



Crypto-Asset. How Does Shariah Matter?*

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Abstract

In the post-COVID era, it has further been observed that, fintech is extra-ordinarily among the fastest growing chapters in the eco-financial sectors and crypto-currency is not an exception. There are mixed views within the ambit of Shariah on the existing floating models of crypto-currencies bearing a common confusion on one's intrinsic value and thus, whether they are compliant with Shariah? If not, what, and how the Shariah alternative solution may be in meeting the global Halal sentiment? The idea of crypto-asset is a new dimension with hypothetical discovery, which is quite different in nature as to crypto-currency (CC). The existing model of crypto-currency does not require an underlying asset to back the operation, while a crypto-asset in contrast, requires an underlying valued asset to back the operation and thus, positioning one bearing own intrinsic value. This paper, however, seeks to analyse the model structure, operational mechanisms, and possible Shariah review of crypto-asset (CA) within the principle of *Maqasid al-Shariah*. The research is expected to adapt hypothetical and META approaches by concluding with possible Shariah compliant strategic solution to crypto-asset in harmonizing with the contemporary eco-appreciation. The result of this research may be an added value to the current post-COVID eco-paradigm in creating an eco-opportunity for every level of people within the spirit of *Maqasid al-Shariah*.

Keywords: Islamic, Shariah, Halal, Maqasid al-Shariah, Crypto-asset, Crypto-currency, Digital asset, Mechanisms and Shariah compliance

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Introduction

It has been popularly known that the conceptual paradigm of digital currency through bitcoin was first initiated by Satoshi Nakamoto in 2007 by using SHA-256 Crypto-asset hash function as its proof of work scheme through the blockchain technology. Nakamoto was born on 5th April 1975 and has claimed to be a man of Japan origin living in the United States and Europe. He has mostly focused on several cryptocurrencies and computer science. In August 2008 bitcoin.org domain registration took place. In October 2008 the bitcoin whitepaper was introduced. The first trial of bitcoin was recorded on 3rd January 2009 through a Code: XBT. Bitcoin is known as decentralized digital currency by peer-to-peer network. IOTA was the first crypto-asset introduced not through blockchain technology, but by using the tangle. In the process of all categories of digital currencies, which were aimed at resolving the double expanding problem while making an economic opportunity for all levels of mankind within the legitimate frameworks. The Shariah alternative of crypto-currency or crypto-asset are among the efforts aiming at accessibility to all classes of people with less cost and minimum efforts to maximize possible economic opportunity within the holistic spirit of *Maqasid al-Shariah* (Objective of Shariah) (Mohammad and Shahwan, 2013).

Today, it has been observed that, among the top cryptocurrencies exist in the cyberspace are Bitcoin, Litecoin (LTC), Ethereum (ETH), Zcash (ZEC), Dash, Ripple (XRP) and Monero (XMR). The testing period of the bitcoin however, continued until 2010. The preparation for the execution continued until 2013 when the first real operation of bitcoin took place. As of 24 May 2017, Nakamoto is believed to own up to roughly one million bitcoin with a value estimated at approximately USD 7 billion as of November 2017. On

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December 31, 2017, bitcoin's value reaches USD 15,939.1348 thus, makes bitcoin among the fastest growing financial engineering with 151.082% p.a. Current price of bitcoin is tremendously decreased to USD 9532.18 as at May 06, 2018. It is further recorded that, the initial token price of bitcoin was USD 0.007, but the value increased to USD 10.85 within a year. Bitcoin began a roaring price 1 BTC=USD 770, but as at 31st of December 2017, the price hit with 1 BTC=USD 15,939.1348. Through such growing track record, the bitcoin is capturing the market on its own magnetic power without being controlled by any sovereign or specific regulatory standard.

However, the issuer or the originator or the receiver positions as a virtual sovereign with vague identity. As a result, it has been observed that, the users or expenders or investors participate in bitcoin with no significant legal or ethical protection thus, encounters the element of uncertainty (*gharar*). The Shariah alternative crypto-currency or crypto-asset are on the other hand, ensure every legal or ethical protection for investors, operators, promoters, and providers within the divine principle of al-Quran: “O believers! Do not devour one another's wealth illegally, but rather trade by mutual consent. And do not kill each other or yourselves. Surely Allah is ever Merciful to you” (Al-Quran, 4:29).

In reality, an Islamic crypto-asset's pre-requisite is to be backed by a commercially valued backing asset certified by any legal authority. It shall be operated under a registered asset management entity. The asset shall be created in a digital platform backed by valued asset. Once the asset is created, it shall carry an intrinsic value and thus shall be recognized as an intangible valued asset. Total establishment, management and operational activities and functions shall be governed by the integrated Shariah principles. An Islamic crypto-asset is operated in a digital platform and its baseline value shall be determined based on fair judgement affordable to everyone. The price movement in determining the continuing market value of the asset shall be determined by careful day to day market analysis and shall be controlled by the system of artificial intelligence (AI) by applying the principle of *al-Tas'ir* (pricing by circumstances), *Ta'dil al-Quat al-Shirayiyati* (purchasing power parity-PPP) and *Zoherat al-Souq* (market phenomenon). While the benchmarking (*al-Murjei'at*) of the valuation of the asset shall be based on selected commodities commonly used. The transaction of Islamic crypto-asset shall be carried out among the peers in the digital trading platform. The income distribution in Islamic crypto-asset shall be made automatically by system of AI in favor of four accounts namely investors' account based on hybrid principles of *al-Musharakah* and *al-Qiradh*, management account of the operator hybrid principles of *al-Ujrah* and *al-Wakalah*. A provision for humanitarian causes based on the principles of *al-Zakat* (mandatory alms with 2.5%) and *al-Waqf* (voluntary endowment) while the net surplus shall be in favour of the shareholders of the company based on the principle of *al-Musharakah* or *al-Mudharabah*.

Technical Know-How Crypto-Asset

Numerous research provides that, the crypto asset has been developed through a blockchain technology using the SHA256 (Gilbert and Handschuh, 2004), a cryptographic hash function as proof of work scheme. It is decentralized digital asset by peer-to-peer network, but IOTA was among the first cryptocurrencies not based on blockchain technology but using tangle instead. Crypto asset through the blockchain technology is a virtual shared public leisure on which internet network is based. All encrypted confirmed transactions are nodded and are recorded in the blockchain as a proof of transactions. Each transaction is a chain and connected to each other thus, enables a crypto-asset digital wallet in calculating one's spendable balance and new transactions can be verified to be expanding crypto-asset that is owned by the spender or user. The Shariah alternative crypto asset is on the other hand, quite different in its technical know-how. An Islamic crypto-asset is thus, any property carries its intrinsic value is an asset thus, an asset includes any property either tangible or intangible. While an intangible property includes either in the form of intellectual right or virtually created one like crypto asset. An Islamic crypto-asset is created virtually backed by valued asset certified by any legal authority. The market valuation of Islamic crypto asset is confirmed by day-to-day market analysis (PPP) over selected commodities commonly used globally. Transaction of Islamic crypto-asset takes place in the digital trading platform within a specific period among the peer-to-peer with mutual signals. Each transaction is confirmed only upon system (virtual) decryption. A virtual decryption in the platform ensures an ownership of asset for the subscriber while enriches the seller with contractual value. Debit and credit in each transaction is managed by e-pay through accounts maintained in banks by parties respectively.

Valuation by Market Analysis

An Islamic crypto-asset is costless, fastest, and easiest digital currency business, creating an opportunity for across the world into this economic environment within the holistic principle of al-Quran: *“Help each other in righteousness and piety. And do not help each other in sin and rancor”* (Al-Qur’an 5:2). The crypto-asset moves with its promising potential to encourage all levels of mankind to participate in the digital marketplace to maximize one's enterprising and entrepreneurial opportunities without unnecessary obstacles. Crypto-asset maybe a solution in the cotemporary economic reality as an alternative currency to attribute a dual currency system in any jurisdiction in easing the day today commercial dealings. Despite the existence of the crypto-asset with numerous comfort, it encounters risks if one does not comply to the standard regulatory frameworks and also the ethical standard. It is submitted that, the crypto-asset can only be successful should one is governed by the acceptable regulatory standard. In the contemporary global cyber space, there are numerous cryptocurrencies offered through blockchain technology. Most of which are moving ahead with significant results, particularly with commercial gain. Among those cryptocurrencies, the most popular are 10 (Adam, 2022) Bitcoin Cash (BCH), NEO (NEO), Monero (XMR), Dash (DASH), EOS (EOS), Ethereum (ETH), Cardano (ADA), Zcash (ZEC), Litecoin (LTC) and Ripple (XRP) (Demir et al., 2020).

An Islamic crypto-asset is thus, created only based on valued backing asset of the operating entity while the valuation of the backing asset shall be certified by any legal authority. Once an Islamic crypto-asset is created, it shall carry its intrinsic value and be treated as an intangible asset. Baseline value of an Islamic crypto-asset shall be determined based on a fair judgement affordable to all classes of people. A minimum rate is strongly recommended to be a baseline value of an Islamic crypto-asset. Number of (Initial) Islamic crypto-asset offered shall not exceed the net value of the backing asset. Market value of an Islamic crypto-asset shall be determined by day-to-day market analysis (PPP) based on some selected commodities commonly used. Price movement of an Islamic crypto-asset shall be managed by system, but not by peers, so to avoid any malpractice or monopoly in the platform.

Clearing Confusion

Despite the significant growth of Islamic crypto-asset, there are numerous confusions arising out in crypto-asset as to whether it is a currency or commodity or product? Is it a transaction with privity or with uncertainty? Does it survive on its sovereignty or on own existence? Is the receiver registered or based on virtual existence? Is the receiver known or vague behind the curtain? Is the transaction formalized by encryption or digit? Does it concern about the risk plan or moves on with no risk concern? Does the source of income in crypto-asset is known or uncertain? Does crypto-asset comply the standard or regulatory policies or standards?

Clearing those confusions with appropriate solutions is that an Islamic crypto-asset is recommended to be treated as a commodity, because of the nature of the transaction by buying and selling in the open digital market. In a crypto-asset platform the receiver shall be registered and known so to establish a privity between the user and the receiver. A crypto-asset is recommended to be with coin or token based offering through initial coin offering (ICO), but not through exchange platform, because it may encourage money laundering activities. Encryption may not be sufficient to protect the users in a crypto-asset thus, additionally a biometric process shall also be required to create a better authentication and security for the user. A crypto-asset transaction shall also be protected through an appropriate risk plan. It is essentially recommended that, establishment, system, management, operation and all activities shall be governed by standard regulatory frameworks, policies and guidelines so to ensure a sustainable existence of crypto-asset benefitting all within the legitimate frameworks and Shariah standards.

Transformation or Reform Strategy

The world witnesses in the recent years that, the crypto-asset has been growing rapidly with mixed appreciation from different parts of the world. Even though it gains a significant market across the globe, it evolves around with numerous shortcomings that is a long-term threat to the growth of crypto-asset. Therefore, it is timely and strongly recommended that, the crypto-asset model shall be reformed so to make it a globally acceptable alternative or complimentary currency or a digital monetary commodity. Hence, a reform strategy of crypto-asset maybe as follows:

Crypto-asset shall be standardized with acceptable regulatory frameworks, policies and guidelines. Encryption shall further be strengthened by biometric signature of the user as an additional requirement.

Ethical standard shall also be developed to regulate all levels of participants in the crypto-asset platform, so to avoid any form of malpractices in the system and the market as well. There shall be central depository or sovereignty both at the international level and in the local jurisdiction by respective central banks. A crypto-asset shall be limited to the coin or token offering through ICO but shall be open to any of its activities through exchange platform, so to avoid possibilities of malpractices or money laundering by crypto-asset. The payment system shall be reformed with guided digital payment method, such as electronic transfer which can also be activated through mobile to mobile and shall be formalized through a digital code by encrypted signature enabling the user to apply for any form of transaction within the credit ability. A crypto-asset space is a borderless platform thus, its entity and operation are recommended to be based on offshore without being hindered by any local jurisdiction. Crypto-asset operation shall be bound by a standard policy to segregate part of its income for the humanitarian or charitable causes, which can be through the compulsory *Zakat* (alms) provision and *Tabbarru'at* (charitable) provision (Fadilah and Makhrus, 2019). All activities in crypto-asset may also be exposed to risk due to technical failure, hackings, unforeseeable catastrophe and malpractices. Such unpredicted risks maybe threat to the whole blockchain technology and crypto-asset system besides discouraging the market and its participants. Therefore, it is strongly recommended that, a standard risk plan shall be established for each Crypto-asset management.

Paradigm of Islamic Crypto-Asset

Despite a rapid growth of crypto-asset in the contemporary socio-economic environment there is not much solution yet for an Islamic alternative of crypto-asset though there are some players trying to introduce Shariah model of crypto-asset, but not successful yet. It is perhaps because of an Islamic alternative cannot simply be confirmed by mere changes of terminology without fulfilling the requirements for an effective Shariah model. An Islamic alternative model of crypto-asset shall therefore be in conformity with the followings. An Islamic model of crypto-asset shall ensure its objectives compliant with the spirit of *al-Maqasid al-Shariah* (divine objectives). If the objective of the platform maintains in the paper by complying the Shariah principles, but, otherwise, may make the whole system non-compliant to the *Maqasid al-Shariah*. Therefore, to be an Islamic model, one shall be with Shariah spirit both in paper and in reality. An Islamic crypto-asset model shall be governed and guided by the standard Shariah justified guidelines, policies. and systems. It must be closely supervised by qualified Shariah board, all activities of it shall be screened through by a Shariah audit to ensure all activities and functions are compliant to the Shariah principles. While an advisory body shall contribute closely to advising the management and their activities in line with the Shariah principles and the divine ethical standard.

The blockchain technology along with its ledger and other technological components shall be screened through to ensure one is compliant to the divine spirit of Shariah. The operation shall be centralized by sovereignty. In Islamic business activities the true sovereignty is with The Almighty Allah (ﷻ), but in practical reality of crypto-asset there should be a central depository with international regulatory control, government control at locality through the central bank and offshore regulatory control shall be maintained at the offshore level, which all shall be within a Shariah justified code or standard. Even though the operation of an Islamic crypto-asset model takes place in the cyber space with borderless activities, to avoid unpredicted risk and malpractices, the operator shall be registered and duly incorporated as a company in any legal jurisdiction. Through such incorporation, the receiver is identified, and privity is maintained between the receiver and users with a transparency culture.

There is confusion on whether the crypto-asset (coin or token) shall be treated as currency or product or commodity. It is recommended that, the crypto-asset may be treated as a complimentary currency to be used as a medium of exchange of value. It may also be treated as a commodity or product because one has the intrinsic virtual value. Thus, the Islamic alternative crypto-asset may be used as a complimentary currency or a commodity or product so long one is compliant with Shariah principles. In any commercial activity under Shariah principles (Mohd Noh, 2022), shall be free from the element of uncertainty (*gharar*) thus, in Islamic crypto-asset model the receiver, user, technology and activities shall be transparent and be free from uncertainty (*gharar*). In Islamic model of crypto-asset, its total activities and transactions shall be facilitated by Shariah instruments and doctrines. For example, the investment by the users is based on principles of *al-Mudharabah* (co-partnership) or *al-Musharakah* (partnership) where the user receives return as income sharing with the receiver or other users through trading activities. The receiver receives the service charge

based on the principles of *al-Jualah* (reward) or *al-Wakalah* (agency) or *al-Ujrah* (charge). Meanwhile the transaction takes place in the blockchain platform is based on the principles of *al-Bay wa al-Shira* (buying and selling). The Islamic model of crypto-asset shall be subject to pay compulsory taxes with *Zakat* (alms). Besides, a voluntary segregation over the income shall be provisioned for humanitarian causes base on the principles of *al-Tabarru 'at* (charity).

In an Islamic model of crypto-asset, a transaction by an encryption is not sufficient to protect the user from any unpredicted risk might be due to technical failure by hacks and or other catastrophes. Thus, additionally it is recommended to require a digital signature by biometric of the user simultaneously with the action of encryption in all levels of transaction. This may be a better authentic as to nodding and recording. In an Islamic crypto-asset management, the divine ethical standard shall strictly be observed. No dishonesty, fraud, misrepresentation, deceiving, falsehood, and other form of malpractices are tolerable, because of those moral hazards may defeat the purpose of *al-Maqasid al-Shariah*. In an Islamic crypto-asset management multi-currency basket model may also be allowed to make comfort among the users in the global cyber platform.

The establishment, operation and management of an Islamic crypto-asset model is more recommended to be based on offshore, so that the total activities shall be bound by the offshore regulations without being interrupted by the local authorities, provided that all regulatory frameworks, policies, and activities are within the Shariah justified standard. It shall also be worth noted that, receiver or user or technical supporter or anyone in the system shall in no situation be allowed to gain unlawfully at the expense of others because there is no room for anyone gaining at the expense of others in the Islamic commercial activities. An Islamic crypto-asset management is not free from risk be one due to technical failure, technology disaster by hacks, receiver bankruptcy or fraud activities. In those unforeseeable circumstances the risk shall be minimized by a Shariah justified *takaful* (insurance) scheme aiming at protecting both the user and the receiver against unpredicted catastrophe.

Crypto Asset (Conventional vs Islamic)

Despite the crypto-asset management in the conventional practices in recent days receives greater popularity and appreciation globally, the model is yet surrounded by numerous shortcomings and criticisms from different levels. An Islamic model of crypto-asset on the other hand, despite being a new dimension, ought to be designed carefully by complying the Shariah ethical and commercial principles. However, a dichotomy analysis is provided here to show how conventional crypto-asset is different from the one designed under the Shariah normative principles (Billah, 2021).

Issues	Conventional Crypto-Asset	Islamic Crypto-Asset
Law and Policies	In conventional crypto-asset practices, the regulatory frameworks as to law, policy and orders are not quite concerned over the competitive commercial gain.	The regulatory concern with Shariah standard in Islamic crypto-asset model shall be among the prime requirements, so to make sure every activities are within the spirit of <i>al-Maqasid al-Shariah</i> .
System	In the crypto-asset practices, the blockchain technology and the total system are decentralized with private control by the receiver.	The system of blockchain technology shall be controlled by systematic body for the common benefit with no personal agenda and be screened through by the Shariah board.
Receiver	The receiver's identity is not necessarily to be registered in any onshore or offshore jurisdiction, but a cyber-registered entity is the common basis. In this culture the receiver's identity remains unknown and uncertain, which may create a fundamental risk against the user.	The receiver is required to be a registered entity either in onshore or offshore. In such requirement the receiver's identity shall be known and be free from uncertainty (<i>gharar</i>). This may create a confidence among the users in being protected from any fraud.
Sovereignty	There is no sovereignty in crypto-asset management as to be controlled by any central bank or central depository in the international jurisdiction. Its sovereignty is realized only by a private	The actual sovereignty is with almighty Allah (ﷻ) by complying to the regulatory and ethical principles of the Quran and the Sunnah. In addition, the central bank of the

	control of the receiver with no legal recognition.	local jurisdiction and the international central depository shall be recognized as the sovereignty in the practical reality, so to avoid any malpractices within the activities.
Privity	The privity in crypto-asset management between the user and the receiver seems quite remote by no visual legal contractual relation. This may result in avoidance of one's responsibility and accountability.	The privity with contractual relationship between the user and receiver shall be maintained and known through cyber space visual contractual relation, so that the accountability and responsibility of the parties are recorded.
Control	Conventional crypto-asset is controlled by private initiative of blockchain technology.	An Islamic crypto-asset management is controlled by divine principles within <i>al-Maqasid al-Shariah</i> , law and sovereignty.
Growth	The growth of Crypto-asset practices is quite emotional without bothering to much of legal or ethical concern.	The growth culture shall be rational with sustainability by complying the Shariah concern and legal sensitivity.
Subject Matter	The subject matter is a digital coin or token and be treated as digital currency which can be convertible in any exchange platform.	It may be treated as an alternative digital currency or digital commodity or digital product. Because a digital coin or token carries digital value, which can also be defined as intrinsic value.
Operational Mechanisms	The operation takes place based on any self-designed mechanisms with no concern of standard regulatory frameworks yet. It is by a "coin or token" offering, traded in the trading platform through a block-chain technology. It is also practiced based on an exchange platform as "crypto-asset exchange", but no standard guidelines yet in supporting such mechanisms.	The operation of an Islamic crypto-asset model is, facilitated and dully operated mainly based on the Shariah principles with the concept of "issuer coin or token" or of an "exchange platform" through a Shariah screened block-chain technology. An operation based on "Issuer Coin or Token" shall primarily be executed by trading platform, a decentralized direct (one-to-one) buying and selling (<i>Bai' wa al-Shira'</i>) mechanisms. However, it may exceptionally be operated through exchange platform based on a Shariah hybrid mechanism, facilitated by the doctrines of <i>al-Shuftaza</i> (exchange), <i>al-Hewalah</i> (transfer), <i>al-Kafalah</i> (custodianship), <i>al-Amanah</i> (trust), <i>al-Wakalah</i> (agency by commission), <i>al-Ju'alah</i> (reward for services) and <i>al-Ujrah</i> (service charge) within the Shariah frameworks.
Income	The sources of income in the conventional crypto-asset management are unknown.	In Halal crypto-asset management, the sources are known to both receivers and users through legitimate trading.
Tax	There is nether concern of tax over the income in the conventional crypto-asset management nor there is any tax plan or policy.	In Islamic crypto-asset management, it is mandatory to establish a <i>Zakat</i> provision over any income, if the income is Zakatable. In addition, the tax also be payable as per the statutory requirement.
Risk	There is no risk plan in conventional crypto-asset management yet, to protect either the user or the receiver against any unpredicted catastrophe.	The risk plan is required in Islamic crypto-asset management to protect receiver, user and the system against unpredicted risk thus, a <i>takaful</i> scheme is strongly recommended to be established in managing unpredicted risk against Islamic crypto-asset management.

Formality	In the conventional cryptocurrency management, the transaction is confirmed by the encryption only so to nod and record the transaction. By encryption with digit alone may not be an enough protection for the user if incase the digit is known to someone else or being hacked.	For the Islamic crypto-asset management, to protect the user in a better way, it is recommended that, there shall be two requirements for the formalization of a transaction and that is; encryption by digit and simultaneously by biometric of the user, so to nod and record the transaction with legal status.
Backing Asset	A crypto-asset if so operated without being backed by any valued asset (at least equivalent to the total ICO value) may lead to high risk for the investors with any unforeseeable catastrophe. In the current practices of crypto-asset, there is no such requirement of backing asset to back the total operation.	In the Islamic crypto-asset management, a valued backing asset with legitimate proof of product or proof of asset or proof of property or proof of commodity (POP) with at least an equivalent value of the ICO, to back the total operation. The objective of this requirement is among others to create a legitimate confidence in the market and among the market participants.
Instrument	There is no specific instrument used in the crypto-asset management except buying and selling with unauthorized traditional mechanism.	There are numerous Shariah justified instruments recommended to facilitate an Islamic crypto-asset management. Among them are: <i>al-Mudharabah</i> , <i>al-Wakalah</i> , <i>al-Jualah</i> , <i>al-Bai' wa al-Shira'</i> and <i>al-Tabarru'at</i> .
Moral Hazard	There is no specific regulation or standard policy to regulate moral hazards or malpractices. Thus, it is left as an option to the personal responsibility.	It is among the primary requirements of an Islamic crypto-asset management to strictly concern and observe ethical compliance within the <i>Maqasid al-Shariah</i> in all levels of personality, decision making and execution.
Objective	The prime objective in crypto-asset management is, to make money and maximize self-opportunities.	The objective shall be within the holistic spirit of Shariah. Commercial gain within the legitimate frameworks is one of the objectives while the other is to create an entrepreneurship opportunity for all by complying the Islamic standard. It also aims at caring for humanitarian causes through the doctrine of <i>al-Tabarru'at</i> .
Humanitarian Concern	There is no humanitarian concern in conventional crypto-asset management as a requirement.	In Islamic crypto-asset management humanitarian concern is among the objectives in helping others out of the income.
Nature	It offers coins or tokens, which can be traded in the cyber platform or be in the exchange platform.	It has some similarities with conventional practices to offer through coin or token and be traded in digital platform. The coin can be converted in the exchange platform, but is not encouraged, so to avoid any illegal money laundering. The digital coin can be used as an alternative or complimentary currency in buying commodities or paying dues without having opportunity to treat the coin as a real currency to be exchanged in the foreign exchange platform, so to avoid the possibility of money laundering in the cyber space.
IAO	It offers with initial asset offering (IAO) with a value determined by the receiver on its own discretion.	It can be offered either with initial asset offering (IAO) or initial token offering (ITO) or initial product offering (IPO) or initial commodity offering (IAO) with a justifiable value affordable to all levels of

Currency

It is a coin or token, which is treated as a non-intrinsic currency.

mankind, so to maximize an opportunity of entrepreneurship in the cyber space for all. Even though it is a coin or token used in the digital platform may also be recommended to be treated as an alternative currency for trading or payment of dues.

Operational Mechanism

An Islamic crypto-asset is managed within the principles of *Maqasid al-Shariah* thus, its operational mechanism is that the launching of Islamic crypto-asset with its baseline valuation shall be with minimum price affordable to all and the initial offering with minimum target so to avoid market-crash. There shall be a maximization of market awareness by online platforms or social media. The market valuation of the asset shall be determined by daily market analysis by applying the principle of purchasing power parity (PPP) on retail sales of selected commodities commonly used. It is recommended that, the market analysis for each trading event may be for 5 consecutive days (Sat-Thu) a week. Average income gains over the period of 5 days shall be the basis for deterring the value of the asset. Trading shall take place once a week for a period of 24 hours. The valuation of the asset for the week shall be published prior to the trading takes place. The asset shall maintain unchanged value in the trading platform. The payment for each transaction takes place in the platform shall be bank-to-bank through e-pay system. Every investor will be able to sell own asset once a week in the trading platform and the dividend or distribution over the income generated in the Islamic crypto-asset platform is determined on the fact that, the seller of the asset shall be entitled to principal value of the asset plus sharing an agreed (%) of income generated from the sold-asset. The dividend or distribution shall take place automatically bank-to-bank by e-pay system (Adham et al., 2008). The company shall be entitled to an agreed (%) of income generated from the sold asset. Each income received by the company shall be subject to distribution for operation and humanitarian causes through *Zakat* and *Awqaf*.

Pillars of Crypto-Currency. Its Shariah Screening Mind-Map

Islamic crypto-asset is established, managed, operated, regulated, supervised, and monitored by some core elements within the principles of *Maqasid al-Shariah*. Those elements are to be recognized as pillars of crypto-asset under the principle of Shariah. Thus, a mind-mapping is made screening those components with Shariah justification. This screening may help the market to create confidence with faith without being confused by uncertainty or vague in cloud, as detailed in Table 1.

Table 1: Shariah screening of Crypto asset

Components/Core Issues	Concern/Screening	Justification/Results
Governing Authority(s)	In what extent the Shariah control is required in managing ICA?	Governed by: Shariah Standard/Shariah Code of Ethics/Shariah Advisory Board/ Shariah Compliance/Shariah Audit
Principles/Instruments	How far ICA is governed by Shariah principles and instruments?	Among them are: <i>Al-Bay' al-Shira' al-Wakalah/al-Musharakah/al-Mudharabah/al-Qiradh/al-Sarf/al-Shuftaja/al-Wadiyah/al-Hewalah/al-Ju'alah/al-Ujrah/al-Amanah/al-Zakat/al-Tabarru'at</i>
Digital Platform	Does the digital platform for trading activities of ICA contradict Shariah norms or spirit of <i>Maqasid al-Shariah</i> ?	No, because Each and every component and activity of ICA are indeed transparent and free from any element of <i>gharar, riba, maysir</i> , unfair gain and other non-Shariah actions

Valuation Exercise	How far the manner of valuation exercise (baseline and market value) of ICA is recognized by Shariah?	All stages of valuation exercise of ICA shall be justified by: <i>Al-Taqwim</i> (valuation) <i>Tahlil al-Souq</i> (market analysis) <i>Ta'dilal-Quat al-Shirayiyati</i> (PPP) <i>Al-Murjei'at</i> (benchmarking) <i>Zoharat al-Souq</i> (market phenomenon)
Price Movement	Weekly price movement of ICA is managed by careful market analysis based on selected commodities commonly used	Because, price movement is facilitated by: <i>Al-Tathmin</i> (pricing) <i>Al-Tas'ir</i> (pricing by circumstances) <i>Tahlil al-Souq</i> (market analysis) <i>Ta'dilal-Quat al-Shirayiyati</i> (PPP) <i>Al-Murjei'at</i> (benchmarking) <i>Zoharat al-Souq</i> (market phenomenon)
Trading	Trading of ICA in the trading platform takes place with mutual good wills among peers over a subject matter (ICA) with Halal objective in gaining lawfully	Complying with the Divine Principle: "O you who have believed, do not consume one another's wealth unjustly but only (in lawful) business/trade by mutual consent" (Surah al-Nisa': 29)
Accounting (A/C)	What extent transparency is maintained in accounts?	Six A/C to be maintained: Investors' A/C BoD A/C Management A/C Humanitarian (<i>Tabarru'at</i> A/C) <i>Zakat</i> Management A/C <i>Al-Awqaf</i> Management A/C Hybrid: <i>Al-Wakalah</i> (agency) <i>Al-Mudharabah</i> (co-partnership) <i>Al-Musharakah</i> (partnership) <i>Al-Ujrah</i> (service charge) <i>Al-Waqf</i> (charity) & <i>al-Zakat</i> (alms) CSR/Impact Investment
Distribution/Dividend	Sharing income, distribution of income Enjoying with Halal dividend beside a humanitarian concern in the ICA Management are indeed aligned with Shariah principles/instruments	Any form of income generated in the ICA Management shall be subject to a compulsory deduction (2.5%) of <i>Zakat</i> while a corporate provision is suggested to deduct an agreed (%) as <i>Awqaf</i> for the humanitarian causes
Humanitarian Concern (<i>Zakat & Waqf</i>)	Among the prime concern and requirements in the ICA management is to create a provision for the humanitarian concern and that is the provision of <i>Zakat</i> and <i>Awqaf</i>	

Socio-economic Impact

Among the socio-economic impact of Islamic crypto-asset are; mutual cooperation and solidarity caring about and sharing with all classes of mankind and particularly for low-income group. It also contributes to diminishing poverty rate by creating enterprising and entrepreneurial mind-set among the low-income group. It significantly contributes to opening an eco-opportunity for all and particularly for the low-income group besides a significant contribution to economic stability among the low-income group in particular. Also, it may help with potential contribution to the growth of GDP (van denBergh, 2009). It may undoubtedly contribute to create a self-reliant community with sound economic security with gradual effect besides helping the country to diminish its economic liability.

Conclusion

Crypto-asset is a new chapter in the contemporary economic environment with rapid growth and greater appreciation across the world. Despite its greater popularity with perhaps emotional action and less rational way forward, it is somehow a risk yet due to availability of lack of regulatory standard, poor risk plan, unstable system, less concern on rights and obligations and minimum care as to moral responsibility. For a sustainable existence, the model shall be compliant to standard legal requirement, ethical principles, acceptable operational mechanisms, and risk plan. An Islamic alternative crypto-asset model on the other hand is, conceptually vibrate the global environment though not in effective operation yet. It is in no excuse as to

Shariah compliance, legal requirements, divine code of ethics, standard system, operational mechanisms, and activities within the divine objectives. In the Islamic model, mere commercial gain shall not be a prime objective over the socio-economic and humanitarian concern within the *al-Maqasid al-Shariah*.

Despite the promising future of Islamic crypto-asset, there are challenges in it. It has been observed that, there is poor awareness in both public and marketplaces as to the idea of Islamic crypto-asset. Also, there is insufficient support from the governments, related organizations, Shariah scholars and corporate authorities in appreciating Islamic crypto-asset. There is also misconception about crypto-asset thus, leads to confusion and hence, it discourages the development or operation of crypto-asset. There are other challenges namely lack of Shariah regulatory frameworks (Grassa, 2015) on the subject, standard, policies and guidelines, infancy stage of professionalism and insufficient of technical experts. To overcome those challenges it is recommended that, there be significant awareness on the subject, its technicalities, operational mechanisms and impact through teaching, training, research, talks and sharing views. There should also be an initiative with effective support by the government, Shariah scholars and corporate authorities also professional initiative with skills and operational techniques. It is further concluded that, the idea of Islamic crypto-asset is timely to contribute significantly to the economic recovery and its sustainability in this post-Covid Era. Thus, support from the government and other related ones are among the prime factors in the success of Islamic crypto-asset. A focus on professional development with skills in technicalities and operation is an essential concern. Awareness among both public and market is among the pillars of the success of Islamic crypto-asset. Needless to admit that, among the core objectives of Islamic crypto-asset is to wake up the low-income group by building them up with enterprising and entrepreneurship personality.

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