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Blockchain for Waqf Management

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Abstract

The notion of waqf has always exerted a rather significant effect upon the progression of the Muslims from the light of socioeconomic by incorporating participants from small or huge groups in a collaborative manner. In fact, waqf does not only refer to non-movable assets, but also cash donations as funds with continuous income. Beyond doubt, waqf in terms of cash benefits in terms of its liquidity and flexibility. Hence, some frameworks that serve as guideline in managing waqf cash have been generated so as to enhance social services. In recent times, integration of digital technology has allowed improved specialty, along with vast knowledge, enhanced safety and quality, as well as increment in productivity. As such, the Blockchain (BC) is a cutting-edge advancement linked to bitcoin. The fundamental concept of the BC refers to the access to ledger by its participants without the need of a third party. Therefore, the BC could be applied in waqf as a tool for accumulating funds across the globe in a hassle-free manner. With that claimed, the BC eases provision of perpetual funds for better waqf management. As such, by using literature approach, this study looked into the technology of BC from the light of waqf management associated to movable and immovable assets. The outcomes from this work offer a framework for further studies pertaining to BC, which may serve as a new model for waqf management.

Keywords: blockchain, waqf, bitcoin

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1. Introduction

The notion of waqf has always exerted a rather significant effect upon the progression of the Muslims from the light of socio economic by incorporating participants from small or huge groups in a collaborative manner. In fact, waqf does not only refer to non-movable assets, but also cash donations as funds with continuous income. Beyond doubt, waqf in terms of cash benefits in terms of its liquidity and flexibility. Hence, some frameworks that serve as guideline in managing waqf cash have been generated so as to enhance social services. In recent times, integration of digital technology has allowed improved specialty, along with vast knowledge, enhanced safety and quality, as well as increment in productivity (Turk & Klinc, 2017). As such, the Blockchain (BC)

technology is a cutting-edge advancement linked to bitcoin. The fundamental concept of the BC refers to the access to ledger by its participants without the need of a third party. Besides, the BC reckons equally all network nodes, which consider the communication between human and computers without any special privilege or discrimination (Llacuna, 2018). In addition, BC has the potential to bring about a revolution in the present virtual exchanges, which is predicted to be lower in cost and direct as involvement of a third party is disregarded. As the BC can be applied to secure crucial data or to change ownership, it is viewed to benefit the society at large with minimized intricacy (Ølnes et al., 2016).

Therefore, the BC could be applied in waqf as a tool for accumulating funds across the globe in a hassle-free manner. With that claimed, the BC eases provision of perpetual funds for better waqf management. As such, this study looked into the technology of BC from the light of waqf management associated to movable and immovable assets. The outcomes from this work offer a platform for further studies pertaining to BC, which may serve as an instrument for waqf. Nevertheless, integration of BC in waqf has to be probed further due to involvement of many transacting parties, aside from ascertaining that BC is indeed suitable for waqf management. The yields of this work contribute greatly in the light of waqf and BC as this topic is of scarcity. Besides, the motivation to carry out this study brews from the involvement of conglomerates and those respected with high information in the waqf projects. Furthermore, this study investigated the use of BC in setting up an infrastructure to aid in waqf management via easy technology to build information, to display the trends in communication among its participants in a hierarchy manner, as well as the peer-to-peer (P2P) type of correlations. Hence, the BC could manage information within the waqf system by enhancing the aspects of trustworthiness and reliability of the activities carried out, the beneficiaries, the waqifs, and the recorded amounts of materials, as for the phase of maintaining facility, BC could secure data that are private and confidential.

Within the globalised system of the economies, the government functions as the organiser and the regulator in managing the waqf. Increased involvement of the government for waqf development indicates lower risk management. In fact, the government has considered waqf as a fraction for economy progression with increased participation in certain established projects to boost the economy. Nonetheless, more involvement of the government signifies more stringent bureaucracy for adherence. Such notion could be proven wrong when the correct application is used, for example, the BC technology. As such, this work looked into the function of BC for sources tracking and waqf user identification. Through the use of BC, registration of the beneficiaries

and the wafiqs is eased. Therefore, this study determines the ability of BC in the light of waqf management models so as to support and ensure the sustenance of commons-oriented communities and system transparency. The approach, hence, emphasises on associating the parties involved in order to unravel trade-offs within the system, as well as the manner these are viewed by the society in establishing an effective management system. This study referred to the literature in identifying issues related waqf management and the motivation of this study comes from the involvement of dynamic groups in waqf projects. Hence, their correlations are probed into in a hierarchical manner or P2P, especially at high information stages and centralise data management, which are essential due to integration of technology. With easy use of technology, the trends of communication between those involved display P2P relationship. Therefore, the BC could be adopted as a trustworthy tool to manage information throughout the life-cycle of building. A structured and systematic literature review is conducted to ensure that the BC technology is well explored as it is a new field of study publications. However, with rising academic interest of the topic, the literatures are still limited. Therefore, the finding of the research is aimed to enrich the literatures of BC technology mainly related to waqf management.

2. Research Methodology

This study employed qualitative research approach to obtain a multifaceted understanding of waqf experts views concerning blockchain in addressing waqf management. To gather views and opinion, semi-structured interviews with two experts who comprised of blockchain and Shariah scholar in waqf. The interviews were guided by an interview protocol and probing questions were used to pursue issues and to enhance understanding of the responses, and at the same time improved the validity and reliability of the interviews conducted (Yin, 2003). Hence, the research findings from the study will provide a comprehensive and realistic input of the potential of blockchain as a mechanism for waqf management.

3. Literature Review

The technology of BC originates from the bitcoin success, which can be used in non-financial and financial areas worldwide. The BC has caused huge transformation in the digital arena by decentralising the P2P effects for recording of transactions, such as agreements and contracts that involve third parties. The transactions that take

place, which are recorded permanently in public ledger, are affirmed via consensus by the majority of those involved within the system. The BC records each transaction with secured storage without involving any additional parties. This 'Proof-of-Work' consensus protocol is employed to determine the transaction validity as recoded in BC (Davidson et al., 2016). Besides, Kim et al. (2017) suggested the application of BC for trade of assets due to its reliability and non-intricate processes. This also ascertains a trading system that reflects prices based on the actual market that cannot be modified or altered. Thus, the technology of BC, which follows after the success of bitcoin, could be employed for numerous applications, including waqf. The BC is deemed to aid in waqf management for it is reflective of charity works and involvement of many parties. As the BC is able to record every transaction and offer transparent report, it will be very useful for the benefit of waqifs and beneficiaries, as well as waqf management, which appears to be an essential feature of waqf.

Some have also looked into the benefits of BC in increasing public services, mainly because it can minimise costs and intricacy, apart from exceptional transaction records (Palfreyman, 2015). Meanwhile, Ølnes et al. (2016) depicted the advantages of BC in its implementation within the online government system, as well as the function of BC architecture governance in compliance with the public sphere. Next, Turk and Klinc (2017) proposed the application of BC to solve a number of issues related to managing construction data for decentralisation, thus opening research avenue in that path. The BC technology incorporates smart contract for automated execution of contract terms in a transparent way (Crosby et al., 2015). On the other hand, Zhang (2017) asserted the promising potential of BC in simplifying the billing system within the P2P energy trade market. Next, Kshetri (2017) claimed that BC may prevent forgery and manipulation, thus protecting privacy and enforcing cyber security due to storage of data in cloud. Additionally, Pazaitis et al. (2017) asserted that the BC is suitable for commons-based system in support of economy-sharing. Meanwhile, Oh and Shong (2017) claimed that BC can diminish third-party involvement within the financial system, which may lead to a shift in the transaction trends among consumers.

4. Proposed Model

Waqf Blockchain (WB) model is proposed to provide facilities in raising cash waqf using BC technology. This model utilises the concept of cash waqf to raise funding directed to the waqf institution and others who have contribution to the services of distribution

of cash waqf. Cash waqf usually involve waqf institution, waqif, beneficiaries investments corporation, and other institution that have cooperation, for example shops for buying asset. WB model will illustrate how BC is able to attain the connectivity and transparency of waqf transaction.
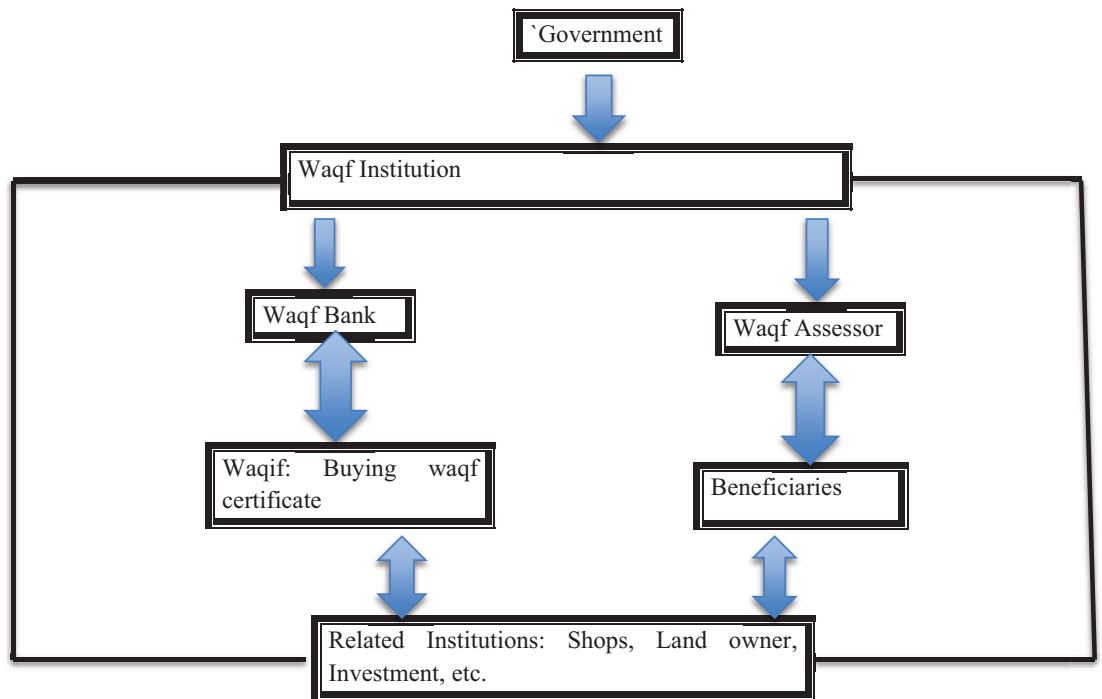

Figure 1: Waqf blockchain model.

The model of Waqf Blockchain (WB) is proposed in this study as it can offer facilities to raise cash waqf via BC. As such, this model is based on the conception that cash raised for waqf funding must be transferred to waqf centre. Within this particular concept, fund collected by waqif (donor) is given to *Nadzir* (cash waqf centre), which will later invest the fund in particular sectors, whereby the gains or profits from the investments are channelled to waqf programs. Besides, these waqf centres are held responsible to manage the fund and not to get into losses. Through BC system, the system of cash waqf can be enhanced by modelling the cash waqf framework. This model of WB reflects the connectivity and the transparency offered by BC in its transactions. Figure 1 illustrates the WB for waqf centre modelling by employing the BC due to involvement of many parties.

In collecting cash waqf, the centre has to have the officials to allow transactions based on requirements to be evaluated by the waqf assessor. Thus, BC can be advantageous to preserve transactions made by waqifs in a trustworthy manner. In older methods, the records of transactions cannot be obtained easily, which can be addressed by BC that keeps each transaction record in a secure manner without any

data loss or manipulation. Upon purchasing a waqf asset, the waqf accessor signature is sought, on top of satisfying certain requirements. Moreover, the BC can be employed to give verification in transactions involving assets. As the beneficiaries can take the asset that only two parties are aware, the BC ascertains the transfer of money without leaking the information to another party, hence hindering unnecessary disputes

Since waqf cash must be made transferable to asset, the BC can record each transaction in an accurate and transparent manner. Each party involved in the transaction will be awarded the right to transfer the assets. For instance, if one requires a tractor, he can apply at the waqf centre and upon approval, only the beneficiary and the supplier are notified of this transaction. Hence, as authorised by the waqf, the beneficiary can collect the tractor from the supplier. Upon payment, the transaction has to be recorded in the system so as to avoid data manipulation. In precise, the transaction could be easily traced as BC keeps its records accurately. Moreover, the technology of BC works closely with accuracy and upon detecting any data manipulation, the related application will be rejected. Therefore, BC can easily identify any corruption that takes place in the waqf centres.

5. Conclusion

The potential of using BC as a waqf management has not been vastly explored. The aim of this study is to provide conceptual framework of waqf management using BC technology. We conclude that blockchain provides solutions to many current problems in waqf management as it possibly enable transactions which is easily auditable and also costless verification of a device's attributes. Due primarily to this and other features, blockchain can possibly play a key role in tracking the sources of supply chain as well as in handling and dealing many transactions. However, it is more likely that it will be built into generic IT infrastructure on top of which construction applications are built, rather than used directly by authors of construction related software. It has a potential to make waqf processes less centralized which opens needs for research in that direction.

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