

Blockchain and Lebanese Corporate Law^(*)

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Abstract

Blockchain is now what the internet was twenty-five years ago. The purpose of this article is to discuss the essential applications that blockchain technology could provide to the corporate world. Indeed, recent foreign legislative experiences with blockchain technology have been fruitful. The adoption of blockchain technology by various business laws yielded numerous benefits. As a result, this paper underlines the significance of the benefits that blockchain technology could have on the corporate environment once implemented by Lebanese law.

Indeed, adopting blockchain technology will have a favorable impact on the company's formation and performance. On the one hand, blockchain technology makes the formation of a corporation easier and safer, both in terms of registration and contributing to corporate capital. Blockchain technology, on the other hand, enhances the company's performance by improving the working of its various organs, particularly the general meetings and the auditors.

Furthermore, relying on smart contracts, a blockchain-based technology, will make numerous corporate activities, operations, and transactions more efficient and safer. This paper invites the legislator to consider blockchain technology in the corporate world, thus allowing the Lebanese corporate law to be competitive, attractive, and evolutionary, to tackle diverse economic difficulties.

Keywords: company, commercial books, cryptocurrency, general meeting, smart contract.

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1. Introduction

Blockchain is being billed as the most significant technological breakthrough since the Internet. According to the World Economic Forum, by 2027, 10% of the world's gross domestic product will be kept on some type of blockchain technology⁽¹⁾. Moreover, companies and software behemoths have begun to spend considerably in the blockchain market, which is predicted to be worth more than \$3 trillion in the next five years⁽²⁾. The term “blockchain” revolves around the basic concept of “lex cryptographica”. It refers to rules governed by self-executing smart contracts and decentralized (autonomous) organizations⁽³⁾.

Everyone wants to be a part of a success story, that is why we are witnessing today a legislative push in some countries to authorize the use of various blockchain applications in various fields such as corporate law, auditing, and accounting. As a result, the concept of blockchain appears hazy, as it is difficult to imagine that the same technology can fuel so many different applications⁽⁴⁾. For the sake of simplicity, we present the blockchain as follows:

A blockchain is a digital ledger that was built to record transactions between numerous parties in a network. It is a distributed ledger that is peer-to-peer and Internet-based, and it contains all transactions since its inception⁽⁵⁾. Each user of the shared database is a “node” connected to the blockchain, with an identical copy of the ledger⁽⁶⁾. Every transaction on a blockchain signifies an exchange of value between parties such as a digital asset that represents rights or obligations. Although many distinct types of blockchains are being created, they adhere to the same fundamental broad design⁽⁷⁾.

(1) A. Andhov, Corporations on Blockchain: Opportunities & Challenges, *Cornell International Law Journal*, Vol. 53, (2020), p. 38.

(2) S. S. Sarmah, Understanding Blockchain Technology, *Computer Science and Engineering*, Vol. 8, n. 2, (2018), p. 23.

(3) J. Stan, Blockchain and the Law: A Critical Evaluation», *Stanford Journal of Blockchain Law & Policy*, 2 (1), (2019), p. 2.

(4) R. M. Garcia-Teruel, Legal Challenges and Opportunities of Blockchain Technology in the Real Estate Sector, *Journal of Property Planning and Environmental Law*, 2020, p. 2. Available on: https://www.researchgate.net/publication/339269211_Legal_challenges_and_opportunities_of_blockchain_technology_in_the_real_estate_sector (Last access: 25 November 2021).

(5) S. Weinstein, Blockchain Neutrality, *Georgia Law Review*, Vol. 55, n. 2, 2021, p. 516.

(6) D. Legeais, *Blockchain*, J.-Cl., Commercial, Fasc. 534, 2020, § 4-8.

(7) Chartered Professional Accountants (CPA), «Blockchain technology and its potential impact on the audit and assurance profession», p. 3. Available on: <https://us.aicpa.org/content/dam/aicpa/interestareas/frc/assuranceadvisoryservices/downloadabledocuments/blockchain-technology-and-its-potential-impact-on-the-audit-and-assurance-profession.pdf> (Last access: 22 November 2021).

In this regard, there are now three high-level blockchain classes. First, a public blockchain is decentralized with no single entity controlling the network. It is a completely open blockchain in the sense that anyone can join it whenever they wish. Bitcoin is an example of this type of blockchain⁽⁸⁾.

Second, a consortium blockchain is one in which the consensus process is managed by a pre-selected group of nodes. Third, a private blockchain is a subset of blockchain technology in which transaction execution permissions are controlled by a single authority with network control⁽⁹⁾.

In reality, private blockchains could help to empower enterprises since they are valuable in corporate areas where information must be transmitted confidentially: this system can be used for database management, auditing, and internal company infrastructure⁽¹⁰⁾. A private blockchain, however, is not decentralized. As a result, to optimize the outcomes, a consortium blockchain and a private blockchain might be combined, giving diverse parties different sets of rights while guaranteeing that the right to add a block is not centralized in the hands of one entity⁽¹¹⁾.

As a result, blockchain technology is starting to have an impact on, among other things, corporate law, which is the subject matter of this article. Technology evolves faster than the law, that is why legislations concerned with preserving the attractiveness of their corporate law are actively considering the numerous consequences at the intersection of blockchain and corporations, as well as the potential need for legislative reform.

Lebanese law is one of the legislations concerned by the renewal of its corporate law. Indeed, the goal to modernize Lebanese corporate law is reflected in the most recent reform, which took place with the passage of Law no. 126/2019, which introduced electronic tools into the legislative arena to aid in the establishment and operation of companies.

Based on the above, the fundamental question that we attempt to answer here is to know what are the legal implications of blockchain technology for Lebanese companies if it is adopted by Lebanese legislation?

(8) G. Prayogo, Bitcoin, Regulation and the Importance of National Legal Reform, *Asian Journal and Jurisprudence*, Vol. 1, n. 1, (2018), p. 2.

(9) G. Dimitropoulos, The Law of blockchain, *Washington Law Review*, March 2020, p. 14.

(10) A. Andhov, op. cit., p. 30.

(11) Ibid.

We will attempt to address this question by first studying the impact of blockchain on the company's formation (2), and on its performance (3).

2. The Company Formation

This part discusses the impact of blockchain on the company's formation (2.1), and on its assets and liabilities (2.2).

2.1 A Fast and Secure Formation

The Lebanese Code of Commerce is currently attempting to solve the “paperwork issue”⁽¹²⁾ at the level of company creation by implementing a new approach. The new article 98 of the Lebanese Code of Commerce, as amended by law 126/2019, requires the members of the board of directors of a joint-stock company to carry out the initial procedures linked to the publication within one month of the company's formation by filing and registering with the relevant commercial registry secretariat.

What is new here is that the operations mentioned in the preceding paragraph may also be completed through electronic means determined by the Minister of Justice, provided they are carried out exclusively through electronic means two years after the entry into force of this law, and electronic publication on the commercial register website would be available for public viewing.

In parallel, the French “Pacte law” (Law No. 2019-486 of 22 May 2019 on the growth and transformation of businesses) provides for a reform of the procedures for registering businesses. Indeed, to facilitate the formalities imposed on entrepreneurs both at the time of incorporation and during the operation of their business, it is planned that they will be able to complete all of the procedures and formalities required for access to and exercise of their activity through a single organization via electronic means⁽¹³⁾.

Furthermore, the abovementioned French law authorizes the government to issue an order to establish a general dematerialized registry of businesses, detailing the nature of their operations and aimed at collecting and preserving information about them. Hence, it appears that information of all types about the operations of companies will be collected in a non-material manner, their

(12) K. V. Tu, Blockchain Stock Ledgers», *Indiana Law Journal*, Vol. 96, (2020), p. 234.

(13) X. Delpch, Création D'un Guichet Electronique Unique et D'un Registre Dématérialisé des Entreprises», *Dalloz actualité*, 16 avril 2019. Available on: <https://www.dalloz-actualite.fr/flash/loi-pacte-creation-d-un-guichet-electronique-unique-et-d-un-registre-dematerialise-des-entrepr#>. YaPAudB-BzIU (Last access: 28 November 2021).

inscription will be homogenized, and their access will be facilitated⁽¹⁴⁾.

As a result, in the long run, the entire procedure associated with the legal responsibilities of registering and publishing imposed on corporations may be completely dematerialized.

This trend observed in the preceding cases, which indicates a growing reliance on numerical tools and a desire to simplify commercial and corporate registers, highlights the issue of blockchain technology's role, which may emerge as a helpful tool in the long run⁽¹⁵⁾.

This begs the question of whether it is possible to attach legal value to the employment of blockchain technology in this field. In the United States, the State of Delaware, where two-thirds of the 500 largest American companies are registered due to favorable legal rules, would consider authorizing blockchain for all operations ranging from company incorporation to shareholder vote in general meetings, via the keeping of registers and the recording of securities movements⁽¹⁶⁾.

Indeed, the State of Delaware has moved in this direction, as a law enacted on 24 July 2017 amended, among other things, paragraph 224 of Title 8 "General corporation law" of the Delaware Code, which deals with the "form of records"⁽¹⁷⁾. Accordingly, the latter paragraph provides that "any records administered by or on behalf of the corporation in the regular course of its business, including its stock ledger, books of account, and minute books, may be kept on, or by means of, or be in the form of, any information storage device, method, or one or more electronic networks or databases (including one or more distributed electronic networks or databases)".

As a result, as observed in foreign legal experiences, blockchain technology could be permitted for the establishment of corporate registers, and thus it has the potential to facilitate the formation of companies. Thus, if implemented in Lebanon, blockchain technology will be able to be used to make company incorporation simpler and faster by automating the production of documents such as articles of association and making all documents required for

(14) T. Granier, *La Publicité Légale, Le Registre du Commerce et des Sociétés et la Technologie Blockchain*, in *Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 112.

(15) *Ibid.*

(16) X. Vamparys, *Blockchain et Droit des Sociétés - Quelques Réflexions D'un Praticien*, *La Semaine Juridique Entreprises et Affaires*, no 17, (2018), 1200, p. 24.

(17) Available on <https://delcode.delaware.gov/title8/c001/index.html> (Last access: 20 October 2021).

publication in the Trade and Companies Register instantly available.

2.2 Assets and Liabilities

First, we are invited to throw light on the relationship between blockchain technology and shareholder equity (which is one of any company's liabilities) and more especially the capital stock.

In this context, companies could consider utilizing one of the important applications of blockchain, the crypto currencies, the most well-known example are the bitcoins, outside of the traditional areas of banking intermediation or public offering. Furthermore, it is widely accepted that cryptocurrency can be converted into other currencies. Recently, in France, the Nanterre Commercial Court addressed the issue of bitcoin's legal status, concluding that bitcoins allow payment to be made⁽¹⁸⁾. Indeed, the Court ruled that "Bitcoin is "consumed" "during its usage, whether to pay for goods or services, exchange it for currencies, or lend it, much like legal currency, despite the fact that it is not one"⁽¹⁹⁾.

This begs the question of whether the company's shareholders could subscribe to the capital (capital stock) using crypto-currency contributions. Knowing that the capital subscription is made in exchange for a contribution in cash, or in-kind⁽²⁰⁾, it would be interesting to fix the nature of the bitcoin contribution. The qualification of a cash contribution appears to be excluded because, while the legal nature of crypto-currencies is debated, it is widely accepted that it is not a "legal tender" currency. Indeed, despite its use as a medium of exchange, bitcoin does not fit the definitions of "legal tender", "common money", or "electronic money"⁽²¹⁾. This is true in Lebanon, where the Lebanese pound is the only legal tender. In other words, bitcoin contributions cannot be considered "cash"⁽²²⁾.

(18) A. Lecourt, *Droit des sociétés et numérique*, Répertoire IP/IT et communication, Dalloz, Paris, 2020, § 32.

(19) T. com., Nanterre, 26 Feb. 2020, n. 2018F00466.

(20) Article (1843-3) of the French Civil code provides that: «Every partner is a debtor towards the company for all that he has promised to contribute to it whether in kind, in money or in industry».

(21) A. Passinsky, Should Bitcoin be Classified as Money?, *Journal of Social Ontology*, Vol. 6, n. 2, (2020), p. 283.

(22) X. Vamparys, Blockchain et Droit des Sociétés - Quelques Réflexions D'un Praticien, *La Semaine Juridique Entreprises et Affaires*, no 17, (2018), 1200, p. 25.

Lebanon entered the digital age when it passed the Electronic Transactions and Personal Data Law no. 81/2018, which governs writing and evidence through electronic means, electronic commerce, and personal data. Although “electronic and digital money” were not omitted from some provisions of this law, they were presented in an unsatisfactory and limited manner. Accordingly, article 1 of Law no. 81/2018 defines electronic and digital money as monetary units that are kept in an electronic format.

In this regard, we draw attention to the significant discrepancy among jurists about the terminology to be employed in the area of digital currencies. Nonetheless, according to widespread opinion, the term “digital currencies” encompasses both electronic money and virtual currencies.

The first term, electronic money, as stated in article 1 of Law no. 81/2018, is covered by several laws, including European Directive EC/2009/110, which defines it in its article (2) as “electronically, including magnetically, stored monetary value as represented by a claim on the issuer issued on receipt of funds for the purpose of making payment transactions as defined in point 5 of Article 4 of Directive 2007/64/EC, and which is accepted by a natural or legal person other than the issuer.” This concept refers to paper money used in electronic transactions and trade, and it has nothing to do with virtual currencies or cryptocurrencies.

Article 1 of the European Directive 2018/843 defines the second term, virtual currencies as “a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically”. Cryptocurrencies fit under this category of virtual currencies⁽²³⁾.

Nevertheless, in article 1 of Law no. 81/2018, when the word “digital” is inserted to refer to virtual currencies of all kinds, the term “money” is unfortunately not acceptable due to the prevalent trend not to treat virtual currencies as money. Nevertheless, article (61) of Law no. 81/2018 places the fate of “electronic and digital money” in the hands of the Banque du Liban, both in terms of regulating its nature, restrictions, and methods of issue, as well as its use⁽²⁴⁾.

(23) T. Kiviat, *Beyond Bitcoin: Issues in Regulating Blockchain Transactions*, Duke Law Journal, Vol. 65, (2015), p. 573.

(24) Article (61) of law 81/2018 provides that the regulations issued by the Banque du Liban specify electronic and digital money, how to issue and use it, as well as the technical systems and procedures that regulate this sort of money.

As a result, the potential of designating the bitcoin contribution as a contribution in kind must be considered. This category of contributions encompasses not only tangible property contributions but also intangible property contributions other than monetary contributions. More precisely, cryptocurrencies meet the criteria for intangible movable property.

However, the contribution of bitcoins may pose complications that stem from the legislation controlling contribution in kind in limited risk corporations. In fact, the value of the goods contributed must be verified in the interests of the company, as well as its shareholders and creditors. A report from a contribution auditor⁽²⁵⁾ must certify that the property contributed is not overestimated for any contribution in joint-stock companies and limited liability companies.

In this regard, article (87) of Chapter 1 “Formation” of Title 3 “Joint-stock companies” of the Lebanese Code of Commerce states that the experts’ report shall be made available to subscribers; the latter shall be authorized to cancel their subscription if the founder’s assessment exceeds by 20% the actual value of initial shares and advantages, as determined by competent persons.

Thus, given the volatility of crypto-currencies, certain exceptions to the requirement of an evaluation allow for contributions in bitcoins to be considered⁽²⁶⁾.

Based on all of the above, in the absence of certainty about the qualification of digital assets, recourse to contribution in kind is more appropriate.

Second, we are requested to shed light on the relationship between blockchain technology and current assets, which are a primary category of any company’s assets, and, in particular, its interaction with cash.

In this regard, a company’s cash earnings are legally indicated and set in its commercial books. The Lebanese commercial law divides these books into two categories: obligatory commercial books and optional commercial books⁽²⁷⁾.

It should be noted that the first article of Law no. 126/2019 (amendment of the Lebanese Code of Commerce) amended the provisions of article 16 of the Lebanese Code of Commerce, whereby the new version of this article provides that every natural or legal person with the capacity of a merchant

(25) Article (L. 225-147) of the Code of commerce, in the case of joint stock companies and Article (L. 223-9) of the Code of commerce, in the case of limited liability companies.

(26) T. Kiviat, *Beyond Bitcoin: issues in regulating blockchain transactions*, op. cit., p. 574.

(27) E. Tyan, *Droit Commercial*, T. 1, 2e éd., Hachette Antoine, Paris, 2017, pp. 155-156.

may hold, by manual method or through a fortified digital application whose characteristics match the criteria specified by a decree issued based on the proposal of the Ministers of Justice and Finance, the following documents: the daily journal, inventory book, and general ledger⁽²⁸⁾. Bookkeeping by means of the digital application prescribed in this article becomes mandatory after two years from the date of this law.

It is noteworthy that this amendment requires a regulatory decree that defines the standards required for keeping commercial books by the electronic method⁽²⁹⁾.

In this respect, the blockchain could be an interesting option as an electronic method since a blockchain is simply a digital ledger of transactions that is replicated and distributed across the blockchain's complete network of computer systems.

3. Enhancement of the Company's Performance

This section focuses on the impact of blockchain on general meetings and audits (3.1), as well as the advantages that smart contracts, one of the blockchain-based technologies, may provide (3.2).

3.1 General Meetings and Statutory Auditors

3.1.1 The Right to Information

The quality of the shareholder's vote is dependent on accurate information. For the past three decades, the legislations governing joint-stock companies have seen the regulations governing this information considerably expanded.

In Lebanon, the first paragraph of the new article (197) as amended by law 126/2019 expanded shareholders' right to access papers at the company's headquarters by allowing them to view them electronically rather than in person, and such electronic means must be approved by the company. One of the electronic means that we strongly advocate in this regard is one based on blockchain technology.

(28) It is important to mention that no amendments were made to the period of keeping commercial books after their conclusion (Article 19), nor to the authenticity of commercial books in evidence (Articles 20 and 21), so the legislator was required to amend articles (19, 20), and (21) of the Lebanese Code of Commerce, which are related to commercial books, in a manner consistent with the amendment of article 16, particularly in terms of digital or electronic bookkeeping.

(29) E. Nassif, *Explanation of the amendments of the Code of Commerce*, Zein Legal Publications, 2021, p. 34.

Indeed, one of the blockchain's applications, as a decentralized registry, may involve the integration of required data into the blockchain. This would be made public to provide all shareholders, potential investors, and the general public with access to information more openly and securely⁽³⁰⁾.

3.1.2 Transparent Records of Shares

Share ownership can be murky at times, especially during annual general meetings when critical business decisions are examined and voted on. Investors, each with their own set of objectives, tend to exploit their information and vote for their own benefit, ignoring the consequences for the company and other shareholders.

In this regard, the potential of blockchain technology is to generate a transparent image of ownership, that is to say, all shareholders (shareowners) would be visible, and transfers of shares from one owner to another would be viewable in real-time⁽³¹⁾.

The fact that the owners of shares are publicly disclosed is crucial because minority shareholders will quickly know what their ownership amount is and will thus have immediate access to their rights. A significant benefit of blockchain decentralization is that it allows everyone an equal opportunity to participate in decision-making. Blockchain technology may also make it easier for minority shareholders to communicate with one another⁽³²⁾.

3.1.3 A Dialogue to be Perfected

The low participation of minority shareholders in general meetings is due, in part, to the fact that the board of directors is uninterested in them, whereas majority shareholders are the focus of all attention, with frequent contacts, particularly upstream of general meetings⁽³³⁾.

The emergence of activist shareholders will certainly force executives to increase the frequency and quality of their communication. New technologies, such as the internet and blockchain should allow for more fluid and consistent

(30) G. Goffaux Allebaut, «Blockchain et Droit des Actionnaires», in *Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 146.

(31) A. Andhov, op. cit., p. 18.

(32) Ibid, p. 20.

(33) J. Kirkbride and S. Letza and C. Smallman, Minority Shareholders and Corporate Governance: Reflections on the Derivative Action in the UK, USA and in China, *International Journal of Law and Management*, Vol. 51, n. 4, (2009), p. 215.

communication with management⁽³⁴⁾.

Therefore, blockchain technology could be used to improve shareholder participation in general meetings, which is one of the parameters of corporate governance. In this regard, the technology of the blockchain allows for a better understanding of the profiles, concerns, and voting habits of shareholders by analyzing available information about them.

Based on this information, companies can improve their communication with these shareholders, and even encourage small shareholders to attend general meetings more frequently⁽³⁵⁾.

3.1.4 Advantages

In this context, it is worthwhile to mention that the new article 156 of the Lebanese Code of Commerce provides that the attendance or representation of at least half of the directors is required for the validity of the board's resolutions. A director is forbidden to represent more than one other director. Within the framework of calculating the majority and quorum in board meetings, the company's statutes can note the possibility of considering members who participate in board meetings via remote audio-visual communication technology or other technical means (the conditions of which are determined by a decision issued by the Minister of Justice) as present at the meeting, provided that verification of the identity of the calling party is performed and that the company's system notes the mechanism to be adopted in this framework. However, the system can also prohibit the issuance of some decisions by a board of directors in which members participate remotely via the aforementioned communication technology.

Paragraph 4 of this article also adds that the content of the remote communication must be recorded in all board of directors' sessions so that the recordings are considered an integral part of the meeting minutes and kept with them.

This article, without a doubt, represents an evolution in the organization and composition of the board of directors and marks the goal of the Lebanese legislator to modernize the functioning of the Lebanese companies. However, we believe that this development should be extended, on the one hand, to

(34) X. Vamparys, "La Blockchain: Un Outil au Service des Actionnaires?", *Bulletin Joly Sociétés*, n°6, (2018), p. 315.

(35) V. Magnier and P. Barban, "The Potential Impact of Blockchains on Corporate Governance: A Survey on Shareholders' Rights in the Digital Era," *Intereulaweast*, Vol. 5, n. 2, (2018), p. 205.

general meetings, and, on the other hand, it should consider recent technological advancements to keep up with other legislations that accept and use the most recent technological innovations in the business world.

In this regard, blockchain could be a viable substitute for the current mail voting or corporate proxy voting mechanisms that are still in use in most legislations today. Although electronic voting has been implemented in various countries, most recently in Lebanon, as indicated above, the number of active stockholders has remained relatively consistent. This is explained by the fact that shareholders who do not own many shares are still uninterested in voting at general meetings⁽³⁶⁾.

In other words, this shows that the issue of inactive shareholders and the domination of majority shareholders is caused by the understanding of one's limited power and the cost-benefit analysis, rather than the incapacity to physically participate. Furthermore, since corporations typically have a significant number of inactive shareholders, this issue is exacerbated⁽³⁷⁾.

This is why a mechanism designed to promote shareholder participation is required to solve this challenge. Blockchain could be presented as a remedy for this situation since it is an incentive-based design that could include increased dividends, more tokens, or other privileges⁽³⁸⁾.

3.1.5 Exercising the Right to Vote

Blockchain technology provides an appealing alternative to traditional online voting. Unlike traditional online voting, which requires verification by a third party, the blockchain's innovation is based on a "peer-to-peer" relationship, that is, one that is decentralized, allowing for the removal of any intermediaries. The vote is directly recorded, along with the others, in a register⁽³⁹⁾.

This registry, which is distributed to all network computers, is generally protected against forgery. Consequently, the voting result is generated automatically, through the use of a smart contract, and cannot be changed by a third party. As a result, the possibility of error or fraud is eliminated⁽⁴⁰⁾.

(36) A. Andhov, op. cit., p. 23.

(37) P. Ireland, Limited Liability, Shareholder Rights and the Problem of Corporate Irresponsibility», *Cambridge Journal of Economics*, Vol. 34, (2010), p. 847.

(38) A. Andhov, op. cit., p. 23.

(39) S. Weinstein, op. cit., p. 537.

(40) X. Vamparys, La Blockchain: Un Outil au Service des Actionnaires?», *Bulletin Joly Sociétés*, n°6, (2018), p. 318.

Indeed, while each shareholder may consult the list of shareholders of a company before a general meeting, they must still be known to the latter, and the list must be up-to-date and reliable. Furthermore, in companies with a substantial number of shareholders, soliciting all the shareholders by one of them is a complex process, making the exercise of certain rights, such as the registration of project resolutions on the agenda of a meeting, the convening of a meeting by a legal representative appointed at the request of shareholders, or management expertise, difficult for small shareholders⁽⁴¹⁾.

As a result, the blockchain allows for the conduct of a vote, the outcome of which may be controlled by everybody. Indeed, because each vote corresponds to a transaction designated by a number and logged in a block, voters may verify that their vote was counted⁽⁴²⁾.

Furthermore, in order to avoid evidentiary concerns with third parties, the company may require that the blockchain be legible in printout form. Additionally, structuring a voting agreement as a smart contract will allow for the verification of vote eligibility and the keeping of vote records⁽⁴³⁾.

Therefore, if used to the voting procedure of a general meeting of shareholders in Lebanese corporations, this approach would allow for faster voting while simultaneously ensuring the centralization and counting of votes⁽⁴⁴⁾.

3.1.6 Directors' Nomination

The adoption of blockchain technology, for example, can be useful when voting to appoint a director. Accordingly, diplomas and other important qualifications could be recorded in blockchains, allowing shareholders to easily verify their authenticity, putting an end to many usurpations of titles and other qualifications put in resumes by applicants⁽⁴⁵⁾.

In addition, other requirements, such as those outlined in the new article 148 of the Lebanese Code of Commerce as amended by Law 126/2019, could be recorded on the blockchain. Accordingly, this article provides that none may be called to the board of directors of a joint-stock company if he has

(41) Ibid.

(42) E. Guegan, *Blockchain et Assemblées des Actionnaires*, In *Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 155.

(43) J. C. Kelly, M. J. Mescall, Taking Stock of the Block: Blockchain, Corporate Stock Ledgers, and Delaware General Corporation Law - Part II, *The Journal of Robotics, Artificial Intelligence & Law*, Vol. 1, n. 4, (2018), p. 243.

(44) Art. (3), Dir. EU n° 2017/ 828, 17 May 2017.

(45) B. Barraud, *Les Blockchains et le Droit*, Revue Lamy Droit de l'Immatériel, N° 147, 2018, § 52.

been declared insolvent and has not been rehabilitated in the last ten years, or if he has been convicted in Lebanon or abroad for a crime or offense, or an attempted crime or offense, in the last ten years.

Furthermore, a blockchain-based director's registry would make it simple to identify those among them who had completed the term of their office periods⁽⁴⁶⁾, allowing them to be automatically replaced at the end of these periods⁽⁴⁷⁾.

3.1.7 Risk

Nonetheless, the use of blockchain technology in the voting process is not without risk. Although blockchain technology, such as the use of digital tools, allows for a better view and hence a better knowledge of the shareholders, it is not without normative constraints, such as the loss of vote anonymity⁽⁴⁸⁾.

Furthermore, participation in online meetings will greatly facilitate the company's collection of additional data on shareholders, such as connection time, actual listening time, and interest in specific issues. All this information will allow the company to improve its understanding of its shareholders, anticipate the meaning of resolution votes, and thus exert pressure on them to vote in a specific way about the making of future decisions⁽⁴⁹⁾.

3.1.8 Blockchain and Statutory Auditors

The new article (172) of the Lebanese Code of commerce, as amended by Law no. 126/2019, specifies the number of statutory auditors in a joint-stock company by requiring that the constituent meeting, then the ordinary meetings appoint one or more statutory auditors.

The statutory auditors can be selected from among the shareholders or from third parties as long as they are not members of the board of directors owing to a conflict of interest. The new Article (173) also states that a shareholder or group of shareholders, each representing at least 10% of the company's capital, may petition the president of the first instance chamber in which the

(46) Article (149) of the Lebanese Code of Commerce provides that directors of joint stock companies are appointed for a maximum of five years under the statutes; those appointed by the shareholders' meeting are appointed for a maximum of three years.

(47) V. Magnier, *La Blockchain, Un Choix de Gouvernance Pertinent?», Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 171.

(48) Y. Hermstüwer, *The Limits of Blockchain Democracy», New York University Journal of Law & Liberty*, Vol. 14:2, (2020), p. 403.

(49) A. Lecourt, *Droit des Sociétés et Numérique, Répertoire IP/IT et Communication*, Dalloz, Paris, 2020, § 54.

company's head office is located to appoint an additional auditor from among the court's accounting experts⁽⁵⁰⁾.

The new article (174) determines what the auditors must do, which is to audit the financial accounts required by article (101) of the Code of commerce. These declarations stated in article (101) have been amended, developed, and made consistent with regard to commercial transactions conducted by electronic means and other means specified in article (101)⁽⁵¹⁾.

In this regard, we note that the new article (101) requires members of the board of directors to submit a number of documents at the commercial registry secretariat every year and within two months of the general assembly's approval of the financial accounts. Indeed, it should be emphasized that the operations described in this article can be accomplished using electronic means determined by the Minister of Justice, provided that publication on the commercial registry website two years after the law's entry into effect is necessary and open to the public.

Accordingly, the fundamental change brought about by the new article (101) of the Lebanese Code of Commerce is an emphasis on the use of electronic means in completing the required operations in terms of publication, and in the future on the publication on the commercial register website two years after the law 126/2019 enters into force⁽⁵²⁾.

In this context, we invite the Ministry of Justice to consider blockchain technology as one of the electronic means that might be utilized to facilitate the auditor's duty, for a variety of reasons. Indeed, blockchain should make business audits easier in the context of companies' operations.

As a matter of fact, blockchain technology, by enabling a permanent digital record of securities transfers among users, offers an alternative to inefficient manual processes of issuing and transferring shares. This will strengthen auditing and regulatory supervisory role while enhancing ownership

(50) According to the new Article (30) of Legislative Decree No. 35/1967, the partners in a limited liability company may appoint one or more statutory auditors, and this appointment is mandatory if the number of partners exceeds twenty, the company's capital reaches 30 million Lebanese pounds, or the auditor is requested to be appointed by one or more partners representing at least one-fifth of the capital.

(51) E. Nassif, *op. cit.*, 2021, p. 227.

(52) *Ibid.*, p. 92.

transparency⁽⁵³⁾.

Accordingly, blockchains, which are structured on a cryptographic foundation, can provide an immutable audit trail, barring previous transactions from being manipulated, through the use of decentralized electronic nodes⁽⁵⁴⁾. As a result, the benefits of using blockchain for auditors may be as follows: reducing audit costs, audit risk, and achieving real-time audit⁽⁵⁵⁾.

That is why statutory auditors are interested in blockchain for conducting audits as part of projects to acquire shares or companies. Certainly, this technology could be used to replace the data room in the sense that the potential acquirer could integrate the blockchain and thus have access to information of all types such as shares transactions, easily and quickly thanks to the blockchain⁽⁵⁶⁾. In short, understanding how to capitalize on the current blockchain audit's development potential will be vital to the long development of accounting practices⁽⁵⁷⁾.

3.2 Smart Contracts

At its most fundamental, contract creation involves an offer and acceptance with a lawful consideration or a cause⁽⁵⁸⁾. Both the offer and acceptance signify that both parties have agreed to the terms of the agreement.

Acceptance was traditionally indicated through conduct or a wet ink signature. However, in recent years, electronic contract formation has become more widespread. In the case of the United States, since the passage of the Electronic Signatures in Global and National Commerce Act ("E-Sign Act") by Congress in 2000, which lends legal effect to electronic signatures, digital acceptance through applications like DocuSign has become normal practice⁽⁵⁹⁾.

(53) E. Ducas and A. Wilner, The Security and Financial Implications of Blockchain Technologies», *International Journal*, Vol. 72, n. 4, (2017), p. 548.

(54) I. Linkor and E. Wells and B. Trump and Z. Collier and S. Goerger and J. Lambert, Blockchain Benefits and Risks, *The Military Engineer*, Vol. 110, n. 714, (2018), p. 62. See also, R. Ryan and M. Donohue, Securities on Blockchain", *The Business Lawyer*, Vol. 73, n. 1, (2018), p. 91.

(55) C. Cheng and Q. Huang, Exploration of the Application of Blockchain Audit», *Advances in Economics, Business and Management*, Vol. 110, (2019), p. 65.

(56) A. Lecourt, Droit des Sociétés et Numérique, Répertoire IP/IT et Communication, Dalloz, Paris, 2020, § 43.

(57) C. Cheng and Q. Huang, op. cit., p. 63.

(58) J. Evans, Curb your Enthusiasm: The Real Implications of Blockchain in the Legal Industry, *Business, Entrepreneurship & the Law*, Vol. 11:2, (2018), pp. 273-299, p. 275.

(59) S. A. McKinney and R. Landy and R. Wilka, Smart Contracts, Blockchain, and the Next Frontier of Transactional Law, *Washington Journal of Law, Technology & Arts*, Vol. 13, issue 3, (2018), p. 328.

More recently, in Lebanon, Law No. 81/2018 Relating to electronic transactions and personal data legalized electronic writings and signatures in its article 4. The latter article provides that “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”⁽⁶⁰⁾.

In this regard, with the development of digital technology in the contractual field, a recurring dilemma in the minds of jurists occurred concerning our subject matter: “if Code is law, then Code is contract?”⁽⁶¹⁾.

This question invites us to investigate smart contracts. It is important to mention that self-executing contracts have been around for a long time, but the current merger of blockchain and smart contracts has given this concept new life. Smart contracts, when combined with blockchain’s immutable ledgers, can enable automatic and predictable execution, eliminating the danger of third parties disrupting agreed-upon operations⁽⁶²⁾.

More precisely, smart contracts, have the potential to simplify and streamline commercial transactions by eliminating inefficiencies and uncertainty introduced by lawyers, courts, regulators, and competing parties⁽⁶³⁾.

Simply put, when all prerequisites are met, a smart contract is a computerized mechanism that implements the contract’s provisions. As a result, it is self-enforcing and self-executing, requiring little or no input from the contracting parties. When the appropriate criteria are met, it is not feasible to override or prohibit the contract’s performance⁽⁶⁴⁾.

Therefore, once the smart contract’s mechanism is in place, performing the

(60) Law No. 81/2018 Relating to electronic transactions and personal data is available on: <https://smex.org/wp-content/uploads/2018/10/E-transaction-law-Lebanon-Official-Gazette-English.pdf> (Last access: 5 November 2021).

(61) M. Mekki, *Le contrat, Objet des Smart Contrats*», In *La blockchain*, Dalloz, Grand angle, 2020, p. 68.

(62) J. C. Kelly and M. J. Mescall, *Taking Stock of the Block: Blockchain, Corporate Stock Ledgers, and Delaware General Corporation Law - Part I*», *The Journal of Robotics, Artificial Intelligence & Law*, Vol. 1, n. 3, (2018), p. 149.

(63) S. A. McKinney and R. Landy and R. Wilka, *Smart Contracts, Blockchain, and the Next Frontier of Transactional Law*, *Washington Journal of Law, Technology & Arts*, Vol. 13, issue 3, (2018), p. 316.

(64) B. Schafer, *Smart Social Contracts? Jurisprudential Reflections in Blockchain Enabled e-voting*», in *La Blockchain*, Dalloz, Grand angle, 2020, p. 62.

contract carries no more risks and as a result, the equivalent performance by the other party will be automatic. This means that smart contracts provided by blockchain provide full, near-error-free, and zero transaction/agency cost coordination of agency interactions⁽⁶⁵⁾.

In addition, because smart contracts are self-enforcing, they eliminate the need for a complex court structure to enforce transactions⁽⁶⁶⁾. In addition, smart contract parties may decide to use anonymous, electronic arbitration as a fallback. In short, “commentators have seized on smart contracts to speculate that contract law may become obsolete”⁽⁶⁷⁾.

Based on the above, in the corporate world, blockchain technology could then be used to set up computer protocols that would automatically trigger certain provisions of the articles of association or a shareholders’ agreement. In other terms, a smart contract is a computer program that, on a blockchain, verifies that a series of execution conditions are met and, when this is the case, triggers the actions covered by the agreement. This is why we talk about an “if ..., then ...” process⁽⁶⁸⁾. Several examples of the smart contract’s utility are shown below:

First, if the articles of association contain an approval clause, the smart contract would ensure its compliance by automatically informing the parties to the transfer of shares of the existence of this clause and the need for its observance via the blockchain.

Second, in the event of inalienability registered in a company’s articles of association, the smart contract would allow the transfer of shares to be blocked if the holding period is not met: the computer program would prevent any movement of shares in the blockchain.

Third, nothing would exclude the use of this sort of contract for the performance of a shareholder agreement, or a dividend payment as soon as the event that triggers their payment is recorded in the blockchain such as a general meeting

(65) W. A. Wulf, Blockchain-based corporate governance, *Stanford Journal of Blockchain Law & Policy*, 4 (1), (2020), p. 6.

(66) S. A. McKinney and R. Landy and R. Wilka, Smart Contracts, Blockchain, and the Next Frontier of Transactional Law, *Washington Journal of Law, Technology & arts*, Vol. 13, issue 3, (2018), p. 316.

(67) H. Hughes, Blockchain and the Future of Secured Transactions Law, *Stanford Journal of Blockchain & Policy*, 3 (1), (2020), p. 37.

(68) B. Barraud, *op. cit.*, § 41.

decision noting the existence of distributable sums⁽⁶⁹⁾.

Fourth, by independently observing the occurrence of an event or condition and the consequences thereof, the smart contract could ensure respect for preferential or pre-emptive rights, which practitioners sometimes struggle to enforce⁽⁷⁰⁾.

Fifth, “a smart contract [...] can support the execution of multiple transactions at any given moment”⁽⁷¹⁾. Moreover, the “systemization” of a chain of smart contracts on the blockchain can also improve the company’s performance. As a result, it is possible to encompass the basic smart contract with a whole series of commitments (also in the form of smart contracts) that resemble orders: the resolution of a conflict via a decentralized judge or a responsibility commitment⁽⁷²⁾.

Based on the preceding, and from a technical perspective, smart contracts are computer protocols that facilitate, verify, and perform the negotiation or a contract, or enable the enforcement of a contractual clause attached to the contract. Accordingly, we can infer that smart contract blockchain-based technology, if approved by Lebanese legislation and applied in the Lebanese business world, will surely secure various contract conditions, leaving no room for ambiguity, interpretation concerns, or conflicts.

4 Conclusion

Technological advancements present new difficulties as well as new opportunities for businesses. Innovative technologies, in particular, can change the equilibria among enterprises. When technological discontinuities arise, leading enterprises consistently fail to maintain their position at the top of their industries. Not recognizing their impact as soon as possible may result in a disastrous blunder. Blockchain is a technology that has the potential to cause big changes in the corporate environment and will have a significant impact over the next few decades. It has the potential to alter our perception of business operations and change the Economy⁽⁷³⁾.

(69) A. Lecourt, *Droit des Sociétés et Numérique*, Répertoire IP/IT et Communication, Dalloz, Paris, 2020, § 39.

(70) G. Goffaux Allebaut, *Blockchain et Droit des Actionnaires*, in *Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 144.

(71) E. J. Nash, *Blockchain § Smart Contract Technology: Alternative Incentives for Legal Contract Innovation*, *Brigham University Law Review*, n. 3, (2019), p. 820.

(72) S. De Charentenay, *Blockchain et Droit: Code is Deeply Law*, *Gazette du Palais*, Paris, n 39, (2017), p. 17.

(73) F. Holotiuk and F. Pisani and J. Moormann, *The Impact of Blockchain Technology on Business*

Once adopted by Lebanese legislation, the decision to implement blockchain technology within a company is unquestionably the responsibility of the board of directors, who must carefully weigh the benefits, potential, and limits posed by this cutting-edge technology in light of the company's financial and legal situations. As a guardian of the business interests, the board has an active role to play in decision-making, oversight, and risk management related to blockchain⁽⁷⁴⁾.

As previously indicated in this paper, the legal adoption of blockchain technology has the potential to change, or at the very least improve, several aspects of Lebanese companies, including the following:

First, it is no secret that depending on blockchain-based technologies would speed up the process of creating the firm, decreasing the time required to do so by eliminating all of the time-consuming formalities that are typically required by law. Furthermore, Lebanon would eliminate a key barrier to corporate recordkeeping innovation by revising corporate law to expressly allow the use of blockchain⁷⁵.

Second, many stakeholders are advocating for the modernization of voting methods to make voting more efficient and transparent for voters. In this respect, blockchain appears to be an appropriate technology to be employed. Indeed, using a blockchain system in which shareholders can not only vote, but also share information and influence decision-making, could be advantageous. In a future of decentralized autonomous consensus, collective decision-making may become more important, resulting in more shareholder democracy while maintaining security and transparency⁽⁷⁶⁾. Said differently, the blockchain could be used to restore the balance between institutional shareholders and “small” shareholders by bringing the latter out of their isolation, thereby contributing to the strengthening of “the effectiveness of shareholder democracy”⁽⁷⁷⁾.

Models in the Payments Industry», Proceedings der 13. Internationalen Tagung Wirtschaftsinformatik (WI 2017), p. 912. Available on: https://www.researchgate.net/publication/320083145_The_Impact_of_Blockchain_Technology_on_Business_Models_in_the_Payments_Industry. (Last access: 5 November 2021).

(74) V. Magnier, *La blockchain, Un Choix de Gouvernance Pertinent?», Blockchain et Droit des Sociétés*, Dalloz, Paris, 2019, p. 169.

(75) K. V. Tu, *Blockchain Stock Ledgers*, *Indiana Law Journal*, Vol. 96, (2020), p. 260.

(76) A. Andhov, *op. cit.*, p. 22.

(77) X. Vamparys, *La Blockchain: Un Outil au Service des Actionnaires?», Bulletin Joly Sociétés*, n°6, (2018), p. 318.

Third, “blockchain offers a drastically new way to record, process, and store financial transactions and information, and has the potential to fundamentally change the landscape of the [auditing] profession and reshape the business ecosystem”⁽⁷⁸⁾.

Fourth, it should be noted that the existence of cryptocurrencies has been validated by many legislations, such is the case in Japan, Germany, Finland, and Belarus. As a result, it is possible to sell and buy goods in these States using bitcoins or other cryptocurrencies. Companies profit from such legislations since allowing cryptocurrency transactions permits the public to contribute to a company’s capital by using blockchain-based cryptocurrencies⁽⁷⁹⁾.

Fifth, smart contract is a blockchain-based technology that has the potential to transform business transactions by reducing the inefficiencies and uncertainties produced by the present transactional⁽⁸⁰⁾. Hence, the smart contract provides great security to the parties while also significantly reducing the costs of drafting, verifying, and executing the contract, particularly through disintermediation⁽⁸¹⁾.

Based on the above, investing in blockchain technology within the Lebanese corporate world is a strategic decision that requires the legislator to adopt and embrace it, on the one hand, to deal with the legal competitiveness that exists between different legislations, and to guarantee an update of the Lebanese legislation to go hand in hand with the latest technologies, ensuring the attractiveness and influence of Lebanese law. Adoption of the blockchain, on the other hand, will practically facilitate corporate activities and promote corporate culture in Lebanon.

(78) M. Liu and K. Wu and J. Xu. Jie, How Will Blockchain Technology Impact Auditing and Accounting: Permissionless Versus Permissioned Blockchain», *Current Issues in Auditing*, Vol. 13, n. 2, (2019), p. 19.

(79) B. Barraud, op. cit., § 65.

(80) S. A. McKinney and R. Landy and R. Wilka, Smart Contracts, Blockchain, and the Next Frontier of Transactional Law», *Washington Journal of Law, Technology & Arts*, Vol. 13, issue 3, (2018), p. 313.

(81) B. Barraud, op. cit., § 44.

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