# Tokenizing Startups, from Utility Tokens into Security Tokens

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**Abstract.** Blockchain is a revolutionary and commonly used technology nowadays. Blockchains are used in many fields, especially financial ones. Tokens are one application of blockchains that represents assets or access rights. Smart contracts and an underlying distributed ledger are used to manage tokens. In this paper, the differences between and the usages of utility and security tokens are discussed in depth. The problems of utility tokens and the ICO boom are mentioned as well. We also discuss how security tokens outweigh the benefit of utility tokens where they can be used by companies and startups as a standardized solution without suffering from utility tokens' problems.

**Keywords:** utility tokens, security tokens, blockchain, ICO, STO, ICO boom

## 1 Introduction

The technology beyond the cryptocurrencies we have nowadays is blockchain. Blockchain is a way of having data saved permanently, securely, and in a way that prevents future changes to it. As its name suggests, it is a chain of blocks in which each block on the chain contains a number of transactions [1]. Distributed ledger technology (DLT) is the technology on which blockchain depends. We can think of DLT as a database having many copies across the network and controlled by protocols in a decentralized way [2]. Blockchains are highly secured because changing a block is easily discoverable. What makes it somewhat impossible to change transactions in a block of a blockchain is that any change requires changing every previous block in the chain, across all of the distributed versions of the chain, and this process becomes harder with time since the chain is getting longer.

### 1.1 Properties of a Distributed Ledger Technology (DLT):

Distributed ledgers possess many properties that make them so important in technology where each blockchain is a DLT [2]. DLT can be used in many applications, not only the blockchain ones [3]. Being programmable is one of DLT's most important features. It means that DLTs can be automated and self-contained, and processes such

as validation and confirmation can be performed without human interference. The distributed feature is the data being saved to many devices where each device has the same copy of the ledger. This feature makes DLT immutable and immune to losing data or service by shutdown failure. Since security is important, DLTs have each asset encrypted and can be accessed and changed only by their owner. In regard to privacy, users can create their accounts anonymously, and ID verification is not required. Consensus is the technique used in LDTs to approve an action by the agreement of all users in an automated protocol. The final feature we have in LDTs is date and time stamps available in all actions. Those time stamps can be used to determine each action time and prioritize the validation and verification processes.

## 1.2    Tokens

People are using the terms "coin" and "token" as if they were the same. Nevertheless, they are not the same, but the boundaries between them are not clearly defined. Nowadays, most industry insiders refer to cash as coin and anything else as a token [4]. In the next sections, the two different types of tokens, utility and security, are discussed.

### 1.2.1    Utility Tokens

The tokens that a company distributes in an initial coin offering (ICO) are called utility tokens [5]. We can think of utility tokens as a digital coupon the user can exchange to get a product or service from the issuing company. However, utility tokens are not coins or money since you can use them only to access specified services or products.

### 1.2.2    Security Tokens

The process of issuing security tokens by a company is called security token offering (STO). Security tokens have value based on real-life assets and, hence, have regulations to follow [6]. One example of assets on which security tokens might be based is shares. Owning a security token is the same as owning the asset on which it is based. Taking a security token based on shares, for example, gives the owner the same legal rights as buying the shares physically and, as a result, being able to share in profits and to vote as well.

## 1.3    The ICO Boom

The unprecedented boom in the ICO market made about $5.4 billion and over $14.2 billion in 2017 and 2018, respectively [7]. By studying the top 10 ICOs from a funding point of view [8], it was found that about 800 ICOs were been offered in 2017 with a total value of approximately $20 billion. The investigator [8] found that if a person had bought the top 10 largest ICOs in a token sale period, he would have earned about 60 percent off of his investment in October 2018. Nevertheless, the study shows that 60

percent of the best performers actually reflected negative numbers, and 10 percent of the best of the bunch suddenly vanished! This made us think about the high risk and high reward that initiated the entire ICO boom in which risk is more likely. In light of the lack of regulations for utility tokens, those in charge, such as developers and engineers, were left to deliver the high and unanticipated incoming balances with no financial experience to do so.

## 2    Discussion

We discuss in this section the use of utility tokens in startups and utility tokens' usefulness. Next, we discuss how the security token can achieve the same goal by overcoming the problems of utility tokens that we noticed in the ICO boom.

Startups can create utility tokens to allow their customers to buy products or services using those tokens. In the ICO, the startup sells utility tokens to investors whereas the investors will use those tokens as a means of payment on the platform developed by the issuing company. This is considered an efficient means of obtaining financial support. For instance, a Niuversity token could be used to gain access to courses at Niuversity. In case you want to use a Niuversity token to acquire a product not provided by Niuversity itself, you would have to exchange it against either fiat money or a crypto-coin first. Utility tokens can be exempted from federal securities laws if set up correctly because they do not follow any regulations. Some of the most important roles for utility tokens are (1) giving certain rights such as owning a product, (2) exchanging for certain services, and (3) using them as rewards. Though utility tokens are useful, they have problems and risks as well [9]. The problems are (1) not having a natural way to increase the token's value, (2) the effect of a project's success on the token value, (3) the appearance of liquidity problems when not reaching the required goal, and finally, (4) tokens holders cannot make any decision regarding the project, no matter how many tokens they have.

Security tokens follow regulatory requirements. Security tokens' main and most distinguished role is in representing real-life investment digitally. STOs must be registered legally to the appropriate authority, which makes them safer while the chances of being used to swindle others are less. Niuversity, as an example, can make security tokens representing its shares. In this case, the tokens' owners will have all legal rights as if they owned real shares. Since security tokens are regulated and have real assets backing them up, they solve most of the problems associated with utility tokens, making them the perfect candidate for fundraising with lower risks for both investors and startup owners [6] [10].

## 3    Conclusion

In this paper, we talked about utility tokens and security tokens. We discussed how utility tokens could be used to gain profits and obtain support for startups while being aware of their risks at the same time. We mentioned how security tokens solve some of

the problems of utility tokens by being subject to regulations, and as a result, give holders the ability to make decisions. We believe that tokenizing startup shares would be a revolutionary solution for fundraising in the Arab world instead of the use of utility tokens.

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