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Article

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THE LEGAL IMPLICATIONS OF ABANDONED DIGITAL ASSETS IN SHARĪʿAH-COMPLIANT FINTECH PLATFORMS

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ABSTRACT

Purpose — The recent surge in Sharīʿah-compliant fintech platforms has created an increasing volume of intangible digital assets of increasing value across emerging technological platforms. This phenomenon has generated a significant number of digital assets left behind after the demise of their owners. This paper provides a legal analysis of the implications of abandoned digital assets in Sharīʿah-compliant fintech platforms. It seeks answers to two central research questions: what are the Sharīʿah and legal implications of digital assets after the passing of the owner? How can the existing Sharīʿah-compliant fintech platforms prevent uncertainty over digital assets?

Design/Methodology/Approach — This is a conceptual paper which adopts a qualitative analysis of both primary and secondary sources from existing journals and regulatory instruments in Islamic finance jurisdictions to explore the gaps in the law regarding digital assets and regulations regarding unclaimed money. The paper further compares the approaches adopted in Malaysia and Saudi Arabia in regulating digital assets and unclaimed moneys.

Findings — The paper finds that there is scope for the administration of digital assets in both regulated and unregulated Sharīʿah-compliant fintech platforms. Similarly, the adoption of e-KYC that complies with the Sharīʿah ethos is essential to ensure that digital assets are not lost upon the account holder's demise. The legal right and title of the account holder and legal heirs can only be protected through the operation of digital assets regulation in a Sharīʿah-compliant fintech environment.

Originality — This paper is of value to administrators and legal heirs of account holders in fintech environments. It recommends measures to prevent intestacy and uphold the account holders' and legal heirs' intergenerational property rights and financial benefits.

Research Limitations/Implications — As a conceptual paper, the attitude of digital asset users is not examined due to the absence of quantitative or qualitative data on devolution of digital assets.

Practical Implications — Although this study focuses on the implication of digital assets for Sharīʿah-compliant fintech platforms, the findings may well have a bearing on policymakers, legal practitioners, and administrators of estates in the management of emerging asset classes.

Keywords — Digital assets, Fintech, Securities, Sharīʿah, Unclaimed money
Article Classification — Conceptual paper

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INTRODUCTION

Technology has affected virtually everything, including the intergenerational transfer of property, which has assumed a new dimension in recent times. In a recent German court decision, it was held that virtual possessions such as digital assets could be passed on to identifiable legal heirs just like any other tangible asset. The Federal Court of Justice handed down this ruling in Karlsruhe in a case involving Facebook (now Meta Inc.). The case was about the Facebook account of a 15-year-old teenager who died in a train accident (Riham, 2018). The parents of the teenager filed a civil lawsuit. They wanted to find out the circumstances surrounding her death from her Facebook account, which was memorialised upon her death. Facebook had refused to provide access to the parents even though they possessed the password to their daughter's Facebook account. In the decision, Judge Ulrich Herrmann of the *Bundesgerichtshof (BGH)*—i.e., the German Federal Court of Justice—in Case no. III ZR 183/17 compared Facebook contents of the deceased to books, letters and diaries which are passed to heirs and further ruled 'it is undisputed that highly personal analogous documents, e.g. diaries and letters, are inherited'. With this decision, it is thus established that under German civil law, digital content belonging to a person is considered an inheritable asset and such legal rights trump privacy issues.

The decision is vital for advancing digital rights and inheritance in non-monetary rights and may be extended to monetary rights in fintech (financial technology) and other digital assets. Assuming such happened in states where Sharīʿah (Islamic law) rules are applied, what will be the Sharīʿah and legal implications of such digital assets left behind by the deceased? Will the legal heirs have access to such a virtual asset? Assuming someone like Matthew Mellon (Nathan, 2018)—who died unexpectedly in 2018, leaving over USD500 million saved in Ripple—had invested in a Sharīʿah-compliant cryptocurrency, how would such a valuable digital asset be treated under Islamic inheritance law?

The above conundrums have triggered increasing controversies on the interplay between asset management, information technology, Islamic law and privacy issues. The surge in Sharīʿah-compliant fintech has continued to create digital financial assets across platforms (Mahalingam, 2017). The initial regulatory scepticism about fintech has turned towards its potential for aiding financial inclusion and ease of payment (Wintermeyer & Basit, 2017). The world's unbanked population are predominantly Muslims who share some sentiments for Islamic finance technology solutions, otherwise known as Islamic fintech. Ethics and Sharīʿah guidelines are the underlying principles of Sharīʿah-compliant fintech (Laldin & Furqani, 2019; Rahim *et al.*, 2019). This paper argues that such ethical guidelines must regulate unclaimed digital assets in fintech. In traditional banking regulation, dormant accounts are classified as unclaimed money, administered according to the law, and claimable by the legal owner or legal heirs of the owner. Although technology is considered neutral in banking, this paper considers that Sharīʿah-compliant fintech guidelines can be improved to prevent loss of funds in the form of digital assets. The problems which this paper seeks to address are related to the regulatory and policy implications of digital assets in Sharīʿah-compliant fintech.

Fintech accounts have a propensity for the creation of a high volume of digital assets, but those accounts tend to be opaque. This paper provides some legal analysis for unclaimed money

in fintech accounts, which are referred to herein as digital assets. The paper also argues that the existing regulation on unclaimed money is inadequate to prevent the loss of funds in digital accounts of the legal owner and portends some harm to the legal heirs. This paper argues that the nature of fintech in a Sharīʿah-compliant environment requires a robust regulatory treatment of the financial assets of customers after their demise.

Specifically, the paper identifies the meaning, nature and scope of digital assets and unclaimed money in the banking sector. Secondly, it examines the extent of applicability of existing financial regulations and practices on unclaimed money and its adequacy for Sharīʿah-compliant digital assets. Thirdly, it analyses Sharīʿah principles and rights of the individual property owners and legal heirs and the duty of the state to prevent loss of assets and to resolve the unclaimed asset. Lastly, the paper examines the potency of fintech sandboxes in the treatment of digital assets and unclaimed funds. This paper is significant in suggesting a preventive mechanism for digital intestacy for account holders in Sharīʿah-compliant fintech environments. It also advocates for proactive management of digital assets of account holders after their demise so as to prevent loss of heirs' funds. To address the objectives of this paper, two central research questions are proposed:

1. What are the Sharīʿah and legal implications of digital assets after the passing of the owner?
2. How can the existing Sharīʿah-compliant fintech platforms prevent uncertainty regarding digital assets?

This paper is divided into the following parts. Following the introduction and conceptual framework, the next section reviews the literature on the nature of digital assets. The third section describes the research methodology. Then, the paper focuses on the characteristics of digital assets and their categories. The following sections discuss property and financial rights in the Sharīʿah and provide an overview of the legal treatment of unclaimed monies in two Muslim-majority countries, i.e., Malaysia and Saudi Arabia, to determine whether this framework could apply to digital assets. While examining the possibility of adopting an existing framework, the study concludes with some policy recommendations for the management of digital assets in Sharīʿah-compliant fintech platforms.

LITERATURE REVIEW ON THE NATURE OF DIGITAL ASSETS

This section examines the literature on digital assets, including their types, transferability, the rights they confer on an individual, and succession upon death. A careful examination of the existing literature on the subject reveals that digital assets such as online property pose challenges concerning their ownership, transfer, and administration to executors of the assets of a deceased. The purpose is to establish that there is a dearth of literature on digital asset succession in general and for the Sharīʿah-compliant fintech sector in particular. Literature on relevant finance and asset administration concepts is explored to establish gaps in the law regarding digital asset regulation.

Etymologically, 'asset' is synonymous with real property, but it has become part and parcel of financial services and transcends real property to include cash, intellectual assets, and digital assets (Roy, 2011; Kud, 2019). In common law, the word 'asset' primarily refers to a

person's net worth at any point in life, including legal rights, interest and entitlement (Stein & Fierstein, 1983). In simple terms, it refers to property and rights capable of devolving to the owner's legal heirs after the death of the owner. Therefore, the use of the term digital asset could be within reach considering the nature of assets that are electronic, have value and are capable of being inherited after the passing of the proprietary owner.

The internet has become an expansive virtual world with users worldwide exploring, annexing and defining, just as they have always done in the natural physical world. Several studies, including Wright (2014) and Berisha-Shaqiri (2015), have examined the continuous increase in human digital footprints and trails of personal internet activities through online accounts on social networking platforms, e-learning portals, and banking portals, among others.

Different authors have looked at the phrase from different perspectives in an attempt to define digital assets. Van Niekerk (2006, p. 54) defines a digital asset as 'any form of content and/or media formatted into a binary source which includes the right to use'. He further categorised digital assets into three major groups, which he referred to as textual content (digital assets), images (media assets) and multimedia (media assets), and a combination of different content forms. According to Van Niekerk (2006), the right to use a digital file makes it an asset. This definition was borne out of 'digital citizenry' when fintech was barely known and of less prominence. On the other hand, Romano (2011) defines it as content owned by an individual that is stored in a digital form. However, this definition falls short of including digital assets with monetary value and online accounts.

According to the Dong (2018, p. 14), digital assets are 'digital representation of value, made possible by advances in cryptography and distributed ledger technology. They are dominant in their own units of account and can be transferred from peer-to-peer without an intermediary…'. This definition seems to exclude digital assets such as social media accounts and non-monetary digital assets. This paper focuses on monetary digital assets. The following sub-section examines the characteristics and distinguishing features of digital assets.

Characteristics of Digital Assets in Fintech

Digital assets have been defined as securities and are subject to securities regulation. This position has been made clear by the United States Federal Securities Law and Securities Commission Malaysia (SC). This categorisation is influenced by court decisions and the securities regulation, which consider initial coin offering and its terms in the light of an 'investment contract' such as stocks, bonds and transferable shares.

Traditional banking products and fintech platforms have been considered foes by some in that fintech makes it possible to provide financial services without a physical bank office (Romānova & Kudinska, 2016). However, in some jurisdictions, fintech has opened more opportunities for banks that have embraced tech startups as an integral part of their business model. In contrast, other fintech ventures continue to be foes of the traditional banking model.

Fintech accounts provide personalised services with claims of easy access to banking services across platforms while maintaining a high level of customisation (Veaux *et al.,* 2013; Drigă & Isac, 2014). It is somewhat ironic that fintech accounts have also made account holders vulnerable to the loss of funds from cyber-attacks. Moreover, their monetary digital assets could become unclaimed funds or fail to devolve to beneficiaries after their death. The fintech platform

could rectify the former, while the latter may never be recovered or lost. For truly consumer-centric technological banking, the afterlife of a consumer's digital asset must be guaranteed from loss and intestacy.

This section will briefly highlight the features of digital assets, show how the unclaimed funds' rules applicable to banking are incompatible with them, and establish a Sharīʿah-based methodology for handling digital assets in fintech accounts. The key features of digital assets are as follows:

- **Securities product:** Digital assets have been controversially used as a medium of exchange, investment tool, and anonymous interbank transfer, among others. However, regulators in Malaysia and other parts of the world have designated digital assets as securities to bring them under the securities regulation (US Securities and Exchange Commission, 2019). Therefore, they have been compared with shares, stocks and bonds albeit in digital form. Hence, the regulations enabled Digital Assets Exchanges (DAXs) to become Recognised Market Operators (RMOs) that are permitted to issue Initial Exchange Offers (IEOs) to the public (Howell *et al.*, 2020).

  It must be noted that not all digital assets meet the criteria of investment contracts. Those that do not are not classified as securities. Some digital assets in the form of virtual currencies such as Bitcoin and Ethereum are, for example, sold in limited quantity to members at a discount and the product can be used to pay for goods and services within a network (US Securities and Exchange Commission, 2019).
- **Personalised Ownership:** Another important feature of digital assets is the ability to customise the asset to mirror the lifestyle of the owner.. Abiteboul *et al.* (2015) described this as the provision of customised services to the digital life of the user. This feature continues to exist after the demise of the holder, thereby producing digital assets with the character of the user. With the personalised feature, assets could become elusive to legal heirs after the demise of the legal owner. With customisation, ownership is taken to another level that exceeds that of conventional and non-digital securities.
- **Intangible electronic proof**: A digital asset is by nature intangible without physical proof. The proof of its existence exists in digital channels and platforms provided by fintech companies. Richard *et al.* (2021) examined the complexities and procedures for the legal recognition of such digital proofs which makes it difficult for executors and administrators to present evidence of the account or funds therein upon the demise of the account holder.
- **Remote cloud storage**: With the advent of cloud storage, digital asset information is stored remotely (Hon & Millard, 2018). By its intangible and electronic nature, a digital asset is only capable of being stored in remote locations in the cloud and data centres that cannot be accessed by the owner. Unlike traditional banking models, bank account details are physical and could be physically stored in locations known to the account holder and legal heirs. This unique characteristic has led to digital asset custody (DAC) as a sub-service in digital asset management.
- **Third-party access and security:** Account details of financial consumers are hidden to friends and third parties. Multilevel login details and security questions are required to access digital accounts and digital assets. The nature of the relationship between fintech

platforms and account holders could make it difficult to provide access to the third party. The keys to the asset are stored privately and could be lost if not properly managed. This feature has also promoted a separate service for digital asset managers.

Considering the above characteristics of digital assets, there is a need for Sharīʿah-compliant fintech platforms to provide mechanisms for the prevention of loss of wealth and ease of recovery by the legal heirs. Digital assets possess features that are unique compared to other forms of asset or property. While other properties have proof of their physical existence, the digital asset does not have physical existence.

Classification of Digital Assets

Digital assets can be broadly categorised into two, namely monetary and non-monetary/ sentimental value (Vatavu *et al.*, 2012). The most common type of digital assets with monetary value are online bank accounts, e-wallets, central bank digital currencies (CBDCs), non-fungible tokens (NFTs), cryptocurrencies and stablecoins. Others are electronic trading platforms such as Investment Account Platforms (IAPs).

According to Nakavachara *et al.* (2019), there appears to be a lack of consensus on the classification and types of digital assets. The authors further explained several classification methods, based on industry or classifications by the issuers. According to Neil (2020), digital assets can be categorised into five, including cryptocurrencies, digital tokens, security tokens, utility tokens and stablecoins. Having realised the variations and lack of consensus in the classification, this paper considers only three classifications:

1. Cryptocurrencies, which are the most common type of digital assets. They use cryptography for security, employ blockchain, and are designed to work as a medium of exchange. Common examples are Ethereum and Bitcoin.
2. Digital tokens, which can be bought, owned, sold or traded as a debt or equity claim against the issuers. Unlike cryptocurrencies, they are not a medium of exchange. They have characteristicswhich are similar to derivatives that could be createdto represent claims in an asset. Items of sentimental value such as artwork, property deeds, newspaper articles or movie scripts can be tokenised using NFTs.

   A digital token could be further sub-divided into security token, e-money token and utility token. Security tokens represent a fraction of ownership in an existing asset. For example, shares, debentures and units in investment schemes in a company can be tokenised. E-money is designed to function as a form of electronic money and represents a claim on the issuer. An example is CBDCs. Lastly, utility tokens seek to provide value for investors through access to future products and services, which makes their transfer and access more secure (Ozili, 2022).
3. Stablecoins, which are digital assets whose volatility are stabilised by being pegged to a stable asset such as the US Dollar or gold. Examples include Binance, Steem Blockchain Dollar (SBD), USD Tether, TrueUSD, and Gemini Dollar (Ante *et al.*, 2021).

The above categories are based on blockchain technologies and are generally intangible but may be attributed to a physical asset. On the other hand, tangible digital assets such as audio videos,

images, files, logos, social media posts, presentations, and spreadsheets may be represented in digital forms by their storage and security. In addition, their monetary value cannot be realised immediately but is backed by goodwill, copyrights, trademarks and patents from an issuer (Van Niekerk, 2007).

Digital assets like cryptocurrency are purely intangible assets designed to operate as mediums of exchange, investment securities and store of value in financial transactions. They control the creation of additional units and verify the transfer of assets through the use of cryptography (Radziwill, 2018). On the other hand, tangible assets are acquired and managed through digital timeshare exchanges and tokenisation, where the acquisition and transfer of ownership of real property remain digital (Pryce, 2002). It is uncertain whether share ownership of property with title evidenced by a digital certificate qualifies as a digital asset.

In 2019, Meta Inc. made its entry into the cryptocurrency landscape with the launch of Libra (later named Diem) (Mersch, 2019). Diem is reportedly returning investors' funds, cancelling and scaling down after almost three years of unsuccessful operation due to regulatory scrutiny by the US Federal Reserve (Iris, 2022). Other reports suggest that the company is coming up with another digital asset in the form of NFTs.

Pater *et al.* (2016) examined policies and terms of service of technology platforms, which are onerous, and their impact on digital asset acquisition. In discussing the rights of users and their beneficiaries, Pater *et al.* (2016) explored the hidden complexities of accessing and understanding the terms of services or end-user agreements in online platforms, which affect the digital asset during the life of its holder and the possibility of transfer to executors. The State of Delaware in the United States has attempted to resolve the problem posed by terms of service agreements through legislation. A uniform law defines digital assets to include social media accounts as inheritable property, i.e., the Uniform Fiduciary Access to Digital Assets Act 2015 of Delaware (Blachly, 2015). This legislation is a feat that is rarely visible in Sharīʿah-compliant fintech jurisdictions and, thus, can serve as a model for other jurisdictions.

In line with the above discussion, Hester (2012) observes the issue of proper post-mortem user account management, which has become more complicated for executors by the trend among web companies to integrate a user's various social media accounts through shared logins and application programming interfaces such as Facebook Connect and Facebook's Open Graph, respectively. He, therefore, suggests that with a properly drafted set of terms of service, organisations engaging in online activities will enjoy greater control over their web presence. The author also argued that executors would be able to access and modify the account of deceased users

Another major challenge is the definition of the digital asset itself. In the context of English law, New *et al.* (2017) state that there is no straightforward standard definition of a digital asset within and outside English law, which only describes the features of what constitutes a digital asset. Without referring to the jurisdictional conundrum, Romano (2011) provides a simple definition to the effect that digital assets are contents owned by an individual, stored in digital form. However, the author broadens the discussion to encompass any digital elements of an asset with value including online accounts. However, both definitions only suggest what constitutes a digital asset without giving a single working definition or specific reference to financial technologies.

Foster (2019) provides an extensive analysis of the meaning of 'asset' from both the English and Islamic law traditions. In his work, it is understood that 'asset' goes beyond property and extends to anything that produces value or ownership. In effect, this determines the distinction between contractual obligations in debt and proprietary rights, which in modern property law are known as 'subjective rights'. However, the paper falls short of covering the field as it provides a general understanding of property and assets with no specific reference to digital assets.

Hopkins (2013) provides a more comprehensive discussion on the status and succession of digital assets after the owner's death. He provides a general overview of how digital life develops—as a result, paving the way for the digitalisation of assets. The assets of concern in this paper are social media accounts such as Facebook, Youtube and the entire digital life of the deceased. While examining the problems of planning for the management and disposition of digital assets, he compares the huge virtual cemetery created as a result of an estimated thirty million Facebook profiles that will outlive their owners. The paper concludes with the need to reinforce digital asset owners' property rights, privacy, and asset planning rights. According to the author, this will create a balance between traditional asset planning methods and a digital asset without jeopardising the deceased's privacy, security, and legacy goals. He successfully analyses the issue of ownership and transfer of digital assets while referring to some state legislations and terms of service agreements. However, Davidson (2013), while reviewing Hopkins (2013), suggests the need for a standard language for terms of service agreements and a model of legislation to tackle the digital dilemma.

Nelson (2012), in his article, maintained that all types of digital assets must be considered by executors irrespective of the monetary or aesthetic value attached. According to the authors, 'one might easily assume that video games are merely childish, that bitcoin is a fad and that there is no value in the digital knowledge accumulated by a person over his or her lifetime' (Nelson, 2012, p. 13). Although they may not be tangible and may not be legal tender, at least in the traditional sense, they are valuable assets, whether monetarily or sentimentally. It is no longer good enough only to rake in the traditional tangible assets. Modern executors forget this at their peril. He further highlighted the importance of maintaining the confidentiality of digital assets by executors that the law may not protect. The writer refers to Canadian law on this issue.

In addition, Pinch (2015) maintained the view that a successful plan for digital assets will address the issue of digital asset distribution. This could only be achieved if individuals plan for their digital assets during their lifetime by selecting trustworthy digital asset executors. From a different aspect, Perrone (2012) examines the digital asset policies of companies to determine the practical ways of estate planning for digital assets and evaluate the significant issues therein. Study of the literature shows that digital asset planning in Islamic law and finance has not received adequate attention, hence the need for this research.

Islamic law is considered by its adherents to govern inheritance and succession law (*farāʾiḍ*) (Muhammad, 2012; Razimi & Shahril, 2016). Islamic law of contract, Islamic property law, Islamic finance, and Islamic law of inheritance all deal with matters involving ownership and transfer of property or proprietary rights in a property (Mersch, 2019). Muslim scholars construe Islamic principles to be broad enough and flexible enough to accommodate certain

societal changes and provide solutions for Muslims to act within the confines of their religion. As such, with increasing digitalisation, intellectual property laws, online businesses, IAPs, online accounts, and Sharīʿah-compliant fintech platforms are part of the spectrum of areas covered under the Sharīʿah.

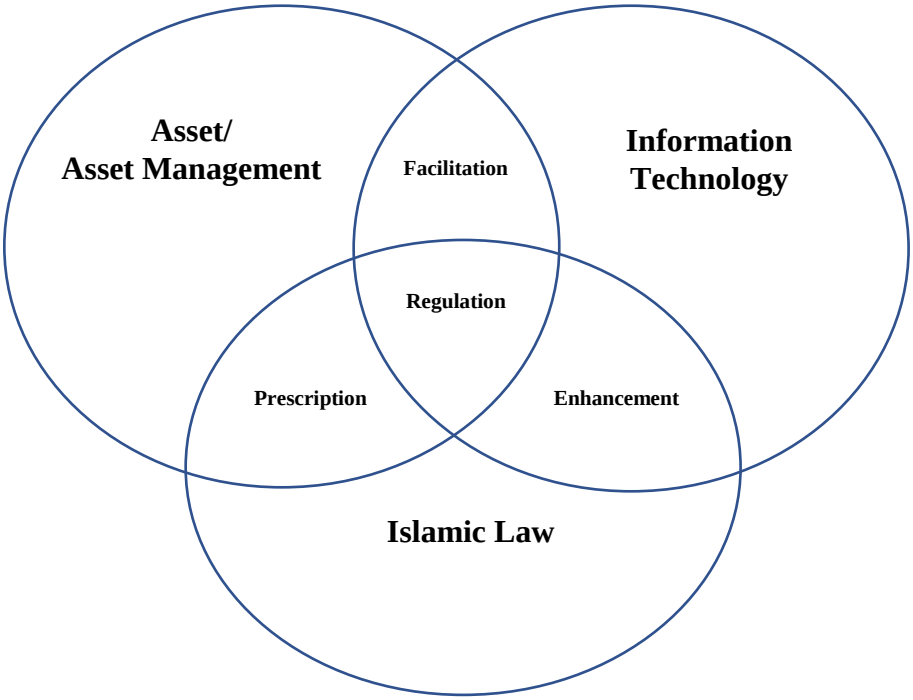
Raslan (2007) assesses the position of Sharīʿah on the protection and enforcement of intellectual property rights (IPRs) by pointing out the views of the majority and minority Muslim scholars on protecting intellectual rights. Although the scope of the research is limited to Egypt, the author concludes by suggesting ways to enhance protection of intellectual rights in accordance with the Sharīʿah. Also, while discussing ownership of private property in Islam and IPRs, Jamar (1992, p. 33) highlighted how Islam views private property and rights as sacred and inviolable in any relationship between individuals or the state. He further discussed aspects of Islamic property law on how ownership, interest, and title of a property are obtained. The author concludes by ascertaining that the idea of intangible intellectual property law is not new in Islam. No studies we are aware of have examined the succession to digital assets and its implications for Sharīʿah-compliant fintech.

Financial assets and unclaimed funds are common types of assets that legal heirs may inherit. AlMasnad (2016), in a thesis focusing on unclaimed monies in Saudi Arabian banks, explored the Islamic position on unclaimed monies based on three criteria: Islamic jurisprudence, transparency of Saudi Arabian banks, and treatment of unjust enrichment. The thesis also provided some comparisons of unclaimed property laws worldwide, including the United States of America (USA), Switzerland, the United Kingdom (UK), Malaysia and Qatar. AlMasnad's work did not, however, focus on unclaimed properties emanating from digital assets which are fast becoming the norm in many countries.

RESEARCH METHODOLOGY

This paper adopts a qualitative analysis of both primary and secondary sources from existing journals and regulatory instruments in Islamic finance jurisdictions such as Malaysia and Saudi Arabia. The paper also made reference to emerging regulations on digital assets in Malaysia and their implication for Sharīʿah-compliant fintech platforms. The framework for the discussion comprises three concepts: property management, technology and Islamic finance law. A discussion on digital assets in Sharīʿah-compliant fintech will necessitate intersections between the triad elements, as illustrated in **Figure 1**. The Venn diagram further identifies specific impacts of the intersections, i.e., facilitation, prescription and enhancement with the need for harmony through regulation.

Figure 1: Conceptual Framework for Digital Assets in Sharīʿah-Compliant Fintech



Source: Authors' own

DISCUSSION

This section discusses the perspective on property and financial rights. This provides a basis for further analysis of laws on unclaimed funds in financial institutions and their implication in Sharīʿah-compliant fintech. Reference shall be made to traditional practices from the sources of Islamic law on the need to ensure that the rights of every account holder and their legal heirs are proactively protected. From the preceding analysis, existing research shows that there is a gap in digital assets research from the Sharīʿah viewpoint. The increasing digitalisation of all human spheres from social media, property acquisition and financial technology makes the attention to digital assets regulation more necessary.

Property and Financial Rights: A Sharīʿah Perspective

Common words used to refer to 'property' in Islamic legal tradition are '*milk*' or '*ayn*' (Inalcik, 1955; Ziadeh, 1993). Another tangential word used to refer to a property is *māl* (*amwāl* plural), also translated as 'wealth', which could be tangible and intangible properties, movable or immovable property (Islam, 1999; Turner, 2006; Malkawi, 2013a). Muslim jurists have enlarged the meaning of property to encompass intellectual property and further extended it to include modern digital assets. It has been argued that the alliance between Islamic law and IPRs may look strange. However, early Muslim Arabs recognised intellectual rights in a rudimentary form by affording some moral rights to the author such as the social standing enjoyed by Arab poets

in the society (Malkawi, 2013b). This could be the basis for rights over intangible property in Islamic law.

A comparative definition of property and its attributes among the majority of Islamic jurists was given as 'what has value with which it is exchangeable; and the destructor of it would be made liable to pay compensation; and what the people would not usually throw away or disown, such as money, and the likes [*sic*]' (Islam, 1999, p. 364). This definition can establish the financial rights acquired over property of all kinds. Other studies such as Malkawi (2013a, p. 625) argued: 'In Shari'ah, terms such as property can have more than one meaning, and one must look beyond classical definitions. Shari'ah can evolve to accommodate new realities by affording protection to intellectual property'. The legal basis for property and financial rights of every individual over assets is founded on the rules of contract in Islamic law (Habachy, 1962). Similarly, Islamic law of inheritance (*farāʾiḍ*) stipulates the rights of heirs (Jamar, 1992). This section will consider the Sharīʿah basis and rights of individuals over digital asset management. Suggestions will be made on the prevention of unclaimed digital assets in Sharīʿah-compliant fintech.

Under the Sharīʿah, financial assets confer some rights upon living parties and their successors upon death. In order to serve as evidence when a dispute arises, Islamic law requires that contractual terms be in writing or oral form with two witnesses. This is the central principle established in the Qurʾān (2:282)—i.e., *āyat al-dayn* (the verse of debt)—which enjoins contracting parties to put the financial transaction into writing and establishes the requirement of witnesses and evidence (Haleem, 2017). Other elements which must be present in a contract are the contracting parties (which extend to the successors), subject matter of the contract, and the form, i.e., offer and acceptance (Habachy, 1962).

Farāʾiḍ (Islamic rules of inheritance) comprise another area of law relevant to the discussion on digital assets. Private property rights over assets and unclaimed money for the successors to contracts are protected in the Sharīʿah. According to Bhala (2011), there are three acceptable ways of acquiring control and ownership rights over an asset in Islamic law. They are purchase or sale, gift or bequest, and lastly, inheritance. Control of assets in the form of safekeeping is not intended to be perpetual; rather, it is subject to the legal right of the owner to transfer and successors to benefit. In the same vein, the Qurʾān (4:29) enjoins Muslims not to 'consume one another's wealth unjustly but only [in lawful] business by mutual consent'. One of the imports from this verse is the inviolability of property rights of a Muslim without just cause or mutual consent.

From the Sunnah traditions, there are pronouncements of the Prophet (SAW) for the protection of property rights of a Muslim. Loss of control and ownership right over property or assets is harmful to the legal owner and successors. It was reported that the Prophet (SAW) said: 'The blood, honour and property of a Muslim may not be violated by another Muslim' (Nawawi, 2014, Book 18, Hadith 1527). This hadith is in reference to usurping the property of other Muslims and, by implication, non-Muslims. Another Muslim here could refer to individuals, corporates and Sharīʿah-compliant businesses.

In the context of banking, where there is an agreement between the account holder and the financial institution, the agreement binds both parties with respect to the depositor's funds. In the same vein, the terms of service agreement in digital banking regulates the transactions

between the account holder and the platform. In the context of digital contracts in fintech, the essential requirement of writing is fulfilled through a digital medium while the three other elements (i.e., subject matter of the contract, offer and acceptance) are present. It is uncertain whether the requirement of witnesses as provided in the Sharīʿah is fulfilled in the contemporary fintech environment.

The rights of successors-in-title over the property of an individual are to be protected as part of the duties of a person in possession of the private property. These persons include individuals, banks and other institutions that are in the custody of the property. These rights of the successors also include liabilities as the heirs or administrators are liable to pay the debt and obligations from the asset of the deceased (Bhala, 2011). In the context of financial institutions and fintech platforms, the bank often serves as the custodian of the asset while the account holder remains the owner. The Sunnah placed a duty upon every Muslim to write down what may be inheritable from him including his or her liabilities. In a hadith reported in the *Muwaṭṭaʾ* of Imam Mālik, Prophet Muhammad (SAW) was reported to have said: 'It is the duty of a Muslim man who has something to be given as a bequest not to spend two nights without writing a will about it'. Based on this, fintech account holders are supposed to convert the unwritten characteristics of the digital asset to ensure that it can be found by their heirs.

Where it has not been written down as enjoined in the hadith, such asset becomes an unclaimed asset. There have been discussions on the application of the doctrine of *luqaṭah* and the concept of *bayt al-māl* in the handling of unclaimed money. These concepts, which are traceable to Islamic legal traditions, could be considered for digital assets in Sharīʿah-compliant fintech.

Luqaṭah (pl. *luqaṭ*) is the term used in Islamic jurisprudence for a thing (usually non-living) or treasure that is found fallen in the way without the finder (*laqīṭ*) having actively searched for it. For living things such as cattle, the term '*thualah*' is used (Ali, 2010). The importance of the doctrine of *luqaṭah* is to protect wealth that is lost or missing from unlawful usurpation by the finder or a person who has custody of such a thing. The finder has no ownership of such an item until specific procedures have been performed. Such procedures depend on the nature of the *luqaṭah*. From the Sunnah, there is a report of a person who asked the Prophet (SAW) about money found on the street. The Prophet (SAW) ordered that he make an announcement for a year (three years in another report) with a definite description and characteristics of the money. If no one comes forward to reclaim it, then the finder can utilise the money (Bukhari, 1956, Book 42, Hadith 608).

Similarly, Islamic law provides specific rules that must be complied with before the disposal of unclaimed money for a missing person who becomes unreachable. After such rules have been complied with, the court may pronounce a decision on the unclaimed money. The relevance on *bayt al-māl* comes to the fore in this instance as the bank is not allowed under the Sharīʿah to usurp the asset of the deceased depositor where the legal heirs are not available to claim the funds. In the absence of *bayt al-māl*, other mechanisms for the public good may be considered. The next section will examine the regulatory treatment of unclaimed funds in the Malaysian and Saudi Arabian banking sectors and its adequacy for Sharīʿah-compliant fintech.

Treatment of Unclaimed Money in Malaysia and Saudi Arabia

Unlike traditional money, the emergence of digital banks and fintech raises regulatory issues about new ways of creating digital assets and their custody, usage and inheritance. Unclaimed funds or assets are already overwhelming many countries despite the existence of regulatory policies. This section examines the treatment of unclaimed funds in Malaysia and Saudi Arabia and analyses its applicability to Sharīʿah-compliant fintech. The choice of Malaysia and Saudi Arabia in this paper is based on the Global Islamic Fintech Report 2021, which ranked Malaysia, Saudi Arabia and the United Arab Emirates (UAE) as the top three jurisdictions for Islamic fintech companies among 64 countries in the Global Islamic Fintech (GIFT) Index (Elipses, 2021). The report also showed that digital asset regulation is largely unexplored in Muslim countries.

Digital assets, being a category of securities along with accrued dividends or profits, are subject to a dormancy period. In other words, dormancy for a specific period and absence of correspondence with bank customers via the contacts' known address or email are prerequisites for classifying money as unclaimed (Griffin, 1958).

Malaysia is a foremost Islamic finance jurisdiction and has an overwhelming amount of unclaimed funds in its banking system (Halim *et al.,* 2018). According to the Office of the Accountant General of the Federation, Malaysia, as of November 2019, the amount of unclaimed money in Malaysia stands at RM10.8 billion (USD2.3 billion), an amount which would have been transmitted to the legal owners or their heirs.

It is assumed that the personalised Sharīʿah-compliant fintech has contributed a fraction of the unclaimed funds. There is currently no special regulatory regime for unclaimed funds from fintech accounts. Fintech, which is growing fast, is expected to add to the increasing assets through digital assets if appropriate measures are not taken. As a basis for digital assets in fintech, it is essential to inquire about the relevance of current regulation on unclaimed funds in the banking industry and its suitability for unclaimed funds in fintech accounts. For this purpose, the following regulations in Malaysia are examined.

Digital Assets Regulation and Malaysia's Unclaimed Moneys Act 1965

Emerging regulations on digital assets in Malaysia followed the existing law on securities trading. This part examines the emerging regulation of digital assets and its scope in the Unclaimed Moneys Act 1965. In Malaysia, pursuant to the Capital Markets and Services Act 2007, the Securities Commission Malaysia issued the Capital Markets and Services (Prescription of Securities) (Digital Currency and Digital Token) Order 2019, which came into effect on 15 January 2019. Subsequent guidelines have been issued on Recognised Market Operators (RMOs). Under the regulation, a RMO is a digital asset exchange that operates an electronic platform for trading digital assets.

The latest in the series of guidelines is the 'Guidelines on Digital Assets', which took effect on 28 October 2020 (revised on 19 December 2022). Paragraph 1.02 provides a general basis for digital assets as securities for the purposes of securities laws. It further specifies that the guidelines apply to digital currencies and digital tokens that satisfy the requirements of 'Capital Markets and Services (Prescription of Securities) (Digital Currency and Digital Token) Order 2019' through the operationalisation of initial exchange offering (IEO) platform and digital asset

custody. The Guidelines declared in paragraph 1.04 the position regarding the use of digital assets as means of payment or legal tender. It clearly states:

> Notwithstanding anything in these Guidelines, digital currencies and digital tokens are not recognised as a legal tender nor as a form of payment instrument that is regulated by Bank Negara Malaysia (BNM) (SC, 2022, para. 1.04).

This further reiterates the idea that both digital currency and tokens are securities which may be bought and traded in the secondary market but are not a medium of exchange. Other products in the market can be considered unregulated digital assets. For regulated digital assets, the role of safekeeping, holding, storing and custody of digital assets is assigned to the Digital Asset Custodian (DAC) under Part D of the Guidelines on Digital Assets 2020. This regulation effectively categorised digital assets as securities under the purview of the Securities Commission Malaysia.

According to Section 5 (2) of the Malaysian Unclaimed Moneys Act 1965, securities are one of the sources of unclaimed funds. It provides:

> For the purposes of this Part "money paid into court" means money or any security paid into court or paid into any bank (whether in the name or to the credit of any officer of the court or otherwise) …from the time of such payment includes any ***security*** or money into which such first-mentioned money or ***security*** or any part thereof is or has been converted and all interest and every dividend or other profit accrued or accruing from any such money or ***security*** up to the time of payment into the Consolidated Revenue Account, and for the purpose of such payment into the Consolidated Revenue Account includes the proceeds of the sale or conversion into money of any such ***security*** under section 6. [emphasis by authors]

The scope of application of the word 'security' in the Unclaimed Moneys Act 1965 appears clear to include digital assets as regulated by the Securities Commission Malaysia, and the Securities Central Industry Depositories Act 1991 (SICDA) – Amendment 1998 Act A1039. This also includes profits, dividends or other accruals from shares, bonds and other financial securities.

The dormancy period prescribed before an unclaimed security can be sold and the amount realised paid into the Consolidated Revenue Account is 15 years. This is pursuant to Section 6 of the Unclaimed Moneys Act. This period is higher compared to seven years for savings, current and fixed deposit accounts, as provided in Section 8 of the Act. This category is arguably applied to Islamic finance and Sharīʿah-compliant fintech accounts just like any financial institution in Malaysia. Other unclaimed funds categories covered by the Act include: amounts legally payable to the owner but unpaid for a period not less than one year and trade account which has remained dormant for a period not less than two years.

In Malaysia, the Accountant General of Malaysia is appointed by the Minister of Finance as the Registrar of Unclaimed Moneys; unclaimed money and securities are managed under the trusteeship of the Registrar. Part II of the Act mandates the Registrar to serve as trustee to the unclaimed moneys received; refund the unclaimed moneys to claimants who provide proof that he has a legal right over the money to be claimed; inspect the records of the company or firm to

ensure compliance with the provisions of the Act; and suggest the imposition of compound and penalty on the company or firm that has committed an offence under the Act.

Upon providing proof of legal right, the Registrar is also authorised to refund such monies to the claimants. In the case of digital assets which are not necessarily known to the heirs and executors of the deceased account holder, the chances of loss are high. The knowledge of the existence of the account and submitting claims to the Registrar is a precondition.

The causes of unclaimed funds, digital assets and securities are the owner's death and the lack of awareness of the accounts by legal heirs. It is the duty of the relatives and next of kin to notify the bank or fintech platform about the death of the holder of the assets. This is, however, subject to the awareness of the heirs about the existence of the digital assets, which are often not evidenced by physical documents. Other causes are leaving an account with a low balance instead of closing, change of contact address/contact details and lack of financial literacy on the part of the owner (Azmi & Mohammad, 2011).

Companies—including banks and financial institutions—that are holding unclaimed funds have a duty under the Act to transfer dormant accounts to the Registrar. These companies include fintech platforms, Digital Assets Exchanges (DAXs) and Digital Assets Custodians (DACs). Before an account can be considered dormant, the account holding platform is obliged to send notices to the customer requesting them to reactivate or close the account. In the case of fintech platforms, notice may apply to emails and mobile numbers due to the nature of the account. Where a change of electronic contact details has occurred, the notice will be ineffective. If no response is received, the bank will stop sending correspondences to reduce the risk of fraud. Thus, the account and its fund will be classified as 'unclaimed money'.

In 2019, the Saudi Central Bank (SAMA) and Central Bank of the UAE (CBUAE) formed a joint effort to understand distributed ledger technology and cross-border payment through the use of digital currency. Known as 'Project Aber', the report examined use cases for digital currencies in securities, cross-border payment and other aspects (SAMA & CBUAE, 2020). The intricacies of unclaimed digital assets are not a major consideration in this report as the regulator applies existing law on unclaimed money and deposits in financial institutions (AlMasnad, 2016). According to AlMasnad (2016), the existing law in Saudi Arabia is inadequate to cater for unclaimed money and is not in accordance with Islamic law on private property rights. The reasons adduced are that banks are granted absolute control over the depositors funds and dormant accounts owners. Secondly, the existing law causes hardship for the heirs due to insufficient regulation and legal uncertainty in the level of due diligence of the banks. In addition, the heirs are often unaware of the money kept in the bank, which could be claimed by anyone who can provide sufficient evidence.

The regulators are not transparent in announcing the volume of unclaimed money and any accruals and details on such dormant accounts. SAMA has continued to argue that banking and privacy laws prevent the banks from publishing dormant accounts in public or on websites. The study added that banks have continued to take advantage of this regulatory weakness to invest and reinvest such money. Eight prominent banks in the Kingdom were found to have no clear policy on dormant accounts and unclaimed money on their websites (AlMasnad, 2016).

It is assumed that the personalised Sharīʿah-compliant fintech has contributed to the increase due to the opacity of unclaimed money and digital assets. Fintech, which is growing

fast, is expected to add to the increasing assets through digital assets if appropriate measures are not taken. From the preceding discussion, it can be concluded that the laws applicable to unclaimed funds and monetary assets in Malaysia and Saudi Arabia are applicable for Sharīʿah-compliant fintech platforms and digital assets which are regarded as securities. However, more could be done to consider a distinct and proactive regulation to avoid loss of funds and ensure devolution of funds to the legal heirs of the account holders.

By establishing a Sharīʿah basis for digital asset management, the Sharīʿah treatment of fintech accounts could provide more alternatives for the management of digital assets of deceased account holders in the event of non-operation of the account.

CONCLUSION AND POLICY RECOMMENDATIONS

Fintech is characterised by a digital interface between the parties, the documentation and access, unlike traditional financial services. This interface makes it almost impossible for legal heirs who are not aware of the digital assets of the deceased to benefit from the digital assets of the owner. Islamic law ensures the protection of private property rights of everyone and seeks to prevent harm to the legal heirs.

This paper has examined the nature of digital assets while distinguishing tangible and intangible assets. It also highlighted the nature and characteristics of digital assets and the various categories. Attempts were made to trace property rights under the Sharīʿah and its relevance to unclaimed money, securities and application to digital assets in Muslim countries, i.e., Malaysia and Saudi Arabia.

It appears that there is a lot to consider in the regulation towards the prevention of digital intestacy and loss of digital assets in Sharīʿah-compliant fintech. In the light of the foregoing, the following recommendations are proposed:

1. Enhanced e-KYC: Enhanced Electronic Know-Your-Customer is an advanced way to prepare for digital assets management. Customer information provided in e-KYC should include complete details of next of kin.
2. Provision of digital assets policy by fintech platforms: Such policies may include the appointment of legacy contacts and details of legal heirs.
3. Waqf treatment for unclaimed money: Creating cash waqf for digital assets, securities, dividends and all money that have remained unclaimed for a specified period should be encouraged.
4. Role of telecommunication companies (telcos) and Internet service providers (ISPs) in digital assets management: The volume of telecommunication and personal data in the custody of telcos and ISPs could help trace digital assets.

Beyond conceptual analysis, empirical studies are required on digital afterlife planning for digital asset holders, Sharīʿah-compliant fintech platforms and regulators.

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