SHARIYAH
REVIEW BUREAU

DECODING COMPLIANCE OF AN ICONIC OFFERING (ICO)

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Summary

Initial Coin Offerings are an innovative way to raise funds by issuing tokens through blockchain technology. The issued tokens can vary widely in their design and function. Some of the common types of tokens include: work tokens, utility tokens, asset-backed tokens, revenue tokens, equity tokens, buy-back tokens. In theory, a token holder can gain a share in equity, have rights to access as service or utility, have a claim on an asset or have entitlement to profits or payments. It is concluded that the flexible nature of ICOs and tokens allows them to be structured in a Shariah compliant manner. Furthermore, screening criteria are proposed for ICOs to ensure Shariah compliance of the project and company.

Introduction

Companies have been raising funds through traditional methods such as IPOs (Initial Public Offering), Sukuk issuances, lending or pre-selling goods (Salam contracts) and services (Forward Ijarah). The innovation of blockchain has given rise to a new model to raise funds called Initial Coin Offering (ICO). However, due to the infancy of ICOs and the lack of information available, the Shariah compliance of ICO structuring has yet to be determined. This short treatise defines ICOs, expounds on how they function and further analyses the tokens issued through ICOS. Thereafter, a discussion on the Shariah compliance of such endeavours is presented.

DEFINING INITIAL COIN OFFERINGS (ICOs)

An Initial Coin Offering (ICO) is a way for companies – usually start-ups – to obtain funding. With an ICO, the provider issues digital tokens by means of blockchain technology. ICOs have a cross-border nature: in principle, anyone with Internet access and a digital wallet can buy these tokens. The tokens may sometimes be purchased in euros or dollars, but more frequently in cryptocurrencies, such as Bitcoin or Ethereum. Stellar and LHoFT define an initial coin offering as an event in which an organisation sells digital tokens for the purpose of obtaining public capital to fund software development, business operations, business development, community management, or other initiatives. A token is a cryptographically secured digital representation of a set of rights. Depending on the token, this could include the right to access and use a network or software application, the right to redeem the token for a unit of currency or a good, the right to receive a share of future earnings, the right to vote on decisions made by the organisation, or more.

However, most ICO tokens currently do not offer voting rights, ownership rights, or rights to a share of future earnings. Instead, they have utility: they convey rights to access, use, and/or consume the organisation's service or product. ICOs provide an alternative, accelerated option to raising funds for a business[1].

An ICO is a fundraising method used by a project, venture, or decentralized application ("dApp") whereby digital tokens are issued to ICO participants, typically, in exchange for other digital tokens such as Bitcoin or Ethereum's Ether. ICOs have quickly gained popularity as a means of fundraising in the start-up technology sector, but are now becoming relevant to broader business opportunities and sectors. ICOs are comparable to both initial public offerings on a stock exchange and crowd funding initiatives in that they raise funds from the public, albeit in ICOs investors receive digital tokens as opposed to equity shares or rewards[2].
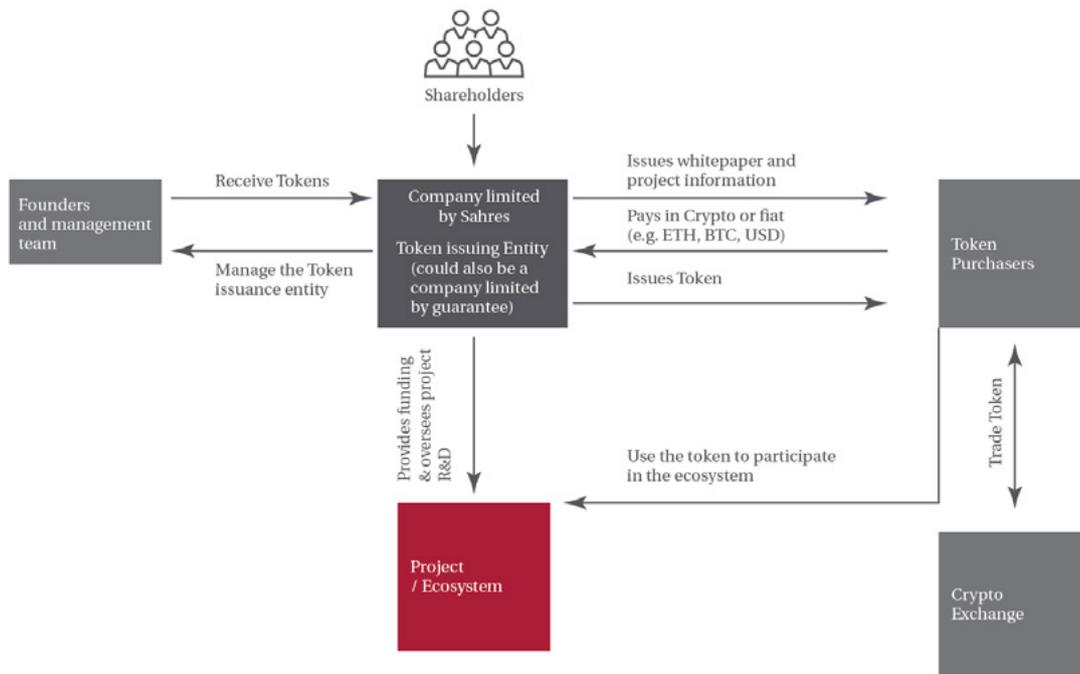
1 Lavie, R. (2017) 'ICOhhh', The Fintech Times, January 2018, Available from: https://thefintechtimes.com/wp-content/uploads/2017/12/16-2017_The-Fintech-Times_December.pdf

2 Jones Day (2017), Initial Coin Offerings – A Singapore Perspective [online], Available From: http://www.jonesday.com/files/upload/initial-coin-offeringsa-singapore-perspective.pdf

HOW DOES AN ICO WORK?

ICO funds are usually received in Bitcoins (BTC) or Ether (ETH). All token sales request cryptocurrencies – primarily either Ether or Bitcoin – in payment for the tokens. Fiat currency is generally not accepted. Given that most token sales are for Ethereum based Dapp tokens using the ERC-20 standard, Ether is the most common method of payment.

The project creates a Bitcoin or Ethereum address for receiving funds and displays it on a web page. This is like opening a bank account, and displaying it on a web page for people to send money to. Investors send BTC or ETH to the published address, in return for the new tokens. The project uses the BTC or ETH to pay staff or sell the cryptocurrency for fiat currency on a cryptocurrency exchange to fund the project[3].

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3 https://www.bitcoinisle.com/2017/09/06/need-to-raise-capital-funding-
think-ico-or-ito-not-ipo/
https://bitsonblocks.net/2017/04/25/a-gentle-introduction-to-initial-coin-
offerings-icos/

DIFFERENCE BETWEEN TOKENS AND COINS

It's important to distinguish between coins and tokens, as the two terms are often interchanged in media coverage. A coin is a unit of value native to a blockchain. It is a means of exchange within the blockchain to incentivise the network of participants to use the blockchain. Cryptocurrencies Bitcoin, Ether, Ripple, and Litecoin are all examples of native coins. The sole purpose of a coin is to exchange value, and it has limited functionality beyond that.

The Ethereum protocol's currency, Ether, functions as a coin for that blockchain. However, the Ethereum protocol has been widely lauded for its additional smart contract functionality. This functionality allows logic to be coded into the blockchain, creating the ability to replicate, for example, business processes that execute automatically. Smart contracts additionally allow the developer to create a token on top of the protocol. The token can have a functionality beyond an exchange of value - it can represent any asset or functionality desired by the developer. When one creates a token in Ethereum, it is created as a smart contract, with each token being governed by a single, unique governing contract.

It is this governing token contract that manages the transfer and tracking of each token's value. This is different than a coin, where the transfer and tracking of the coin is managed by the blockchain protocol directly. When you buy, sell or exchange tokens, the transaction fee to have the transaction processed on the blockchain is in Ether.

Startups and mature companies have taken advantage of Ethereum's smart contract functionality by building decentralized applications (Dapps) on top of Ethereum and creating their own unique tokens. Over time, a token standard called ERC-20 has been adopted which enables interoperability of tokens on the Ethereum network. The token standard governs a set of functions for each token, which in essence creates a template by which other ERC-20 compliant tokens can be cloned in a relatively simple manner. Companies that create tokens using the ERC-20 standard benefit by being able to interface easily with other tokens (for example, exchanging one token for another). In turn, this network effect increases the value of individual Dapp tokens. The majority of ICOs in the market today are the sale of tokens per the ERC-20 token standard for an Ethereum based Dapp[4].

To clarify terminology, a coin is a cryptocurrency that is native to its blockchain and can represent a store of value, a unit of account or a medium of exchange. In the Bitcoin network, the coin is bitcoin [BTC], in the Ethereum network, it is Ether [ETH]. Typically, there are only two things that can be done with a coin: (i) to send it to someone else and (ii) to pay for transaction fees in the system. If it can do more, it is a token[5].

4 Deloitte (2017), Initial Coin Offering – A new paradigm [online], Available from: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-cons-new-paradigm.pdf
5 Hillebrand,M. (2017), An Introduction to Initial Coin Offerings in Project Finance, Baden-Wuerttemberg Coperative State University Villingen-Schwenningen, Available from: https://www.aparecium.de/app/download/5810645565/An+Introduction+to+Initial+Coin+Offerings+in+Project+Finance_V1.0.pdf

DIFFERENT TYPES OF TOKENS

Tokens vary widely in their design and function. Usually they represent a (prepaid) entitlement to the service to be developed, which may be a reward, or even have no value whatsoever. It may also be that they give entitlement to a share in a project or a portion of the expected returns[6]. Different tokens have different functions and purposes. They represent and give access to different things. Some of the common types of tokens are as follows[7]:

1. Work tokens

Work tokens give owners permission to contribute, govern, and/or "do work" on a blockchain. An example would be Maker (MKR), which gives owners the ability to govern an organisation that manages the stability of an underlying coin (DAI)[8].

2. Utility tokens

The utility tokens are rights to services or units of services that can be purchased. These tokens can be compared to API keys, used to access the service[9].

3. Asset-backed tokens

The asset-backed token represents a claim on an underlying asset, and to claim the underlying asset one sends the blockchain asset (i.e. the token) to the issuer.

4. Revenue Tokens

Token issued under the promise of participation in future revenues, even though there typically is no legal obligation for companies to honor such promises. Participation percentages and timing are almost always left undefined.

5. Equity Tokens

Tokens said to represent equity in the issuing company, giving token holders votes as shareholders, participation in future dividends, and supposedly ownership of the company as well. (e.g. Lykke: LKK, market cap USD 410 million).

6. Buy-back Tokens

Tokens issued under the promise of appreciation backed by promises from the company to repurchase and destroy tokens once sustainable revenue materializes.

6 AFM (2017), Initial Coin Offerings (ICOs): serious risks [online], [last accessed 30th January 2018], Available from: https://www.iosco.org/library/ico-statements/Netherlands%20-%20AFM%20-%20Initial%20Coin%20Offerings%20Serious%20Risks.pdf

7 Kruger, A. (2017), An Overview of Cryptocurrencies for the Savvy Investor [online], Available from: https://hackernoon.com/all-you-need-to-know-about-cryptocurrencies-an-overview-for-the-savvy-investor-bdc035b14982

8 Little, W. (2017), A Primer on Blockchains, Protocols, and Token Sales, Available from: https://hackernoon.com/a-primer-on-blockchains-protocols-and-token-sales-9ebe117b5759

7 Benoliel, M. (2017), Understanding the difference between coins, utility tokens and tokenised securities [online], Available from: https://medium.com/startup-grind/understanding-the-difference-between-coins-utility-tokens-and-tokenized-securities-a6522655fb91

WHAT DOES A TOKEN HOLDER GET?

A token represents rights and obligations. A token on its own has often no value outside the system it is used in. A token represents something other than its physical form[10].

The tokens under an ICO will typically entitle holders to a right derived from the underlying asset or business arrangement, for example:

- The right to a profit or asset (such as the distribution of actual profits or through the repurchase and the virtual destruction (termed 'burning') of repurchased tokens which theoretically reduces supply, so increasing the token price).
- A right of use (say of a system or particular service offered by the issuer).
- Voting rights (for example, as a participant of a decentralised currency exchange operated by the issuer)[11].

In a token sale, the company has a unique technology and business value proposition that relies on the token as a core part of its future operating model. Most companies have developed a Dapp where the custom token provides a unique utility in using the company's product. The company sells tokens to gain stakeholders in the product ecosystem, and the stakeholders use the tokens to interact with the product.

The key difference here is that the token provides utility to any purchaser in the token sale. The token is sold as a way to incentivise new product users, participate with the ecosystem and augment the utility of their technology. When a token is sold, the company gains working capital from the sale of tokens. The purchaser, on the other hand, gains product value – not necessarily cash value – by being able to "spend" their purchased token. Other than those subject to a "lock up," tokens are exchanged freely using the Ethereum protocol so users also have the ability to trade them in for other cryptocurrencies or fiat if they choose.

10 Hillebrand,M. (2017), An Introduction to Initial Coin Offerings in Project Finance, Baden-Wuerttemberg Coperative State University Villingen-Schwenningen, Available from: https://www.aparecium.de/app/download/5810645565/An+Introduction+to+Initial+Coin+Offerings+in+Project+Finance_V1.0.pdf

11 Clifford Chance (2017), Initial Coin Offerings – Asking the Right Regulatory Questions [online], Available from: https://talkingtech.cliffordchance.com/content/micro-cctech/en/fintech/initial-coin-offerings/_jcr_content/text/parsysthumb/download/file.res/Initial%20Coin%20Offerings.pdf

ANALYSIS OF TOKENS IN SHARIAH

Initial Coin Offerings are crowdfunding and resource pooling mechanisms for projects, start-ups and ventures. Practically, token sales are fundraising events that can happen (1) before a company launches, (2) while a product is being built, or (3) after a product has been in the market for a while. Tokens which are issued as a result can represent almost anything depending on the structure and product. In fact, blockchains and the issuance of tokens are so flexible that they can almost be adopted to execute any structure, contract or product. As seen from the above literature, tokens can represent different things, give different rights and access to different utilities. The following is a list of different types of cryptocurrencies and tokens and their industry[12]:

1. PoW Currency: Bitcoin, Litecoin, Dogecoin
2. PoS Currency: Decred, Peercoin, NEM (PoI)
3. Private Currency: Monero, Dash, Pivx, Bytecoin, ZCash, ZClassic, ZEN
4. Private Market: Particl
5. Private Communication: Mysterium
6. Interbank Settlement: Ripple, Stellar
7. Smart Contracts: Ethereum / Ethereum Classic / Expanse / Rootstock; Counterparty, Lisk, Tezos, Qbit, Aeternity, EOS, NEO, Stratis
8. BaaS: Stratis, Factom, NXT / Ardor
9. Social Media / Attention Economy: Steemit, Synereo, Incent, ReddCoin, DECENT, Akasha, Golos, TRON, Nexus, ONGSocial, Ties.Network
10. Prediction Market: Augur, Gnosis
11. Decentralized Exchange: Maker.Market, 0x, OpenANX, NVO, BitShares, Binance
12. Cloud Storage: Storj, Maidsafe, SIA, FileCoin
13. Cloud Computation: Golem, iExec
14. Media Content: SingularDTV, LBRY
15. Managed Funds: Iconomi, Melonport
16. p2p financial services (insurance, lending): WeTrust
17. Gaming / betting platform : GameCredits, Round, FirstBlood, PeerPlays, Edgeless, Wagerr, MobileGO
18. "Stable" coins: DigixDAO, Xaurum, Tether, MKR-DAI, Bancor
19. Knowledgebase: Lunyr
20. Crowdfunding : Wings, Starbase
21. Healthcare: Patientory
22. Music : Viberr, Artbyte, Soundchain, MusicCoin
23. Advertising : AdEx, BAT, AdChain
24. Renewable Energy: SolarCoin, PowerLedger
25. HR : Chronobank
26. Event Ticketing: EventChain, Aventus
27. Internet of Things : IOTA , WTC
28. E-Book Publishing : Authorship
29. Food Ecosystem/ Agriculture : Ambrosus, GrowChain
30. Student Jobs : BitJob
31. Telecommunications : Encryptotel, Ammbr
32. Crowd-vouching : Suretly
33. E-Commerce Cashback : ProCurrency
34. Search Engine : PreSearch

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12 Steemit (2017), Different types of Cryptocurrency and their industry, Available from: https://steemit.com/cryptocurrency/@sudipn749/different-types-of-cryptocurrency-and-their-industry

Only after screening a token can a specific Shariah opinion be offered on the product. The following analysis considers the different ways ICOs can be used and the status of the tokens issued.

1. Token as a Haqq (right) to a service

Utility tokens are the best examples of this. These tokens are not sales of Ijarah contracts as the type, time, amount of service are not agreed nor contracted in the token sale. The objective of the token sales is the token themselves as a right to a future benefit from the project. In fact, the value of the tokens themselves can increase giving an individual more utility from a single token. Therefore, the tokens in and of themselves represent a right to a service and not a contract of service. If the tokens entitle one to a service, use of something or utility on a protocol, then the utility tokens would be classified as al-Huquq al-'Urfiyyah (customary rights). According to the classical Maliki, Shafi'i and Hanbali jurists, such tokens would be classified as Māl (property). Contemporary Hanafi jurists like Mufti Muhammad Taqi Uthmani have also argued for such rights to be considered as Māl (property) in the present times. The classical Hanafi jurists recognised property only in material things which have tangible substance or corpus. Usufructs (Manāfi') and rights (Huquq) are not therefore, according to the classical Hanafi jurists, Māl (property). Under this interpretation of al-Huquq al-'Urfiyyah, the utility tokens can be sold and exchanged on secondary markets[13]. Tokens which grant licenses, access to services, tickets, access passes will all fall under this type of token.

2. Tokens as an equity

Equity tokens represent a share in a company that has completed a token sale . This will be similar to trading in shares and investing in IPOs. Another name for equity tokens are tokenised securities. Tokenised securities are, therefore, effectively similar to stocks and imply equitable interest and rights. Some jurisdictions like the US have recognised these tokenised securities as securities and now fall under the regulatory scope of the U.S. SEC since they have been deemed securities under securities laws.

From a Shariah perspective, the same rulings which apply to shares will apply to equity tokens. A business activity screening and a financial screening will be required before investing in such an ICO or network.

It is important to note that at times, an ICO will have a very few assets/digital assets or no assets at all. If there are a few digital assets, equity tokens will represent pro-rata equitable interest in the ICO. If there are no assets whatsoever and the ICO is purely a crowd-funding exercise where the underlying assets in the ICO will be cash only, the pooling of resources together can possibly create a shirkat al-milk (co-ownership) of the pooled resources evidenced by the equity tokens.

3. Asset tokens

Asset tokens are digital tokens that represent a physical asset or product. The tokenisation of assets allows greater liquidity[15]. Tokenisation is effectively securitisation. The transfer of ownership and risk can be realised through the transfer of the tokens. The owner of the tokens will have constructive possession (Takhliya) as discussed in AAOIFI standard No.18 on possession (Qabd). When trading such a token, the Shariah principles of buying and selling must be considered before trading such tokens[16].

13 Uthmani, M.T. (2014), Fiqh al-Buyu ala al-Madhahib al-'Arba'ah, Karachi: Maktabah Ma'ariful Qur'an

14 Research needs to be done to classify the exact Shariah nature of ownership possessed by the shareholders. Shareholders possess equitable interests in a corporation. This is obviously different to legal ownership and different to a standard debt claim. An investment in shares does not give the shareholder ownership of the underlying assets of the company. The assets of the company are owned by the company itself under its legal personality. The investment gives the shareholders rights over the company which resemble some of the rights enjoyed owners.

15 McKeon, S. (2017), Traditional Asset Tokenization [online], Available from: https://hackernoon.com/traditional-asset-tokenization-b8a59585a7e0 Lielacher, A. (2017), ICO Tokens 101: Understanding Token Types [online], Available From: https://www.bitcoinmarketjournal.com/ico-token/ Joshi, D. (2017), As financial institutions invest in blockchain tech, how secure is your information?, Business Insider UK [online], Available from: http://uk.businessinsider.com/secure-cryptocurrency-blockchain-technology-2017-10

16 Lielacher, A. (2017), ICO Tokens 101: Understanding Token Types [online], Available From: https://www.bitcoinmarketjournal.com/ico-token/ ownership of the underlying assets of the company. The assets of the company are owned by the company itself under its legal personality. The investment gives the shareholders rights over the company which resemble some of the rights enjoyed owners.

SMART CONTRACTS

Ethereum allows developers to program their own smart contracts, or 'autonomous agents', as the ethereum white paper calls them. The language is 'Turing-complete', meaning it supports a broader set of computational instructions.

Smart contracts can:

- Function as 'multi-signature' accounts, so that funds are spent only when a required percentage of people agree
- Manage agreements between users, say, if one buys insurance from the other
- Provide utility to other contracts (similar to how a software library works)
- Store information about an application, such as domain registration information or membership records.

Smart contracts help you exchange money, property, shares, or anything of value in a transparent, conflict-free way while avoiding the services of a middleman[17]. Smart Contracts (SCs)[18] are executable code contained within transactions on a blockchain that execute predefined rules based on a set of conditions (i.e. "contracts"). SCs, therefore, are transaction protocols by definition; they move assets between parties reliably based on programmed instructions[19].

With the combination of different tokens and the use of smart contracts on a blockchain, there is scope to develop different types of contracts and structures on a blockchain. It is quite possible to have Sukuk structures issued on a blockchain with the use of smart contracts. Other products can also be structured such as Takaful products, crowdfunding structures, microfinance models etc.

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17 Joshi, D. (2017), As financial institutions invest in blockchain tech, how secure is your information?, Business Insider UK [online], Available from: http://uk.businessinsider.com/secure-cryptocurrency-blockchain-technology-2017-10

18 A smart contract, also known as a cryptocontract, is a computer program that directly controls the transfer of digital currencies or assets between parties under certain conditions. A smart contract not only defines the rules and penalties around an agreement in the same way that a traditional contract does, but it can also automatically enforce those obligations. It does this by taking in information as input, assigning value to that input through the rules set out in the contract, and executing the actions required by those contractual clauses – for example, determining whether an asset should go to one person or returned to the other person from whom the asset originated. These contracts are stored on blockchain technology, a decentralized ledger that also underpins bitcoin and other cryptocurrencies. Blockchain is ideal for storing smart contracts because of the technology's security and immutability.

19 Little, W. (2017), A Primer on Blockchains, Protocols, and Token Sales, Available from: https://hackernoon.com/a-primer-on-blockchains-protocols-and-token-sales-9ebe117b5759com/startup-grind/understanding-the-difference-between-coins-utility-tokens-and-tokenized-securities-a6522655fb91

SHARIAH SCREENING OF ICOS

Before investing in any token, a Shariah screening is imperative. The ICO must pass the two traditional screens:

1. Business Activity Screening
2. Financial Screening

1. Business Activity Screening:

Initially, companies involved in any of the following activities will be filtered out as non-Shariah compliant:

- Conventional financial services (conventional banking and conventional investments)
- Trading in risk and Gharar (insurance companies)
- Gambling, Qimar and Maysir activities (casinos)
- Alcohol and prohibited beverages
- Pork related products and non-halal food production, packaging, processing or any direct activity linked to unlawful consumables
- Tobacco related products
- Illicit adult industry (pornography)
- Entertainment (music, cinema)

2. Financial Ratio Screening:

- Total interest and non-compliant activities income should not exceed 5% of total revenue.
- Interest taking deposits must be less than 30% of the market capitalisation
- Interest bearing debt must be less than 30% of the market capitalisation
- Total market value of non-cash and non-debt assets should be at least 30% of the total value of all the assets[20].

If an ICO passes the above two screenings, the investments in such an ICO can be considered Shariah compliant.

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[20] AAOIFI (2015) puts a condition that the total market value of non-cash and non-debt assets should be at least 30% of the total value of all the assets. Thus, if the primary asset of a company is neither cash nor debt, and the total market value of all non-cash and non-debt assets is at least 30% then the stocks of such company can be freely traded at any price.

Thus, a company with a composition of up to 70% cash and receivables is permissible to trade. A company with cash and receivables above 70% can only be traded in accordance with the principles of Bay al-Sarf (if cash is majority) or Bay al-Dayn (if receivables is majority).

CONCERNS WITH INITIAL COIN OFFERINGS

ICOs have become a synonym for hype, unjustified valuations and excessive risk. On the other hand, blockchain can increase project transparency, decrease investor risk and develop into an effective financing tool for quality blockchain projects[21].

The inherent nature, structure and use of ICOs must be analysed separately from fraudsters who use ICOs to usurp wealth of people to amateur investors speculating on tokens. The behaviours of such people are an extrinsic matter which would have separate rulings. Likewise, there could be certain activities of token issuers which may not be Shariah compliant. As the industry develops and more knowledge is gained, the Shariah principles regarding the industry will equally develop.

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21 Ernst & Young (2017), Initial Coin Offerings [online], Available from: http://
www.ey.com/Publication/vwLUAssets/ey-research-initial-coin-offerings-
icos/%24File/ey-research-initial-coin-offerings-icos.pdf

Conclusion

Initial Coin Offerings are an exciting and innovative way to pool funds together. Issued tokens can represent equity, assets, utilities or be considered as rights. The flexibility to structure ICOs and have tokens represent a variety of products give the possibility of Shariah compliant structuring of ICOs and token issuances. However, the infancy of ICOs and the expected action of regulators can alter the entire ICO industry. From a Shariah perspective, there is a possibility to structure an ICO in a Shariah compliant manner. Nevertheless, ICOs must be screened and reviewed by Shariah scholars before Muslim investors invest in any project.

ABOUT SRB

Since our humble beginnings more than 13 years ago we've grown to include more than 100 companies across a host of industries, thousands of transactional programs, multi-disciplinary teams and a combined scholarly workforce of 35 Shariah Scholars from 19 countries. And we're not done yet: our Shariah Advisory and Shariah Audit services will continue to improve—serving local and international businesses to help them maintain and manage Shariah compliance.

We've been preparing our clients for a new world in which Shariah Advisory rapidly becomes the currency of choice. From faster Certification programs, to direct Shariah Supervisory access, and perhaps most critically, navigating through the economic structures of clients offerings within a matter of days. We've have been working hard to help clients like you capitalize on opportunities in global Islamic financial markets.

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