Dr. Vladimir Troitskiy[1], PhD in law, MBA
troitsky@lex-intl.com

"Blockchain as a social regulator: elaboration of theory foundations"

Blockchain-based protocols often referred to as smart contracts are hoped to make entering and maintaining contractual relationships more convenient and secure by adding a technological layer. Looking wider, this blend of peer-to-peer networks, public-private key cryptography, and a set of rules aimed to manage how information is recorded in the shared database and verified by the network can is a new "consensus mechanism". The technology we are talking about may allow "meeting of the minds" of unlimited numbers of people, accurately capturing each and every intent, being indicative of a parties' *Will* and producing the mathematical truth. The key issue for the proposed research is whether the blockchain law theoretically can replace conventional law or not and if it can, how it is to look like and what are the factors affecting the transition process.

The move towards an automated decentralized social regulation system based on blockchain consensus mechanism, if theoretically viable (at least in part), can become a self-driven autonomous process that rolls, no matter if scholars, lawyers, politicians or anyone else like it or not and hence modeling and researching it presents theoretical and practical value. Structural and functional comparison of blockchain regulation to other regulatory mechanisms are the core for the proposed analysis.

Starting comparison with public international law seems reasonable. Though public international law is undoubtedly created directly by states and its analogs (such as Holy See) or indirectly through their derivatives (International organizations), as a regulatory system it has much in common with blockchain regulation. The sovereign equality of all States as enshrined in the UN Charter means that none of the states has superpower to regulate the behavior of others, neither do other subjects of international law including the UN. Instead of having supreme regulator, international law entitles states to set rules through consensus mechanism which they are to create. The absence of enforcement mechanism supported by higher power is a logical extension of absence of supreme regulator and once again states together are to somehow make the rules work. Similar features can be attributed to the "blockchain law". We should agree that there are problems related to this mechanism's efficiency, however, one cannot deny that almost 65 years of international law history prove the ability of an autonomous system of law to exist without supreme regulator.

Other comparison objects are to include Lex Mercatoria, customary law, industrial and professional self-regulation, religious, corporate norms and other examples of regulative environment not directly related to the state. Making wide analysis of Blockchain-based consensus mechanism nature, its successful and unsuccessful implications, and its structural comparison to existing autonomous regulative systems will help answering the question on whether the autonomous blockchain law can theoretically substitute the conventional law in full or to some extent and how it can affect the legal systems, which besides the norms include the process for interpreting and enforcing the law.

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[1] St. Petersburg State University, associate professor