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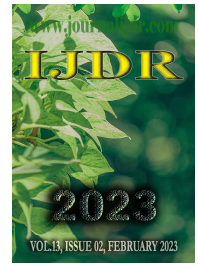
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## THE LEGAL IMPACT OF BLOCKCHAIN IN BRAZIL'S LEGAL SYSTEM: TRUST AS SOURCE OF LAW

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### ABSTRACT

The article upholds the importance of the concept of trust, which is the basis of Blockchain technology, as a source of unregulated law, and explores the consequences of its eventual formalization. To this end, with the support of an interdisciplinary literature review, the concepts of Information Society and New Economy are introduced and defined, and the link between these definitions and the phenomenon of global horizontal governance is explored. Besides, the article articulates how trust, characteristic of Blockchain technology, becomes a key piece in the dynamics of the Information Society, bumping into the need to be recognized legally. It is also shown that this technological trust is distinguished from moral trust and emphasizes the relationship of interdependence between them both, since the former is a guarantor of the latter, playing a role like the law or further instruments of expert systems. The article concludes that, for this interdependence relationship to produce effects capable of ensuring due legal certainty, it is necessary to include technological trust in the sources list of LINDB's Article 4, so when called upon to resolve issues arising from failures in the Blockchain system, the Law is prepared to protect the rights of individuals and ensure their effectiveness.

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## INTRODUCTION

With the launch of the Green Book of the Information Society, Brazil took a significant step in the incorporation of new technological movements. This work, written in 2000 by the Ministry of Science, Technology, and Innovation, has served as a basis for decision-making regarding the insertion of new technologies in Brazilian daily life. This is justified by the need to ensure that constitutional guarantees are not disregarded along the path for the implementation process of the Information Society (SOCINFO, in Portuguese), either in relation to the present or future generations. As an emerging technology constituting the Information Society, Blockchain is a distinguished case for analysis. Because it is a distributed network, which works in a decentralized and horizontal model of governance based on trust, Blockchain evades the common controls of traditional legal systems. For this reason, it is important that researchers certify that there is no breach of legal guarantees and rights resulting from the wide diffusion of this technology, which seems imminent and likely to happen. To collaborate with this thought, this article defends and articulates the following theses: a) Blockchain arises from the information society and functions in a horizontal governance model; b) Trust is the basis of operation of Blockchain and should be sheltered by the legal system as a source of law; and c) When sheltered, it must receive due legal treatment and promote legal certainty in the network of the informational society.

### The Information Society and the impact of Blockchain over Law:

The governance agenda covers how societies relate, function, decide and communicate (ARAUJO, 2020, p. 257-258). Traditionally, governance was closely linked to the figure of the State, which was responsible for administering, organizing, and guiding decision-making, whether from a legislative or social point of view. However, after the horrors of World War II, the figure of the individual gradually gained space as the central subject of law. In the field of International Law, this new perspective allowed the individuals and their collectivities the expression of wills and behaviors, even if only slightly or nothing related to the National States. With the emergence of virtual spaces, this process was radicalized, and, consequently, the governance model had to adapt itself. More recently, with the emergence of new technologies such as Blockchain, the possibility of an even more decentralized habitat arises (ZWITTER; HAZENBERG, 2020, p. 2). Participants in a Blockchain network operate under a new form of governance, in which decision-making is not carried out through the actor's institutional identity and presumed competence, as in a traditional model in which "if it comes from the State, it has authority". On the opposite, decision-making is carried out from the role of the actor and his technical ability in each subject. Hence, there is a shift from the figure of the individual to the figure of the collective. Some authors reach further grounds (ZWITTER; HAZENBERG, 2020, p. 6), stating that the horizontal form evolves into a fluid form, one that is sufficient to define the governance of Blockchain technology, since both the identity of its actors, and their function at a given time, are fluid. This implies that governance is based on a

network perspective, in which decision-making is necessarily stipulated, according to the momentum and occasion of that situation. In any case, whether in a horizontal perspective or in a fluid one, decentralization in the functioning of Blockchain and cryptocurrencies is undeniable. Specifically, the cryptocurrencies, there is the fact that this decentralization is the setting of transactions with economic values, which leads to more serious concerns about the protection of vulnerable parties, which is under the responsibility of decision makers in the traditional mode of governance. The question remains, then, whether it is a real possibility, feasible, that decisionmakers can ensure that there is no harm and that all protections are guaranteed or at least sought, such as in the state and centralized model. In that way, the law should be concerned with finding or recognizing new manners to ensure that the parties involved in legal relations in virtual media have, at least, the legal support to assure that deviation from ethical, mandatory, or legal conduct, intentional or mistaken, have juridical consequences. In other words, there must be an element capable of influencing the operators of new technologies to act in accordance with the guiding principles of law. Regarding traditional legal relations, the law functions as this element.

Noting the challenge of legislating all aspects of cyberspace, always evolving, and modifying, the remaining of this article seeks to show that trust is an imperative element in playing the role of the sources of law amidst a virtual environment. However, in order for trust to be valued and respected as a guarantee of duty and compliance with the law or obligations in a virtual environment, it is essential to accept it by the legal system as a source of law. Before, however, demonstrating the benefits and the need for the internalization of trust in the Law of Introduction to the Norms of Brazilian Law (LINDB), it is essential to walk through the origin of this "trust" and its relationship with SOCINFO and the objectives assumed internationally by National States. Simultaneously with the evolution of horizontal governance or, at least, following the retraction of Westphalian governance, the international community undertakes a search for a society marked by the network of information and/or the network of knowledge, designated as the Information Society (BRAZIL, 2000). Beyond the definition of the Brazilian Ministry of Science, Technology, and Information (BRAZIL 2000), Rodrigo Pereira defines it as the "society that predominantly uses information and communication technologies for information exchange in digital format". The author goes on to state that the digital format supports, then, "the interaction between individuals and between these and institutions, using practices and methods in permanent construction". (GOUVEIA; GAIO, 2004, p. 45, apud PEREIRA, 2011, p. 5)

In other words, SOCINFO is a society project where:

Each society is an information society, and each organization is an information organism, just as every organism is an information organism. Information is needed to organize and make anything work, from the cell to General Motors<sup>1</sup>. (BELL *apud* MATTELART, 2000, p.22, *translated*)

The definition above reflects how the Information Society is called by the Japanese in the 60s (WEBSTER, 2006; MATTELART, 2000), indicating it as a society marked by an increasing information traffic, as technologies continue to emerge over the decades. Lisboa (2006, p. 79) draws a comparison between the ruptures brought by the Industrial Revolution at the time of its development and the modifications that are responsible for the construction of SOCINFO<sup>1</sup>. In his words, if:

[...] In the face of the industrial revolution, the establishment of the factory brought notable repercussions on the production of goods and their distribution by trade, similarly, the informational revolution brought the improvement of the media, allowing

collectivized access to information and, also interoperability in the network. (LISBOA, 2006, p.79, *translated*)<sup>2</sup>

This collectivized access to information opened the possibility of society operating into an alternative reality, in a metaverse, understood as "a universe within another, that is, the imitation of the real world, which provides the relationship of people in all aspects, with projection in life and in the relationship of people and corporations [...]" (MUNIZ; ANDRADE, 2013, p. 165). In more tangible terms, SOCINFO can be understood by its effects, which, according to Lisboa, can be listed as follows: a) transnationalization and the emergence of economic blocks; b) e-commerce; c) the cost-effectiveness of information; d) the development of a database; e) the electronic transfer of data which has favored access to information and the establishment of new limitations; f) the establishment of Community rules with a view to standardizing legislative treatment. (LISBOA, 2006, p. 88) For Castells (2000), SOCINFO favored the process at the economic and social level from the geographical concentration of places of innovation, production and use of information and communication technologies. For Webster (2006), it allowed new forms of economic production and the spread of the information and the communication industry in the production and circulation of wealth. Therefore, SOCINFO has broken and is breaking the verticality of access, whether to networks, communication or to direct relationship between individuals around the world, providing the preponderance of horizontality at the expense of hierarchical access. (LISBOA, 2006, p. 88). It is precisely this aspect that highlights the correlation between SOCINFO and horizontal governance. They are two changing realities, consequences of an international community more accessible and more focused on ensuring the individual as a central actor in decision-making concerning their fate.

The primacy for the direct relationship between individuals is a factor dear to the Information Society, which is, at the same time, the result of horizontal governance and a driving configuration of this interrelationship model. SOCINFO, therefore, is not a random phenomenon, but a project of global policy and accession by countries from the elaboration and organization of their respective Green Books (BRASIL, 2000). It is from this document that the implementation of SOCINFO based on the global pact is assumed. This document is responsible for ensuring that each country undertakes the commitment to insert its community in the greater objective of cooperation, marked by free sharing of data. It was with this purpose that the SOCINFO World Summit, held in Geneva in 2003, provided a list of guiding principles and global nature to be internalized in the national states. Among them, the first principle stands out:

We, the representatives of the peoples of the world, gathered in Geneva from 10 to 12 December 2003 for the first phase of the World Summit on the Information Society, declare our common desire and commitment to build a people-oriented Information Society, inclusive and development-oriented, where everyone can create, access, use and share information and knowledge, enabling individuals, communities and peoples to use their full potential in promoting sustainable development and better quality of life, based on the purposes and principles of the Charter of the United Nations, fully respecting and defending the Universal Declaration of Human Rights.<sup>3</sup> (BRASIL, 2014, p. 16, *translated*)<sup>3</sup>

<sup>2</sup> "[...] face à revolução industrial, o estabelecimento da fábrica trouxe repercussões notáveis sobre a produção dos bens e a sua distribuição pelo comércio, de forma similar, a revolução informacional trouxe o aprimoramento dos meios de comunicação, possibilitando o acesso coletivizado da informação, ainda, a interoperabilidade na rede".

<sup>3</sup> Nós, os representantes dos povos do mundo, reunidos em Genebra de 10 a 12 de dezembro de 2003, para a primeira fase da Cúpula Mundial sobre a Sociedade da Informação, declaramos nosso desejo e compromisso comuns de construir uma Sociedade da Informação voltada para as pessoas, inclusiva e orientada para o desenvolvimento, em que todos possam criar, acessar, utilizar e compartilhar informação e conhecimento, permitindo indivíduos, comunidades e povos empregar todo o seu potencial na promoção do desenvolvimento sustentável e da melhor qualidade de vida, com base nos propósitos e princípios da Carta das Nações Unidas, respeitando plenamente e defendendo a Declaração Universal dos Direitos Humanos"

<sup>1</sup> Cada sociedade é uma sociedade de informação e cada organização é um organismo de informação, assim como todo organismo é um organismo de informação. A informação é necessária para organizar e fazer funcionar qualquer coisa, da célula à General Motors.

In addition, the conceptual presence of the New Economy as one of the pillars of SOCINFO derives from the Green Book (BRASIL, 2000). Although the goal being the same, each country was responsible for describing it in a particular and tailored way, as it is noticed in the Brazilian document:

The goal of the Information Society Program is to integrate, coordinate and promote actions for the use of information and communication technologies, in order to contribute to the social inclusion of all Brazilians in the new society and, at the same time, contribute to the country's economy to be able to compete in the global market<sup>4</sup>. (BRASIL, 2000, p. 10, *translated*)<sup>4</sup>

According to the Green Paper, the New Economy can be seen as an economic scenario in which governments, international organizations, and the private sector, together, "are encouraged to promote the benefits of international trade and the use of electronic legal business, and to promote such use in developing countries and countries with economies in transition" (BRASIL, 2014, p. 52). The New Economy, thereby, is operationalized in network for the production and sharing of knowledge and information capable of creating products and services. In addition, this transformative perspective of the economy is marked by the new globalized competition standard "in which the ability to generate innovations at increasingly reduced time intervals is of vital importance for companies and countries" (BRASIL, 2000, p. 17). These innovations are embodied by technologies that sustain them and that design the most rational and flexible panorama in the productive processes, incurring in the development of new forms of investment and more efficiency regarding the "use of capital, labor and natural resources". (BRASIL, 2000, p. 17)

Also, it is evident that from this scenario of the New Economy, which began with electronic commerce, in 2000, the need for technological advancement emerged, seeking to provide a secure basis for economic transactions, even if it was already accountable for the disruptive movement, as mentioned in the Green Book (BRASIL, 2000, p. 18, *translated*)<sup>5</sup>:

E-commerce subverts the logic of traditional markets by imposing new features: easy access to information; reduced transaction costs; replacing traditional intermediaries with new types of agents acting at the end of the production chain, together with the final consumer, making all the connection with the producers of goods and services themselves; elimination of physical distances and uninterrupted operation in all regions of the world.

With the dawn of Blockchain, the new technologies, which already represented a breakthrough in economic relations, have gained a powerful driver that promises to remove from e-commerce any interference of extrinsic validation to the technology itself and its operators by functioning in a distributed peer-to-peer (P2P) environment, in which all users are, simultaneously, customers and providers of information and services in the network (PIMENTA, 2020, p. 219). In this sense, Blockchain enables horizontal and decentralized governance, positioning itself at the forefront of a society increasingly marked by the free exchange of information, knowledge, data and, more recently, money. Among this environment, the popularization of cryptocurrencies, the commercialization of NFTs and other economic transactions in the network has been allowing a new model of electronic commerce that might favor deviations from

criminal conduct (LEHMANN, 2019, p. 6; OECD, 2022). That said, it claims both a strong security system and trust as elements of continuity of these network economic, financial, and legal operations. In this sense, the financial circulation in a global network of information and communication, vulnerable, insecure, and unreliable, aroused the need for innovation that would allow the tracking and receipt of information registered on the internet, linked to two fundamental requirements: security and trust. For the Organization for Economic Cooperation and Development (OECD), "the financial sector served as a testing ground for Blockchain, and activities in this heavily regulated space have illuminated some of the major political and regulatory challenges". (OECD, 2022a) Blockchain technology has come to address this demand for security and trust. Therefore, characterized by codes generated online with data that connect and are validated anonymously, without ballot in any national state. That is done only by citizens of SOCINFO operating network relations, not exposing them but, linking them, permanently, to prove, juridically, the operations. Hence the importance of Blockchain beyond cryptocurrencies.

#### **Blockchain and the double face of trust arising from its structure:**

First, Blockchain resembles an accounting ledger that records transactions of all peers in the network, organizing them into blocks that need to be validated through a consensus mechanism. There are different consensus mechanisms currently operating, however, to illustrate, we can focus on the example of the Bitcoin network, which uses a type of consensus known as Proof-of-work. In this mechanism, specific nodes called "miners" compete to solve a complex mathematical puzzle, which requires enormous computational power. In solving this puzzle, the winning node is rewarded with a predetermined number of Bitcoins, and the block of transactions it validates is then added to the Blockchain. This update is then distributed among all other nodes in the network, generating a secure, auditable and, for all practical purposes, immutable record.

In the words of Marinho and Ribeiro:

It is as if the data of the company's cash book were recorded, had its origin and content confirmed on several networked computers, almost simultaneously, and once introduced, such data could no longer be changed by one party and access to its content was available to all members of the network<sup>6</sup>. (MARINHO; RIBEIRO, 2017, p. 151, *translated*)

Through this ingenious scheme of operation, Blockchain imposes itself as a system of information and data exchange that can generate legal acts, facts, and business, as well as procedural evidence. In this sense, it manifests itself as a way of bureaucratizing and, consequently, validating economic relations and standards. But, unlike traditional organizational systems, Blockchain relies mostly on institutional trust in technology (FERNANDES *et al*, 2021, p. 1). Additionally, Blockchain is characterized as a technological platform that allows the creation of trust through intelligent code, characterized by reliable transactions between two or more parties, and authenticated by mass and anonymous collaboration, fueled by collective self-interests, instead of large profit-driven corporations (TAPSCOTT; TAPSCOTT, 2016, p. 35). In other words, Blockchain is operated directly by the parties involved in the transaction, which, given the characteristics of the underlying protocol, do not have to worry about external validation by a central authority (such as a bank, a card operator, etc.). It is therefore a system of Trust Protocol. (TAPSCOTT; TAPSCOTT, 2016). It follows from this that Blockchain: (a) is an informational system that allows secure information exchanges between people of global society (social implications); produces financial circulation (economic implications); and (c) enables the construction of legal scenarios (freedom of legal business) with the informational transit being

<sup>4</sup> O objetivo do Programa Sociedade da Informação é integrar, coordenar e fomentar ações para a utilização de tecnologias de informação e comunicação, de forma a contribuir para a inclusão social de todos os brasileiros na nova sociedade e, ao mesmo tempo, contribuir para que a economia do País tenha condições de competir no mercado global".

<sup>5</sup> O comércio eletrônico subverteu a lógica de funcionamento dos mercados tradicionais, impondo-lhe novas características: fácil acesso à informação; diminuição dos custos de transação; substituição dos intermediários tradicionais por novos tipos de agentes que atuam na ponta da cadeia produtiva, junto ao consumidor final, fazendo eles mesmos toda a conexão com os produtores de bens e serviços; eliminação das distâncias físicas e funcionamento ininterrupto em todas as regiões do mundo."

<sup>6</sup> É como se os dados do livro-caixa da empresa fossem gravados, tivessem sua origem e conteúdo confirmados em vários computadores em rede, de maneira quase simultânea, e, uma vez introduzidos, tais dados não pudessem ser mais alterados por uma parte e o acesso ao seu conteúdo estivesse à disposição de todos os membros da rede.

networked. Such is the potential of this technology, that governments around the world, including the Brazilian Federal Government, have already been studying and adopting Blockchain as a platform for organizational control of public management, with the objective of enforcing Public Governance (BRAZIL, 2020) and impact on the trust, reputation and sustainability of operations, values pursued by SOCINFO. The OECD considers that "governments should apply a stronger international lens to activities around Blockchain" (2022a) and, for this to occur successfully, assesses 3 reasons for this global interdependence: (i) strengthening beneficial economic ties; (ii) ensuring that digital innovations respect global priorities; and (iii) promoting responsible Blockchain innovation. However, trust in technology as an infrastructure is only increasing. According to the 2022 Bitstamp Crypto Pulse, listening to 5,500 institutional investors and 23,000 retail investors from 23 markets, including Brazil, 66.9% of investors trust cryptocurrency, enhancing when compared to the 55% of respondents in 2019 (IND4.0, 2022).

According to Francisco Carvalho, adherence to Blockchain as a security and trust infrastructure is an elementary of the operations in the network because, "if not associated via auditability and traceability, using blockchain as infrastructure, it will be through marketing, NFT, metaverse and Web3, which is the internet with blockchain structure". (IND4.0, 2022). All this circulation, based on the trust of the system, represents, for the Law, demand for systematization of legal categories capable of dealing, in an appropriate way, with eventual conflicts arising from the breach of trust that impacts on the deviation of ethical, legal and obligational conducts. Thereby, to the element of trust in technology to reach the legal facts, it must, first, compose the strategic planning of self-regulated governance by good practices (OECD, 2022a) and, second, be welcomed by the legal system and receive status as a normative source of conduct, validated as a language standard in the communication of both systems: the legal and the technological that, according to the OECD (2022a) should be a system that creates rules in an agile way. Check out the excerpts below:

[...] Best practices and policy tools around international regulatory cooperation, agile rule creation and adaptation to digital transformation.

[...] there are several technology-specific issues that must be addressed by governments, such as the obvious requirement of decentralized networks and services to comply with local laws and the need for transparency and accountability in the governance of distributed systems.<sup>7</sup> (OCDE, 2022a, *translated*)

What is noticed, then, is that trust is the cause and consequence of the use of Blockchain technology. Better explained: while trust in the effectiveness of the platform leads the parties to transact for it, the predictable outcome (guaranteed by the protocol rules) provides even more trust. Nevertheless, this finding brings the need to understand whether these "two trusts" are of the same nature and, moreover, what to do when trust is broken, and what are the legal solutions to this situation. Recently, the OECD (2022b), through the Ministerial Council Meeting, prepared a document containing "OECD Recommendations on Blockchain and other Distributed Ledger Technologies". The goal is to provide guidance to Blockchain ecosystem actors, including but not limited to governments, industry, academia and civil society, in view of the increased use and rapid development of the technology and its applications. The Recommendations contain suggestions for clear and coherent policy structuring for Blockchain innovation and responsible usage to prevent and mitigate risks, while also preserving stimulus to innovate, collaborate and compete (OECD, 2022b). Moreover, they list the following structuring components to be coupled by the actors of this ecosystem: (i) compliance and coherence; (ii) governance, transparency, and accountability; (iii) interoperability; (iv) digital

security and privacy; (v) education and skills development; and (vi) environmental impact (OECD, 2022b). In this sense, it can be said, then, that the use of the term "trust" refers to the certainty of efficiency and security that the Blockchain uses, given the operation of its protocol. However, there is another sense of "trust" that refers to a belief, or expectation, that is blind (GIDDENS, 1991, p. 35), insofar as it resides in the lack of full information. As Davi Silva (2019) well explains, that kind of trust:

[...] occurs when there is no visibility and contingency is based on the assumption of credibility, an expectation of outcome and behavior, the belief of a particular person or system, expressed as faith in probity or the correction of abstract principles<sup>8</sup>. (SILVA, 2019, p. 11, *translated*)

This is the case of expert systems in which lay individuals place their trust in third parties with technical knowledge, replacing their nescience and, hereby, transferring the informational, communicational, and decision-making process to the expert person. It can be illustrated with the plane, elevator, bureaucratic systems and even the internet. In such cases, there is an extrinsic reference to the system that is responsible for giving the green light to the user. The same applies to Blockchain. Through the efficiency of its Protocol, it passes the information to the user that it is possible to rely on its operability. This technological confidence must be legally reflected, since it encourages the realization of legal relations with financial and economic impacts and makes the New Economy operate. For this, it is necessary that the Law understands technological trust and recognizes it as legal trust, because, once the dispute arises, the legal institutions will be able to respond to the users of SOCINFO. These, in turn, deposit in the law the confidence that their demands will be adequately understood, as Luhmann considered elements of trust in this scenario:

(a) permanence of states, so that present and future are the same; (b) simplification by reducing complexity and infinite variable possibilities; (b) anticipation of the future, by projecting what happens in the present, for future times<sup>9</sup>. (LUHMANN, 2009, p. 328, *translated*)

It can therefore be considered that trust in technology is intrinsic, automatic, intuitive to users; sustained by the effectiveness and immutability of Blockchain's technological resources. From another perspective, legal trust is extrinsic, moral, social, built-in expectation, shared and ensured by law (expert system between law | not law) and lends itself to boost legal relations because it is a guarantee of validity and effectiveness of its effects. As a result, the article 4 of the Law of Introduction to the Norms of Brazilian Law (LINDB) must internalize the trust as a source of law. To put into context, the article describes the law as a direct and primary source of legal exercise and, from an indirect and secondary perspective, the uses, customs, and general principles of law, completed with the jurisprudence and the doctrine of jurists. In this regard, it should receive trust as one of the sources because it can generate expectation with lack of legal response. This implies affirming that the Law must engage in its system the trust in the Blockchain as a legal source of validation - or not - of legal relations operated in this environment, arising from the information generated in the technology itself. Moreover, although the degree of effectiveness of the technology is extremely high, the fact that there are possibilities of failure or corruption of the system challenges the safety of its operation (SILVA, 2019, p. 16). And if the potential flaws of Blockchain technology are left unattended by the legal system, it will not be able to guarantee legal certainty to SOCINFO. When there is any violation of the law, constitutional principles or any other normative source provided by the Brazilian legal system, it is possible and

<sup>8</sup> "[...] ocorre quando não há visibilidade e a contingência encontra base na suposição de credibilidade, numa expectativa de resultado e comportamento, na crença de uma determinada pessoa ou sistema, expressa como fé na probidade ou na correção de princípios abstratos."

<sup>9</sup> "(a) permanência dos estados, de modo que se igualem presente e futuro; (b) simplificação por meio da redução da complexidade e das infinitas possibilidades variáveis; (c) antecipação do futuro, pela projeção daquilo que se dá no presente, para tempos vindouros."

<sup>7</sup> As melhores práticas e ferramentas políticas em torno da cooperação regulatória internacional, criação ágil de regras e adaptação à transformação digital [...] há uma série de questões específicas da tecnologia que devem ser abordados pelos governos, como a exigência óbvia de redes e serviços descentralizados para cumprir as leis locais e a necessidade de transparência e responsabilidade na governança de sistemas distribuídos.

feasible to direct the judge in solving the problem. However, when faced with a violation of technical trust - and therefore of Blockchain technology itself -, the judge called to resolve the expectations of the parties involved will not find this trust as a source able to generate rights, obligations, and legal interpretation. Therefore, it will no longer apply sanctions designed specifically for breaches of this trust or it will find no way to curb unintended errors in the system. The fact that technical trust is not linked to the law implies leaving the user in total legal vulnerability. This represents breach of data, information, knowledge, decision-making and misconduct. On the other hand, there is the challenge of the legal system having to receive trust in the technological system with one of the ways to exercise social trust, the one that is deposited in the human, when it decides to use the Blockchain.

So, either you leave everything to technology and understand horizontal governance as the legal framework of the network or, the legal system engages this technological trust as social trust and welcomes it as a source of law capable of generating cognitive expectation in the users that, in case of problems, they might rely on the law as capable of solving the dispute. This construction has theoretical support in the light of the theory of social systems that, in turn, comprises the networked system and thus contributes to the reduction of complexities. Exemplifying, these complexities are being considered from the volume of information traffic, speed of information and the numerous relationships arising from this traffic within the system, in relation to simultaneity. In this lies the network operations: it abdicates the certainty brought by time, in exchange for technological confidence; it bets on the present without being sure of the future (LUHMANN, 1996). The theory of systems (LUHMANN, 2010), from which the information society is structured and derived, states that society is allocated in the social system that, in turn, contains several vital, functional subsystems, namely: political, economic, legal, cultural, and educational. Each of these subsystems has its own identity (language structure) that differentiates it from the others (functionality and operational closure); as a result, each of them has its own language that produces communication within (autopoiesis) and outside the system.

These subsystems must communicate with each other (opening-closing), in a relationship of interdependence so that the whole, which is understood by the social system - here, in this case, SOCINFO, reaches evolution in its development. For this impact to be achieved, there is a need for each subsystem to open to absorb irritations (input) that may be necessary for this development as a response (output). With each irritation absorbed by the subsystem, capable of modifying its operations and its language (structural coupling), it means that the subsystem is in frank evolution and able to respond to the social system at the height of the dynamics of relations. In the case of the Brazilian legal system, seeking to achieve Constitutional effectiveness and Human Rights as a global rule. The absence of trust as a source of law leaves forsaken the legal relations operated in the network, since they work based on this factor. Thus, to solve this communication issue and recognize the element of trust as a standard of legal language it is necessary to irritate the legal system (input). Therefore, the possibility of trust input must be given by the legal construction of the category in such a way that the system understands it as legal and absorbs it in its autopoiesis. With this, it would work as a norm of legal conduct in the social system of SOCINFO (output), in order to return to the network adequate response to legal conflicts involving legal trust, no longer as a value judgment, but as a judgment of fact. (BOBBIO, 2006, p. 135)

Better explained, one of the characteristics of legal positivism is precisely to curb the value judgment and that this stems from the way of doing science within Law:

[...] the judgment in fact represents a knowledge of reality, since the formulation of such judgment has only the purpose of informing, communicating [...]; the value judgment represents, on the contrary, a decision-making in front of reality, since the formulation has the purpose not to inform, but to influence on the

other, that is, to make the other make a choice equal to mine and eventually follow certain prescriptions of mine.<sup>10</sup> (BOBBIO, 2006, p. 135, translated)

Therefore, in order for trust to serve as a legal guarantee for relations in Blockchain, the concept must be normative and valid: normative, as a regulator of conduct capable of generating rights, duties and coercion; valid, once trust as a rule of law comes into existence as a legal norm, that is, "it is part of a real legal system, effectively existing in a given society" (BOBBIO, 2006, p. 137). Additionally, assessing this aim is indispensable to achieve the regulatory mismatch that the legislative has with the technology that houses it in its relations. That is, while the Blockchain encryption system, which guarantees the authenticity, integrity, and validity of informational transit, is supported by national law (BRAZIL, 2001), the trust in it is in the alleged global ethics. This is because the provision of the network system infrastructure is a government obligation, mandatory for the implementation of the information society (BRASIL, 2000). On the other hand, trust as a rule of moral conduct in the possible relations in the system is universal (BRASIL, 2014) since it directly affects issues of sovereignty and extraterritoriality during relations. This shows, once again, the importance of internalizing trust as a rule of conduct with legal validity in the national scenario, so that other rules related to LINDB can also be claimed for trust, as a source, allowing the incidence of articles 5, 12 and 13 in the resolution of issues with which they should be concerned and whose solution runs through the need to standardize trust as a source. The initiative of internalizing trust as a source of law is forced to the extent of the country's involvement and commitment to international treaties and policies, such as the feasibility and validity of using the Blockchain platform. For that end, Brazil has made a commitment to join the Information Society and to sponsor its access, not being able to avoid working for the full functioning of one of its main instruments: Blockchain, usually defined as a platform of:

[...] systemic integration achieved through intergovernmental decisions is not necessarily anchored in social integration. This will be expressed in a process of absorption, accommodation, and transformation of the national in response to the imperatives of belonging to the Union, a process that affects different actors and institutions.<sup>11</sup> (GONÇALVES; GUIBENTIF, 2008; p. 9, translated)

Once proven the need for this change in the Brazilian legal system, with the adoption of trust as an avant-garde source of law, one cannot forget the correct procedure for it. On the subject, it should be ensured the maintenance of the operational closure of the national legal system, represented by the Constitution of the Republic and all processes that guide the subsystems. Any opening in his autopoiesis to receive inputs from globalization must pass through the filter of constitutional policy. Finally, if trust is elementary of the Blockchain platform, practicality and efficiency are its assumptions. Trust is only present because the platform is practical and efficient in performing operations in the present ensuring the future, even without the time space necessary for that future to arrive. Trust anticipates it so that the present can have its immediate effects resulting from this practicality and efficiency. It is, therefore, a new performance of bureaucracy, which assumes technological confidence. Nevertheless, faced with possible disruptions of trust, once the legal system is activated to resolve them, it is necessary that it is properly prepared to give character of legal norm to this trust, treating it as a source and

<sup>10</sup> “[...] o juízo de fato representa uma tomada de conhecimento da realidade, visto que a formulação de tal juízo tem apenas a finalidade de informar, de comunicar [...]; o juízo de valor representa, ao contrário, uma tomada de decisão frente à realidade, visto que a formulação possui a finalidade não de informar, mas de influir sobre o outro, isto é, fazer com que o outro realize uma escolha igual a minha e, eventualmente, siga certas prescrições minhas.”

<sup>11</sup> “integração do tipo sistêmico alcançada através de decisões intergovernamentais não se ancora forçosamente numa integração social. Esta exprimir-se-á num processo de absorção, acomodação e transformação do nacional em resposta aos imperativos da pertença à União, processo esse que afectada modo diverso diferentes actores e instituições”.

presenting consequences for its non-compliance. This is the only way that Blockchain, an important engine of the Information Society, can guarantee its security both from a technological point of view and from the intersectional point of view between the economic subsystem and the legal universe.

## FINAL REMARKS

The research started from the observation of contingency risk arising from the Blockchain technology as already registered and referenced. It was understood to be a problem for the research to solve, since security and trust are elementary of the Blockchain, but there is still much to do, especially regarding the internal regulation by the national states in global compliance for the governance of networked informational transit. In this, then, resided the scope of the research: to present trust as an element of connection between technology and the expectation of right to resolve legal contingents that, perhaps, will be submitted to the system of the judiciary before deviations of conduct, Non-compliance with obligations and laws and regulations. The article presented the element of human trust, of moral nature, of value judgment, as a coupling to sources of law, here in Brazil, especially, given the established in article 4 of the Law of Introduction to the Norms of Brazilian Law. It is from this Article 4 that all rules of conduct are brought into the law; it is from there that the primary source is the law and secondary sources, uses, customs and general principles of right, including doctrine and jurisprudence. The sources serve to guide the operator of law in the interpretation of legislation and facts. Therefore, from the perspective of research, trust could expressly compose this list of sources, so that the Blockchain could be internalized in the national legal system by the legitimate way of the norm, rather than being internalized through judicial interpretation in the face of the concrete case not yet legislated. It is undeniable the aim to mitigate the status of Blockchain as being only under the penalties of recommendation and global regulatory claim, marginalized before the judicial intervention in the concrete case with its performance overshadowed in Brazil. To validate this research result, it was necessary to understand the scenario in which the Blockchain technology is situated. This implies stating that the technology is a development demanded by the Information Society that, in addition to seeking to move the global economy in a network, lacks regulatory security and confidence that transactions are guaranteed.

In addition, during research, faced the issue of governance as a global conduct regime of this ecosystem, according to recent recommendations given by the Organization for Economic Cooperation and Development, as well as the need for states to align globally in this regulatory aspect to enable and recognize network operations. Hence, technological trust should be absorbed by law as a legal source, since Blockchain has been growing every year and consolidating itself as the necessary infrastructure of the internet and "Web 3.0", from which the networked actors of this ecosystem will not be able to avoid it in their operations. Therefore, this scenario will only advance and will not take long for Brazil to consolidate itself as an actor of this global ecosystem giving legal answers that contribute to the responsible and secure development of Blockchain. Finally, since technological trust is an intrinsic element capable of ensuring extrinsic trust, it is imperative that the legal system makes its due and formal recognition. In this way, it will ensure that eventual conflicts involving flaws or obscure uses of Blockchain technology are not abandoned by the absence of legal prediction of expected and desired behaviors, also avoiding confusion between the two concepts of "trust" brought by the research.

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