

Code Isn't Law

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Abstract— Code ¹ isn't, and never can be, Law because the law is a phenomenon of culture, created and directional to men. Code can only be a rule in the sense of being accepted or produce effects by and in some group, in some circumstances but never as an obliged system like the ones of sovereign states that are valid to all – criminal rules are obeyed by its members but do not have the power to generate an effect in a formal state judicial system. Moreover, codes generated by Artificial Intelligence from machines lack the fundamental necessity of validity that is to be created and legitimated by men.

I. INTRODUCTION

This article has the intention to dialogue with a thesis written by Aaron Wright & Primavera De Filippi in its article “Decentralized Blockchain Technology and The Rise of Lex Cryptographia” and the following article written by Primavera De Filippi & Samer Hassan “Blockchain Technology as a Regulatory Technology – From Code is Law to Law is Code”.

II. METHOD

This article has the intention to dialogue with a thesis written by Aaron Wright & Primavera De Filippi in its article “Decentralized Blockchain Technology and The Rise of Lex Cryptographia” and the following article written by Primavera De Filippi & Samer Hassan “Blockchain Technology as a Regulatory Technology – From Code is Law to Law is Code”.

As proposed above, we are challenging the concept that decentralized and autonomous creation of rules by machines could set a kind of system of law, even though this new kind of rulemaking can be recognized as

producing effects on the market, over people and governments.

“With the widespread deployment of the global Internet network, new forms of regulation have emerged which increasingly rely on soft law (i.e., contractual agreements and technical rules) to regulate behaviors. As more and more of our interactions are governed by software, we increasingly rely on technology not only as an aid in decision-making but also as a means to directly enforce rules. The software thus ends up stipulating what can or cannot be done in a specific online setting more frequently than the applicable law, and frequently, much more effectively. This is what Joel Reidenberg has coined Lex Informatica (1992) —a concept which has subsequently been popularized as “Code is law” by Lawrence Lessig (1999).”²

The authors start the idea exploring the concept of Lex Informatica to purpose its theory based on the emergence of the new way of production of rules, that are subsuming the users of the internet, based on the new technology of Blockchain:

In this case meaning as an array of languages composing a method standardized to communicate

instructions to a computer, involving a set of syntactic and semantic rules to be used to define a c

Blockchain Technology as a Regulatory Technology from Code is Law to Law is Code. Primavera De Filippi & Samer Hassan, CERSA/CNRS & Berkman Center for Internet and Society, Harvard University, Universidad Complutense de Madrid & Berkman Center for Internet and Society, Harvard University. <https://arxiv.org/abs/1801.02507>

More recently, new technology has emerged which might change the way we think about law. This technology is the blockchain, a decentralized, secure and incorruptible database (or public ledger) that constitutes the foundational tool for peer-to-peer value creation and trustless transactions. Introduced in 2009 with the Bitcoin network—as the underlying infrastructure for a decentralized payment system—the technology has rapidly evolved to acquire a life of its own.

Today, the blockchain is used in many other kinds of applications, from financial applications to machine-to-machine communication, decentralized organizations and peer-to-peer collaboration. As a trustless technology, the blockchain eliminates the need for trust between parties, enabling the coordination of a large number of individuals that do not know (and therefore do not necessarily trust) each other.

At the very end of the spectrum, the most recent blockchains have introduced the ability for people to upload small snippets of code (so-called smart contracts) directly onto the blockchain, for them to be executed in a decentralized manner by every node of the network. These rules are automatically enforced by the underlying technology (the blockchain), even if they do not reflect any underlying legal or contractual provision.

This is what brings us to the fourth phase—which is just beginning— involving a new approach to regulation, the code-ification of law, which entails an increasing reliance on code not only to enforce legal rules but also to draft and elaborate these rules. As a result of these technological advances, the lines between what constitutes a legal or technical rule become more blurred since smart contracts can be used as both a support and as a replacement to legal contracts.³

As mentioned by the authors in its article, the advent of blockchain technology has allowed the creation of “*smart contracts*” and created the real possibility of trustless transactions, peer-to-peer, which are letting the parties create “*legal contracts through technology, thereby effectively turning law into code*”.

It is useful to the understanding of that discussion bring the concept of blockchain:

*“The blockchain is a distributed, shared, encrypted database that serves as an irreversible and incorruptible public repository of information. It enables, for the first time, unrelated people to reach consensus on the occurrence of a particular transaction or event without the need for a controlling authority.”*⁴

And its technical concept:

Idem cit. 2.

YOCHAI BENKLER, THE WEALTH OF NETWORKS 62 (2006) (hereinafter “Wealth of Networks”)

“A blockchain is simply a chronological database of transactions recorded by a network of computers. Each blockchain is encrypted and organized into smaller datasets referred to as “blocks.” Every block contains information about a certain number of transactions, a reference to the preceding block in the blockchain, as well as an answer to a complex mathematical puzzle, which is used to validate the data associated with that block. A copy of the blockchain is stored on every computer in the network and these computers²⁶ periodically synchronize to make sure that all of them have the same shared database.”

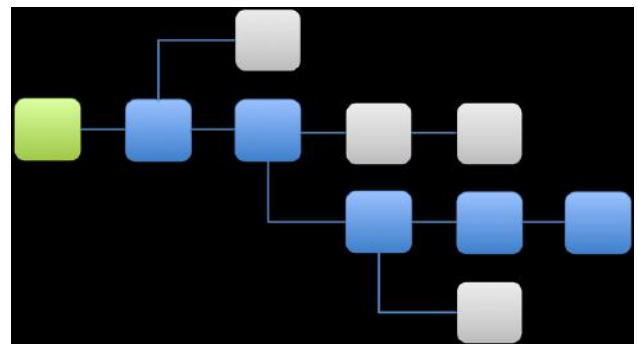


Fig. 1. A graphical representation of the blockchain

Going beyond, the thesis raised by the authors sustains that we are at the edge of a new system, called by them Lex Cryptographia – “*rules administered through self-executing smart contracts and decentralized (autonomous) organizations*”.

First of all, it is important to overlap the hodiernal concept of law adopted for this article, assuming here that Law is always referring a certain period of history, in a given society to a certain array of values – axiomatically ordained, designed and targeted by the members of that given society to be applied, coordinate and obey them. Objecting Reale’s Formula that “*Law consists of norms, whose understanding is not possible without taking into*

account their social connection and the values that are realized in it."

Assuming the culturalism proposed by Gustav Radbruch in its Philosophy of Law and the tridimensional Concept of Law presented by Miguel Reale, conceiving a polarity and dynamism between history and culture – fact-value-norm.

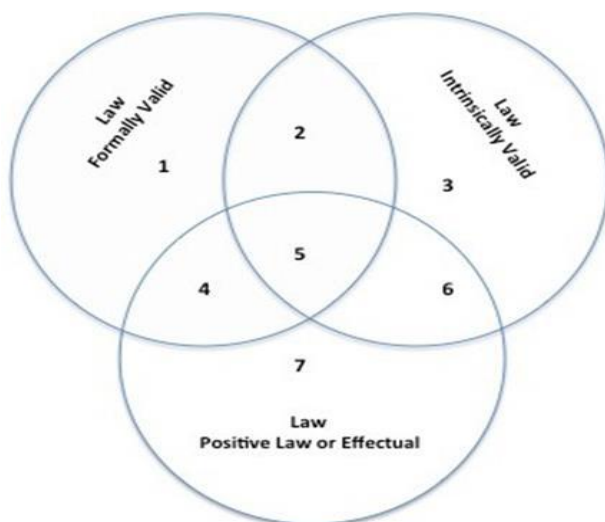
Law is a phenomenon of culture⁵ and, about Radbruch, *"the idea of Law is, without doubt, a value; Law, however, is not a value, but a reality referred to values, namely, a cultural fact"*.

Thus, the emergence of the so-called Lex Cryptographia cannot be classified as Law or, even, as a subsystem of Law. The confirmation of the existence of this new kind of rules and its particular way of construction – directly by digital codification, in some cases automatized using Artificial Intelligence –, notwithstanding its self-executing characteristic that imposes a *"pre ante"*

⁵ *"[...] culture could be viewed as an amalgamation of potentially related and relatively durable societal characteristics that describe an identifiable human population, such as a nation or ethnic group."*

enforcement of its provisions, this is not sufficient to elevate this praxis as a system or body of Law.

To clarify this division, it is useful to present some of the thoughts of the philosophy of Eduardo García Máynez and his radical perspectivism:



As he explains, the Law Intrinsically Valid is the Law as Just, fundamentally fulfilled of ethic; the Law Formally Valid it is the one in force, that has observed extrinsic criteria to be seen as in force; and the Positive Law, regardless its lack of observance of criteria to be seen as in

force, it is not if no the Effectual Law, that is to say, effectively performed in a given community.

So, it is possible to have a positive law regardless of its absence of force – here understood as a set of norms that haven't observed formal and extrinsic criteria of a given system of law of the sovereign state.

The simple emulation of rules set in a digital codification, despite its appliance and enforceability, is far from the creation of a body of law, because, as mentioned above, the lack of legitimacy and the absence of a given sovereign state to give force moves away from any possibility to classify those rules as a system – or even a subsystem – an of law.

The precipitation of this new set of rules and the possibility of rulemaking by machines with artificial intelligence brings a huge sort of problem for the national systems of law and their correlated states.

Furthermore, it is preoccupation that machines can automatically change or reset rules that are self-applicable and has, in many cases, auto- enforceability.

Looking ahead, these digital autonomous rules are challenging many of the rights of people in many states, considering an array of points of view – e.g., consumers,

small companies, minors, and persons with relative capabilities (i.e., in the law sense).

As mentioned in the article discussed here, these kinds of problems are not new. In the emergence of new technologies states are defied to find out solutions to constrain the agents of the market to observe and obey their system of law – e.g., Communications Assistance for Law Enforcement Act (CALEA).

The United States has made several restraints to the communications providers in order to control risks of inobservance of law and to reinforce the persecution against criminals and terrorists.

Thus, the usual forms of controlling and regulation, e.g., using of coercive force, financial incentives and disincentives, social pressure or pressure over the intermediaries and providers of connection are under scrutiny now, regarding the challenge to trigger and restrain a new technology that is spread out in many decentralized computers and networks.

The main objective of this essay in dialogue with the aforementioned articles is to consider and weigh that despite the irradiation and effects that this new form of production contracts and rules – that, as mentioned, can be produced digitally and independently by machines with self-coerciveness – cannot be assumed or confused with a system or body of law.

The fact that the deployment of technologies and the use of Internet networks can create an environment that commercial provisions translated to a digital code that can restrain human behavior bring serious concerns to all.

The fact that, practically, everyone can create a digital code – and in this sense produce rules self-executed and with coercive effects – is an enormous challenge to defeat.

Considering a level of knowledge, anyone can modify or implement new digital codifications, creating “smart contracts” that can regulate and shape the behavior of users in the Internet network. It is not much to say that an important part of the assets and lives of many are submitted or even contained in the virtual world.

Blockchain technology can impose limitations to individuals and enforce its provisions ex-ante, taking into consideration the fact that those smart contracts can avoid breaching of rules – considering the most majority of individuals that lack the knowledge to unpin from the obligations imposed by these new technologies.

Another point to mention is that these new technologies once used by large multinational companies with the support of their home nations can reproduce a new form of colonization over undeveloped nations.

“The idea of moral character as the nucleus of civilized conscience-consciousness was developed in two directions. On the one hand, a moral character defined the international jurists themselves and bound them into a transhistorical fraternity of aristocratic heroes. On the other hand, it was projected on collectiveness and gave the measure whereby their civilization could be measured to determine, for example, whether they qualified for entry into the family of nations. In its former role, moral character was emphasized in the discussions of the writings of earlier jurists. Here is how Sir Travers Twiss discussed Vitoria’s and Las Casas’ defense of the Indians:

It is difficult for us, in the present age, to measure the degree of courage and noble principle which impelled these excellent monks to vindicate the right of the oppressed against the authority of the Church, the ambitions of the Crown, the avarice and pride of their countrymen, and the prejudices of their Order.”⁶

Here is precisely interesting mentioning the advent of the new pivoting of the so-called Non-Fungible Tokens (“NFT’s”), in our view, this can mean an entire revolution in the intangible assets and, even, in real assets that could be identified and traded by an NFT.

NFT’s could be defined as a digital asset, under a codification-based computational blockchain ledger that can demonstrate the ownership and authenticity of the

related asset that is used to frame. The idea of the classification as “non-fungible” is to differ from other digital assets – this role is not uncommon due to the regular use of public documents, that are emitted and custodies by public institutions and authorities. An NFT providing it is a unique asset—for example, real property titles, cars, houses, and other merchandise, as well as digital assets such as images, documents, videos, and tweets can represent almost anything.

The use of blockchain technology with this particularity of NFT’s can accelerate and even eliminate all kinds of intermediaries and the easy possibility to fraction the ownership can build a myriad of utilizations.

In the sense of Law this technological revolution can bring back operative areas and businesses declared as dead (like music companies, editors, “printers”, publishers), due to the use of those intangible assets that can be framed, restricted, charged, and pursued in any platform all around the world.

The Gentle Civilizer of Nations – The Rise and Fall of International Law 1870-1960 – Martti Koskenniemi – Hersch Lauterpacht Memorial Lectures

“Just about every industry has been significantly transformed in the past few decades. But few have been as disrupted as the music industry. Everything seems to be changing at once, from the way content is produced and delivered, to the sources of revenue and profits. Digital technologies, - the Internet, smartphones, cloud computing, ... - have turned dollars into pennies. Now, blockchain and related technologies may once more play a major role in the music industry, - this time helping to turn those pennies back into dollars.

We’re truly surrounded by music as never before, - in a wide variety of styles; in physical and digital formats; over the Internet, satellite, and broadcasts; in mobile devices and home music systems. But the shift from physical to digital, and then from downloads to streaming have wreaked havoc on the business of music. US retail revenues of recorded music were close to \$14 billion in 1998 before starting their decline. According to the Recording Industry Association of America (RIAA), revenues fell from roughly \$12 billion in 2006 to around \$7 billion in 2010. They stayed flat at \$7 billion through 2015, starting to increase in 2016 mostly due to a growth in paid streaming music subscriptions. Revenues are expected to be around \$8 billion in 2017.” (Irving Wladawsky-Berger, former VP of Technical Strategy and Innovation at IBM - <https://open-music.org/blog/2018/1/8/blockchain-and-the-music-industry-turning-pennies-into-dollars>)

None of the bodies of laws are prepared to deal with this innovation, in this regard it will be necessary plenty of new rules and procedures to regulate and systematize the application and use of NFT's. Many questions arise in a prompt look, the NFT will be treated as a commodity or

security? In the case of intellectual property do the transference of the ownership of an NFT will carry the intellectual property together – including the right to use, copy, display and modify the content?

Some other issues will be in need to deep scrutinized like cybersecurity (regarding the protection of passwords and movement of the assets), regulation against misusing in money laundering, yet the using of those assets as transference of money, profits and dividends to avoid taxation and other compliance duties before national authorities around the world.



Fig. 2. NFT Trasaction Value

⁷The numbers are soaring and the changing of use in the markets will pressure all the regulators to properly address the new set of contracts and rights emerging from NFT's uses.

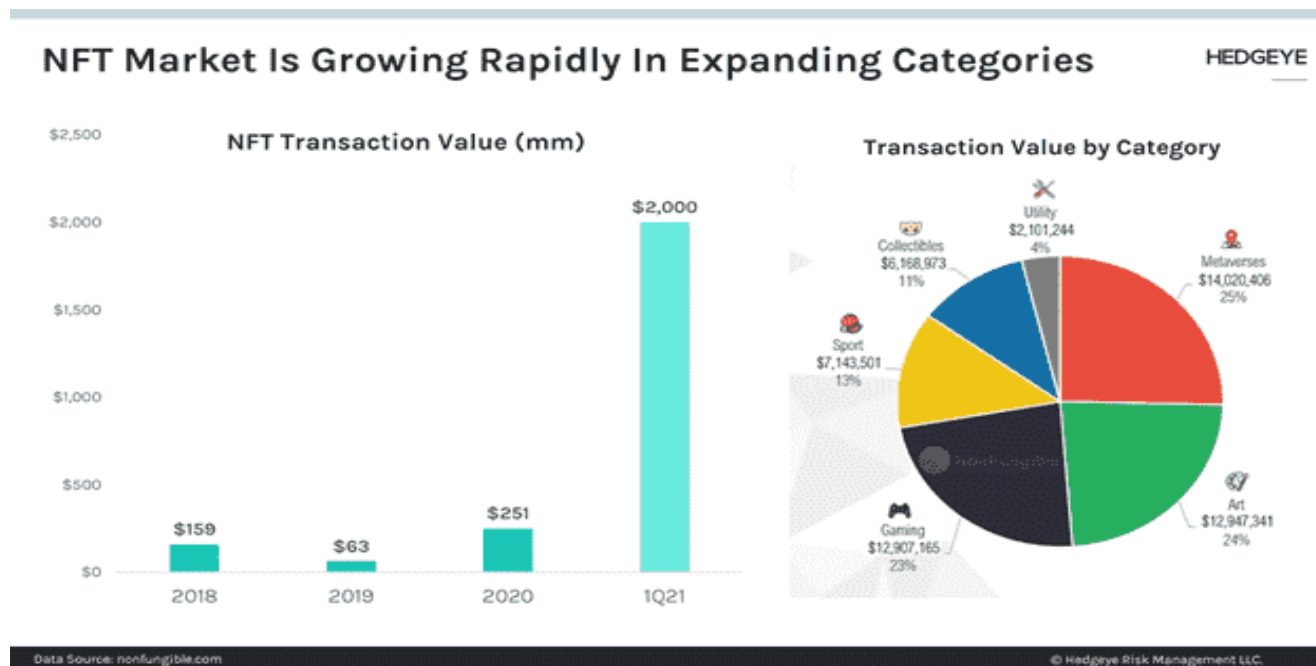


Fig.3. NFT_Collectible TokensMarket Capitalization

⁸So, notwithstanding our understanding that blockchain technology does not represent a new body of Law, it is clear that a new revolution in contract tools ⁷<https://www.forbes.com/sites/youngjoseph/2021/03/29/nft-market-rages-on-nfts-market-cap-grow-1785-in-2021-as-demand-explodes/?sh=409113167fdc>.

⁶<https://app.hedgeye.com/insights/99358-chart-of-the-day-the-nft-market-is-growing-rapidly?type=macro%2Cmarket-insights>.

and businesses will represent a complete change in the way regulators and authorities may operate from now.

Another aspect that concerns is that those new appliances can deeply amplify the distance between developed and underdeveloped countries, meaning new kinds of domination and increasing the social differences and distribution of wealth.

We are on the edge if not well addressed by nations before one of them never imagined tools to impose culture and purposes over non-prepared nations, meaning the worst forms of control, domination, and in the final sense, colonization.

In a world that is seeing pandemic crises, proxy war out of control of failed states, immigration of millions and a lot of pressure over social support in developed countries, added by this new division of work and a profound relegation of millions of adults out of these new technologies fields – representing that some are very well paid and becoming rich but millions are not prepared to

deliver the required works and knowledge of this new industry.

These problems will test and challenge the body of Law of all countries, one of the tasks that will take huge efforts will be the definition and coordination to mitigate the overlaps in legislation to avoid the usage of agents transitioning among jurisdictions looking for better places to mitigate taxation, cover illegal usages and maximizing abuses over consumers and users.

In the proper field of legal theory, relying on a type of regulation of transactions and relations among physical persons, entities, companies, machines and public institutions shall impose an unimagined plead of gaps and questions over practical interpretations and applications of the commands carved in digital “smart contracts”. All sorts of designed clauses are made to oblige the signors of a contract to observe some array of obligations (command) and to suffer punishment for breaches (control).

We are far distant from a legal theory establishing or even proposing a technical procedure to interpret a legal disposition – mainly because in a semiotic sense the symbolic production of meaning involves a plenty of usage of tools for communication and a kind of poetic-creative interaction between the parties to construct the scenario that will frame the expected behavior.

So, if it is no feasible assume a theory to stabilize a proper interpretation it seems practically more difficult – in opposition on what mainly all prophets of blockchain

and technology revolution reverberates – to determine what would be the correct interpretation for dispositions that may will be under dispute between a non-observed contract disposition.

As briefly showed above, it seems for us that we are not before a new body of law, but, like any revolution the “*earthquake*” will shake down many procedures and challenge institutions, governments and all actors dealing with those tools in near future, this will demand an enormous work to adapt and build regulations that can absorb those contemporaneous ways to contract, protect individuals, social interests, human rights and soften the arisen differences that will surge among citizens and nations.

ACKNOWLEDGEMENTS

An acknowledgement section may be presented after the conclusion, if desired.

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