Creative Destruction of *Halal* Certification (Bodies) By Blockchain Technology?

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Background

The fast-growing global *halal* market is supported by strong economic fundamentals, new categories of *halal* certified products, more stringent requirements for ingredients, and more Muslim countries developing *halal* certification systems. This is resulting in a high demand for *halal* certification services.

The number of *halal* certification bodies (HCBs) worldwide is estimated to stand at around 500, although the exact number is difficult to obtain because there is currently no international or Organization of Islamic Cooperation (OIC) registration database. Generally, HCBs do not recognise each other—although some HCBs, such as the Indonesian Council Of Ulama (Majelis Ulama Indonesia, MUI) and Department of Islamic Development Malaysia (Jabatan Kemajuan Islam Malaysia, JAKIM), create lists of recognised HCBs for issues pertaining to (amongst other things) meat slaughtering and the production of flavourings and perfumes. However, when it comes to slaughtering, HCBs recognise slaughterhouses only once they have inspected them themselves. This decentralised approach to mutual recognition is costly and, in the long-run, unsustainable. Various HCBs based in non-Muslim countries, where they play an important social function in small Muslim communities, have voiced concern about being able to cover the high accreditation fees charged by large HCBs based in Muslim countries.

In recent years, a series of high profile *halal* crises involving top brands have shaken public confidence in the ability of brand owners and HCBs to assure the integrity of *halal* certified products. At times of crisis, HCBs are often unable to support brand owners in a timely and efficient way, creating major sales and reputation damage. This has put pressure on the HCB *halal* certification model to create a more robust and agile *halal* certification system that better supports *halal* certified companies in the event of a *halal* issue or crisis.

High demand for certification services in combination with a decentralised form of accreditation and an inability to support the *halal* industry efficiently

demonstrates cracks in the conventional *halal* certification model, which has become costly, inefficient and risky from a *halal* perspective. This raises the question of whether the current method of *halal* certification is sustainable or if a better alternative should be developed.

A Blockchain Technology Solution

Blockchain is a disrupting technology that constitutes part of the fourth industrial revolution, which is expected to change the way we work and live. Blockchain technology, through smart contracts (protocol), could digitally prescribe processes and requirements according to a *halal* standard, while also verifying *halal* compliance and enforcing the performance of *halal* supply chains. Whether blockchain technology has the capability to replace *halal* certification by HCBs will depend on the blockchain technology solution itself, its adoption by brand owners, and its degree of shariah compliance.

Blockchain technology essentially provides a digital public ledger containing stringed data blocks containing information, similar to our DNA. Through blockchain technology a *halal* network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. It is not stored centrally but distributed on many servers throughout the world as cryptographic proof.

Blockchain removes the need for a trusted third party when ensuring an independent assessment of the integrity of a product or its network, as the longest chain serves as proof of the sequence of events witnessed. This technology could enforce end-to-end *halal* assurance and alignment based on specific *halal* market requirements, supported by automated smart contracts in its process of execution and control.

A *halal* blockchain could provide full transparency throughout all *halal* supply chain transactions. The blockchain has complete information about a supply chain path from source to the point of consumer purchase. Blockchains inject trust into a *halal* supply chain and the value chain of a brand owner, ensuring the brand owner would be better able to guarantee *halal* integrity. They could also be integrated into wider sustainability and corporate responsibility systems to extend the brand market beyond Muslim consumers.

The *halal* certification process, which today can be lengthy, could be shortened if certification processes were automated and compliance verified through blockchain technology. The HCB would only need to be updated (normally about twice a year) on changes made to the *halal* assurance system. Currently this is a manual process, but could easily be replaced with a blockchain solution, ensuring

the *halal* assurance system is always up-to-date. Furthermore, the introduction of a new production process, new product variance, supplier *halal* certificate validity, or a new supplier could all be easily and automatically verified through blockchain technology.

In the event of a *halal* issue in which the *halal* reputation of a brand is at risk through possible contamination or perception issues, blockchain technology could provide transparency while helping to validate an issue and take action quickly to isolate and solve the issue or crisis. As various *halal* crises have shown, time is of the essence in limiting *halal* reputation damage for companies. Blockchain technology would allow for more effective risk and reputation management for brand owners.

Shariah

Halal assurance is essential for Muslims who, according to the Qur'an, need to consume products that are *halal* and wholesome. Labelling something as either *halal* or *haram* (forbidden) is therefore an absolute right under shariah. *Halal* certification, however, not only requires knowledge of shariah, but also the acts of witnessing, of passing a decision, and of compliance.

Industrial supply chains are generally complex, involving both Muslim and non-Muslim countries, often with different *halal* eco-systems that are not always well-regulated. Indeed, many ingredients imported from non-Muslim countries may not be *halal* at all. When there is a possibility that ingredients are *haram* (including, but not limited to, meat), it is essential to obtain *halal* certification. For consumers, *halal* certification is essential not only for food, but also for cosmetics and pharmaceuticals. It protects Muslims from consuming impure things and will avoid baseless doubts, hardship and difficulty.

Key activities undertaken by HCBs are providing: (1) information; (2) testimony; (3) judgement or decree; (4) authority; and (5) general dealings and transactions. Providing information about what is *halal* and *haram* must be done by at least two competent Muslims who are mature, of sound mind, just and free. A judge must also be a Muslim, while also being mature, of sound mind, just, free, physically healthy, secure from slander, have the absolute power to issue a decree, and be neither deaf-dumb nor blind. Although the supervision of Muslim affairs can only be entrusted to a competent Muslim, for general dealings and transactions, a reliable and proficient person is sufficient, who need not necessarily be a Muslim.

Conclusion

From a technology and brand owner point of view, blockchain technology could replace the role of *halal* certification. However, *halal* certification not only requires shariah knowledge, but also the act of witnessing, of passing a decision, and of compliance. From a shariah perspective, there are stringent requirements regarding the activities undertaken by HCBs, notably when providing information, testimony, judgement or decrees. These processes cannot be blindly automated. Therefore, replacing the role of the HCB with blockchain technology may not be possible from the shariah point of view. On the other hand, blockchain technology could make *halal* certification easier for *halal* industries. In the event of a *halal* issue, it could also allow more effective *halal* crisis management and support.

Halal blockchain technology could certainly assist HCBs in implementing process improvements for new applications for *halal* certification, in addition to compliance control, adjustments and renewals, and support for migration from product to supply chain certification.

Unlike quality management or financial systems, the *halal* assurance system is often manual. This is high risk when managing *halal* assurance, both for brand owners and HCBs. Using blockchain technology could help integrate *halal* management systems across companies, and even make them part of a wider mainstream sustainability certification process extending beyond the Muslim market.

To address issues of cost, risk and efficiency, HCBs should embrace *halal* blockchain initiatives. Together with the wider *halal* industry, they should embrace *halal* blockchains in order to make *halal* certification more efficient, provide better control of complex *halal* supply chains, allow migration from product to supply chain certification, and better support the *halal* industry in case of *halal* issues and crises.

Further research into blockchain technology use within *halal* certification is highly recommended. This technology will make it possible to migrate *halal* certification towards supply chains and value chains, incorporating important Islamic values in areas such as sustainability, corporate responsibility, animal welfare, Islamic finance, *takaful*, etc.

Notes

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