

Chapter 6

The Legality of Smart Contracts in a Decentralized Autonomous Organization (DAO)

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ABSTRACT

This chapter discuss the legality of smart contract in a decentralized autonomous organization (DAO). The regulation framework of blockchain is developing rapidly with many countries such as Malta and Estonia utilizing and allowing the use of blockchain. While many researchers have discussed the legality of smart contract, its relation to DAO as one of blockchain's applications is rarely discussed. There are three issues discussed in this chapter: the definition of DAO, the definition of smart contract, and the legality of smart contract in DAO. Each country has their own legal threshold of a contract's legality, but there are generally five elements in a legal contract, namely offer and acceptance, consideration, intention, certainty, and completeness. It is possible for the smart contract to fulfil the five legal elements of a contract. As there are different regulations in different countries, there may have been different elements to the law. In conclusion, the legality of smart contracts, like blockchain itself, depends on who uses it, where it is used, and how it is used.

INTRODUCTION

The world has been through a very rapidly changing technology improvement. One of the most discussed recent technology breakthroughs is Decentralized Autonomous Organization (DAO), an organization that is decentralized and autonomous. DAO is a type of application that can be made in blockchain. Hsieh (2018) defined DAO as a “novel form of organizing”, by noting the ability of the DAO codes to

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have a better corporate governance and its potential to be a better form of organization. A research by Kondova and Barba (2019) stated that DAO is an organization with functions similar to that of a company except that it is running on blockchain, which retaining blockchain's features such as autonomous and decentralized. The autonomous feature in DAO is shown in how the company process is taking action. There are still real people inside of DAO, including the token or shareholder, but the execution of the decision taken based on consensus of the them is done in full autonomous.

The legality of DAO itself is still unclear in most countries and whether it complies to the legal framework is unclear, and one of the many problems are the definition (Chohan, 2017). Jentzch (2017) stated the dependency of DAO on how it is used, where it is used, and who uses it. This indirectly clarifies the various kinds of DAO as well as its definitions. In discussing the definition of DAO, there are a few important aspects. The first is its mechanism as it helps in creating understanding on how it works. The second is the difference between DAO and virtual company. The last one is to discuss the examples of existing and newer DAOs, to completely understand how DAO has evolved and how it is used in the present time. DAO is built by utilizing smart contract, which is a code programmed that can automatically execute the contract in it after the pre-determined terms are met (Sadiku, Eze, and Musa, 2018).¹ Smart contract is made in blockchain and thus retain blockchain's features (Gilcrest and Carvalho, 2018). Just like DAO, there are no set definition of smart contract, moreover the set consensus is on the legality of smart contract (Syllaba, 2020).

As more and more DAO emerges and smart contract is utilized, there is a need to explore the legality of smart contract uses in DAO. To do that, there are some issues that need to be addressed. The first is, like DAO, which is to determine the definition of smart contract and the technical aspect for making the smart contract. The second issue is to address the issue in the uses of smart contract as a contract in general in order to get idea on how it will work in DAO. Following the second issue, this research aims to discuss the importance of smart contract and how it is utilized in DAO. Lastly, it also discusses the legal framework of smart contract and whether it fulfills the criteria of a legal contract. The discussion in this chapter will proceed by discussing two big issues, and those are the definition of DAO and the legality of smart contract. The definition of DAO varies from the uses of DAO, and the various forms of DAO make it harder to discuss the legality of smart contract. Thus, to discuss the legality of the smart contract in DAO, a common understanding on the definition of DAO is needed. Therefore, the first subchapter will discuss on the definition of DAO, followed by the important issues that will support the definition consisting of its mechanism, the difference between DAO and virtual company, and the examples of DAO. The next subchapters will discuss deeply on the issues of smart contract such as its definition, the technical aspect and the issues in the uses of smart contract, and the importance of smart contract to DAO. Finally, the discussion can proceed to the legal framework of smart contract, which allows these discussions to support the discussion on the legality of smart contract used in DAO. The objective of this chapter is to have an understanding in the legality of smart contract uses in DAO. Achieving this objective will contribute more to the advancement of research on smart contract and DAO in general.

THE DEFINITION OF DAO

DAO runs on a blockchain, a technology that is also called as Distributed Ledger Technology (DLT) (Walch, 2017). Hüllman (2018) described blockchain as a distributed ledger with immutable data, meaning that the data stored in blockchain ledger will stay unchangeable and be a trustable source regarding any

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