contracts. It lays out the fundamental requirements for every contract to be valid. According to section 165 of the Act: “An agreement is a combination of one will and another to produce legal effects, and if it aims to establish obligatory relationships, it is called a contract.” Therefore, smart contracts are permissible under the Lebanese Code of Obligations and Contracts if they include the basic elements of a contract, i.e., offer, acceptance, consideration, and intent to create a legal relation.

However, when it comes to contracts that are formed by electronic means, we must refer to the new e-transactions and data protection law (Law No.81/2018) that was enacted on October 10, 2018. Under Article 4 of Law No.81/2018 “Electronic writings and signatures shall have the same legal effect as the writings and signatures made on paper or any other medium, provided that the person producing them is identifiable and that they are organized and stored in a way that preserves their safety. Any electronic writing that does not meet the criteria above shall be considered as introduction of written evidence.”

However, there are regulatory concerns since there are no rules governing the finer details of a smart contract. If no special regulations are enacted, widespread implementation of the technology will necessitate changes to the Lebanese Code of Obligations and Contracts, as well as Law No.81/2018. The problems

¹² Jelena Madir, “Fintech Law and Regulation,” (December 2021) Elgar Online 175-198.

¹³ Jelena Madir, “Smart Contracts: (How) Do They Fit Under Existing Legal Frameworks?”, (December 2018) <https://dx.doi.org/10.2139/ssrn.3301463> accessed on 19 May 2022.

surrounding smart contract termination and modification are important issues, and adjustments should be made to address them.¹⁴

Smart contracts have the potential to revolutionize the reward and incentive structure that will influence how parties' contract in the future, yet they will need to evolve before they are commonly employed in complicated corporate relationships. As a result, it's vital to think about more than just how current concepts and structures may be adapted to this new technology when contemplating smart contracts. Rather, wholly new paradigms that we have yet to comprehend will drive the smart contract revolution.¹⁵

¹⁴ Swesh Saurabh, "What are the legal challenges imposed by smart contracts", (December 2021) iPleaders.

¹⁵ Stuart D. Levi and Alex B. Lipton, "An Introduction to Smart Contracts and Their Potential and Inherent Limitations," (May 2018) Harvard Law School Forum on Corporate Governance.