

# Halal Certification of Patented Medicines in Indonesia in the Digital Age: A Panacea for Pain?

Mas Rahmah<sup>a</sup>, Nurul Barizah<sup>b</sup>, <sup>a,b</sup>Faculty of Law, Universitas Airlangga, Surabaya, Indonesia, Email: [rahmah@fh.unair.ac.id](mailto:rahmah@fh.unair.ac.id),  
[nurul.barizah@fh.unair.ac.id](mailto:nurul.barizah@fh.unair.ac.id)

The rapid growth of the Muslim population in Indonesia has led to a corresponding increase in the demand for halal medication. To ensure the halal status of medicines, Indonesia has adopted a regulatory framework for halal certification and labelling for all products marketed in the country. The new framework makes halal certification mandatory for all foods, beverages, medicines, cosmetics, chemicals (used for human consumption) sold in Indonesia by October 2019. However, the implementation of the new framework faces complex challenges that require innovative solutions. Apart from basic inconsistencies in the law, there are no clear regulations for implementation. More importantly, most medicines marketed in the country are patented imports and 95% of Indonesian raw pharmaceutical ingredients are imported from different and dubious sources of halal. This situation makes it difficult to audit the halal status of medicines even when patent holders manufacture medicines in Indonesia. Furthermore, Indonesia will need well-regulated and transparent harmonised accreditation procedures for the certification of halal that meet global standards that patent holders can comply with. As a member of the WTO, Indonesia is bound by the Technical Barriers to Trade (TBT) Agreement that prohibit any trade barriers that might be presented by halal certification. With only a few months left for the pharmaceutical industry to meet the October 2019 deadline, there is an urgent need for Indonesia to look at innovative ways to implement the certification of halal medicines effectively and efficiently. This paper critically evaluates the systemic challenges that face halal certification for patented medicines and recommends the use of digital technology as a remedy. It argues that the use of Online Single Submission and BlockChain technology may be the panacea for the challenges of halal certification in Indonesia.

**Key words:** *Halal certification, digital technology, patented medicines, Indonesia.*

## Introduction

The rapid growth of the Muslim population in Indonesia and in other parts of the world has led to a corresponding increase in the demand for halal medicines. This in turn has resulted in the emergence of a global Halal pharmaceuticals industry. However, as noted by Loromzi and Lim, there are several challenges facing this emerging niche industry, foremost of which is the need to establish a proper, well-regulated, and harmonised accreditation and halal management system (Loromzi and Lim, 2015).

These challenges have been highlighted in recent times in Indonesia. In 2014, Indonesia adopted Law No. 33 concerning the Halal Product Guarantee (Halal Law No. 33/2014). According to this law, Halal certification is mandatory for all foods, beverages, medicines, cosmetics, chemicals (used for human consumption), organic and genetically modified products sold in Indonesia as well as machinery and equipment involved in processing these products. A critical element in the Halal Law is that the legislation sets October 2019 as the deadline for compliance with certification. While the law was adopted five years ago, there has not been any consistent national campaign to ensure readiness by manufacturing stakeholders. This paper was written in April 2019. This barely leaves six months for manufacturers to comply with certification requirements.

While the Halal Law is clearly well intentioned, there are many challenges faced by the country and the manufacturers alike. Apart from the obvious practical difficulties regarding the looming deadline, there are also inherent regulatory problems. Firstly, there are contradictory provisions in the legislation. Secondly, there are no clear regulations to implement the law and enforce non-compliance. Thirdly, currently Indonesia does not have a well-regulated and harmonised accreditation and halal management system that is globally accepted. Since most pharmaceuticals sold in Indonesia are imported, this is a major issue. Moreover, as a member of the World Trade Organisation (WTO), Indonesia is bound by the Technical Barrier to Trade (TBT) Agreement and prohibited from erecting any trade barriers. There is an issue as to whether Halal certification, which bans non-halal medicines from entering the Indonesian market, constitutes a violation of WTO rules. Finally, on another practical level, halal certification for medicines will simply be unworkable in practice since 95 % of Indonesian raw pharmaceutical ingredients are imported from various uncertain halal sources, thus making it difficult to audit their halal status.

The application of halal labels is also likely to disrupt the domestic medication distribution system since almost all active ingredients of imported medicines currently in circulation do not have halal certification. Indeed only one % of 930 active ingredients are sourced from Indonesia. The investigations into the manufacturing process and ingredients of medication will be more complex and time consuming, leading to higher costs for consumers. Moreover,

with the deadline so close the Halal Products Certification Agency (BPJH-Badan Penyelenggara Jaminan Halal) will only have a short time to issue halal certificates for all goods and services.

This paper proposes that while the challenges are clearly significant, they are not insurmountable with the application of digital technology such as Online Single Submission and block chain technology that can facilitate investigation, screening and tracking authenticity and validity of halal labels.

## **Methodology**

This paper is based on legal research to evaluate halal certification with the systemic challenges for patented medicines in Indonesia. It is also intended to recommend the use of digital technology as a remedy by using Online Single Submission and Block Chain technology as a panacea for halal certification. To visualise the above views, this paper uses conceptual, statute, and comparative approaches. The primary legal materials used are all applicable legislations, while secondary legal materials are in the form of literature and related materials.

## **Results**

### ***A. Halal Patented Medicines***

Halal is an Arabic word which comes from the Quran meaning permitted, allowed, lawful or legal (Riaz & Chaudry, 2004). Halal can also be understood as permission by Islamic Law to consume or utilise certain things (Ambali & Bakar, 2014). The most important principle of Halal is the permissibility of certain things the right of which is with Allah alone (Al Qaradawi, 2007; Zakaria, 2008). The concept of Halal includes any Islamic Shari'ah-compliant products starting with food and beverages and moving to banking and finance, tourism, cosmetics, jobs, travel, technology and transport services as well as pharmaceuticals (Khan & Haleem, 2016).

The subject of halal products consists of raw materials and manufacturing processes for such products. A product is only halal if the raw materials and ingredients used are halal and it is fully compatible with the Islamic guidelines (Zurina, 2004). The raw materials derived from certain animals are considered non-halal including corpses, blood, and pork (Article 18.1 of Halal Law). Halal manufacturing processes require that the location, facilities, equipment, processing, storage, packaging, distribution and sale of halal products be strictly separated from non-halal products. Additionally, Halal manufacturing facilities must be kept clean and hygienic, free from impurities (najis), and non-halal materials. This is due to the fact the basis of Halal itself is hygiene and health with the objective to ensure that all

products taken or used are absolutely clean and not harmful to human health (Hayati et. al, 2008). Halal principles are not isolated to religious values only, but can be included in a healthy and hygienic cuisine style as people become more health-conscious (Khan & Haleem, 2016).

The halal logo or label on medicines communicates and convinces Muslim consumers that the medicine is produced and prepared according to Islamic requirements. Medicine is halal if it has been prepared, processed, manufactured or stored using instruments or ingredients that were permissible by Islamic Law. The assessment of halal status of medicines does not only apply to the sources involved but also to the synthetic process of active ingredients and excipients (Azzis et. al., 2012). Medicine itself is defined as a substance used to alleviate, nurse, cure or to prevent illness in humans or a substance used to promote better hygiene (Lokman, 2001). Medicine can be ingested, applied, injected or used internally through some other aperture (Halim et. al., 2014).

In order to meet halal standard, the end pharmaceutical products, process and all materials used therein (raw materials, active pharmaceutical ingredients, excipients, and finished dosage forms) must be free from “najis” (filth) that is essential for ensuring the integrity of halal products. To Muslim patients, Halal certified medicines assure that the product does not contain pork, or ingredients derived from pork or other ingredients which are prohibited according to Islamic Law such as alcohol, or non-permitted animal products or derivatives. Any animal products or their derivatives used have to be from animals slaughtered in accordance to Islamic law. It also guarantees that the product has been manufactured using processes and equipment that are dedicated to Halal medicines. This standard also makes the medicine safe for human consumption. In the Halal pharmaceutical context, safety means that the medicine is non-hazardous, non-poisonous and non-intoxicating to humans when consumed, injected or applied for the purpose of therapeutic curing or healthy-living.

In Indonesia, patented medicines account for the majority of the pharmaceutical market (Drug development, 2018). The final product of medicines marketed in Indonesia are patented imports, including raw ingredients. Only 1% of 930 active ingredients come from this country. Ironically, 95% of Indonesian raw pharmaceutical ingredients are imported from various uncertain halal sources. In addition, almost all active ingredients of imported medicines currently in circulation do not have halal certification.

Since Islamic Law is simple and easy to follow, the use of non-halal medication is allowed in a moderate amount if there is an emergency or life-saving situation (Al-Munajjid, 2004). Medicines that contain prohibited ingredients can be used only in the absence of Halal alternatives (Easterbrook & Maddern, 2008). In permissible circumstances, impure substances such as camel’s urine or intoxicants are tolerated remedies for certain diseases

and acceptable strictly for a particular circumstance (Annabi & Wada, 2016). Medicine containing alcohol is necessary for the life of the person who takes it, as recommended by a knowledgeable and trustworthy Muslim physician while there were no Halal alternatives (Al Qaradawi, 2007).

Actually, non-halal medications can be avoided and awareness of halal medications must be developed amongst all health care professionals since the majority of Indonesian patients who seek treatment are Muslims. Muslim patients specifically asked for medicine that was less likely to have non-halal ingredients (Daher et. al., 2015). Muslim academicians, health care and other professionals should produce accessible halal references on specific medications for the public.

### ***B. The Need for Halal Medicines***

The Muslim population consists of about 2.18 billion people across the world. It is estimated that one out of three people in the world will be Muslim by 2030. The halal market is estimated to grow from US 666.25 billion in 2016 to over US R857.45 billion by 2022. The halal market is expected to reach US\$739.59bn by 2025, and the halal market overall – encompasses travel, entertainment, food, finance and other services is expected to reach US\$12.14trn. Islamic Finance accounts for 43% of the halal industry, while the halal food market accounts for 36% (Alan Straton, 2016). Muslim consumer spending is expected to reach US\$2.6 trillion by the end of the decade from roughly US\$1.9 trillion while Indonesia's 204 million people consume about US\$138 billion of halal products each year (Hutton, 2017). Halal products are consumables such as food, beverages, medicines, cosmetics, chemical, biological and genetically engineered products, or any goods that can be uses and applied by humans in accordance with Islamic principles.

The rationales behind sweeping changes in certification rules is to position Indonesia as the benchmark for halal certification. With a population of 262 million, Indonesia is the fourth most populous country in the world (Census.gov, 2018) and the world's largest Muslim population, with 82.7% of people identifying as Muslim (BBC, 2018). The position of the Muslim majority is triggering a big demand for halal pharmaceutical products. The Global Islamic Economy Indicator 2017 announced that Indonesia is in the top 10 countries of the largest halal industrial consumers in the world. In halal medicine and cosmetics, Indonesia is ranked sixth and tenth in the world. According to future projections, the government wants Indonesia to be categorised as the world's top 10 producers of halal products, including pharmaceuticals (Halal Focus, 2017a).

For Indonesian Muslim patients, obtaining bona fide sources of Halal medicine would be paramount and the lack of halal medicines in market circulation need to be simultaneously

addressed to assure the integrity of Halal pharmaceuticals . Although the use of non-halal medicines are potentially permissible in strict circumstances, medicines with halal certification are confidently accepted by consumers especially Muslims as well as those of other religions. There is growing awareness that halal medications should be developed in order to reduce the consumption of non-halal medicines. Lada, et. al., (2009) proposed that as awareness of the impact of halal on medication grows, the concept will expand beyond Halal foods to encapsulate other markets including pharmaceuticals. Shabana (2013) claimed that as Halal awareness increases, the need for industries to be Halal certified will also increase.

### ***C. Benefits of Halal Certification***

Halal certification not only benefits consumers but also producers of medicines . The halal logo or label clearly convinces Muslim consumers that medicines are produced and manufactured in accordance with Islamic Law. Reliable halal certification ensures that consumers do not need to check all the ingredients and the production of such medicines. It will serve halal and healthy products by ensuring all items carrying the halal logo are prepared in the most hygienic way possible for consumption. It also allows consumers to be confident in making an informed choice at the time of purchase.

For medicine producers, halal certification provides a competitive advantage that allows them to use certification as a product differentiation technique which increases company revenue. As Halal certification is considered as a certification standard for quality to differentiate products (Annabi & Wada, 2016), it communicates the quality of medicines to consumers as they are processed differently in accordance with high qualified religious requirements.

Halal product certification is the prerequisite for entering the Indonesian and global Halal market, thus Halal certification for medicines allows producers to meet the Halal requirements from importing countries and can help the business to expand its marketplace in order to increase sales and revenue. It also enhances its marketability not only for Muslim consumers but also non-Muslims. Halal certification will attract all consumers including non-Muslims who now respond positively to halal products (Hasnah, S H. et. al., 2009). In the international market, it can expand the marketability of medicines, especially in other Muslim countries as a result of an increasing awareness of Muslim consumers all over the world of their obligation to consume Halal Medicines.

#### ***D. Halal Certification in Indonesia***

Halal certification is the process of certifying products or services as pronounced by shariah law (Khan & Haleem, 2016). A system of Halal certification and verification becomes a key element as assurance to Muslim consumers regarding halal integrity. To assure halal integrity, in 2014 Indonesia enacted Halal Law No. 33/2014 which obligates Halal certification as mandatory for all products sold in Indonesia as well as for the machinery and equipment involved in processing these products. Halal Law sets October 2019 as the deadline for compliance with certification. This barely leaves six months for manufacturers to comply with the certification requirements.

To oversee the process and provide halal certification, the Government has formed a new institution for halal certificates i.e. BPJH in 2017 under the Halal Law mandate. BPJPH will take over MUI's role, which was previously the sole institution that issued halal certificates. Halal certificates will be issued by the BPJPH, but the process of verifying whether or not a product is halal will be carried out by the Halal Inspection Institution (Lembaga Pemeriksa Halal -LPH). In general, LPH will check and verify whether or not the raw materials and manufacturing process are halal. These activities may be carried out inside or outside the manufacturing facility. LPH may be established by government and public institutions such as Universities. To run its operations, LPH must be accredited by BPJPH, employ at least three inspectors, and have its own laboratory or cooperate with another party that has a laboratory.

To achieve halal certification, pharmaceutical companies must ensure that the end products, equipment and raw materials (processed ingredients, additives and processing aids) used during production comply under Shari'ah (Islamic) Law. In addition, if the companies produce non halal medicines, they must have two different plants at two different locations because Law No. 33/2014 requires that the companies must separate production locations for halal and non-halal food. For imported products, pharmaceutical companies are not obliged to go through the certification process, and are only required to register their 'foreign' halal certification to (BPJH) before the products are marketed and distributed in Indonesia.

Based on Halal Law, after certification as a halal drug, companies must put the Indonesian halal logo on their product packs. This logo communicates to Muslim consumers that marketed medicine is certified according to the Halal standard of the respective BPJPH. Medicines marketed in Indonesia are approved to only use the Indonesian halal logo and it must be displayed on the back or main part of the product package. Before using the logo, companies including importers must obtain approval from the National Agency for Drug

and Food Control (NADFC), based on the Head of NADFC Regulation No. 27/2017 on processed food registration.

Halal Law introduces criminal sanctions imposed for non-compliance with halal related rules, as previously under the MUI regulation criminal sanctions were not possible due to the nature of its status of being an Islamic non-profit organisation. Companies holding halal certification and also LPH. Holders of halal certificates that fail to maintain the halal quality of their products may be subject to 5 year imprisonment or IDR 2 billion in fines. LPH, on the other hand, may be subject to a 2 year imprisonment or IDR 2 billion in fines for failing to safeguard trade secrets in the form of the formula of products that they evaluate.

### ***E. Challenges of Halal Certification***

#### **E.1. Regulatory Challenges**

Halal Law has fundamental flaws that will cause major regulatory problems for the public. Although it purports to establish the legal framework for halal certification and labelling for products, it has contradictory provisions. For instance, Article 4 stipulates that “products that entered, distributed, and traded in Indonesia **must** be certified as halal.” Article 4 can be interpreted to mean that “all products in Indonesia must be certified halal.” In the legal context, “*must*” means “*obligatory and necessary with legal consequence*” (Efendi, 2018). The obligation in Article 4 can be interpreted as non-halal products may not enter or be traded in Indonesia. This obligation will result in restriction of non-halal medicines in Indonesia because drug producers who do not obtain halal certification cannot enter and trade in Indonesia. Conversely Article 26 of the Halal Law provides an opportunity for entry and distribution of non-halal products provided that they bear non-halal information on their label. This contradictory provision is likely to confuse drug producers/companies who market their products in Indonesia.

In addition, Halal Law provides that within two years of legal enactment (in 2016), regulations on halal certification shall be further enforced by government regulation. However, there has been no publication of the Government Regulation as of yet, although the draft government regulation has been finalised. The absence of implementing regulations such as the Presidential Regulation (PP) and the Regulation of the Ministry of Religious Affairs (PMA) leads to legal uncertainty.

Another challenge relates to compliance with international agreements. As a member of WTO, the Indonesian government is bound by the Technical Barrier to Trade (TBT) Agreement of WTO and should not create unnecessary trade barriers in any regulation which contradicts the TBT Agreement. Taking this into account, it is most likely that the

government will eventually permit the importation of non-halal medicines as long as it is clearly labelled as non-halal medicine. It is expected that the government will publish enforcement regulations in line with the WTO Agreement by permitting the importation of non-halal products provided they are clearly labelled as non-halal food.

## **E.2. Practical Challenges**

The enactment of Halal Law and ensuing government regulations are bound to create a myriad of practical challenges. The practical challenges are very complex as halal certification will deal with industry players who are mostly not eager for halal certification. Halal Law is considered burdensome for pharmaceutical businesses because it is difficult to apply. The Association of Pharmaceutical Companies urged the government not to apply halal certification to medicines. They argued that medicines sold in the market are made of materials that lack halal and possibly even forbidden. If certified automatically, drug manufacturers would have difficulty to produce their medicine (Halal Focus, 2017).

In addition, since the government has the task to give a guarantee that every product is halal, or permissible, through the Halal Products Certification Agency (BPJPH), it seems that the agency is the only body with the right to issue halal certificates. The certification body (BPJPH) will only have a short time to issue halal certificates for all goods and services marketed in Indonesia. There is a question related to how the agency can examine a large number of products in such a short time. It will be very difficult for the agency to be able to examine so many products. By comparison, under the previous voluntary halal regime which was overseen by the Indonesian Ulama Council, a semi-governmental body of Muslim clerics issued 35,000 halal certificates over five years. The food and beverage segment has more than 1.6 million companies and tens of millions of products that will need to be inspected (Hutton, 2017). If it is established this year, the BPJPH will only have a short time to issue halal certificates for all products and services. It would seem that in order to meet this target, the agency would simply work as quickly as possible and become nothing more than a rubber-stamping body. In addition, the capacity of the certification agency would need to be continually enhanced to meet the anticipated increase in applications for halal drug approvals.

A lot of experts in specific production processes and drug development are needed in various types of production process within the pharmaceutical production chain. As various types of production processes within the pharmaceutical production chain seek certification, different types of questions particular to each niche process are bound to appear. Therefore, experts in specific production processes and drug development will be needed to manage these questions. Other steps to strengthen the certification process may include introducing

tests for DNA and protein sources, and publishing a list of halal pharmaceutical sources based on available pharmacopoeia (Norazmi & Lim, 2015).

Furthermore, pharmaceutical industry groups are concerned about compliance costs which may be as much as S\$4.4 billion. Businesses face challenges ranging from reprinting labels, which can cost S\$7,000 per product to how to dispose of finished goods that can have a shelf life of three years. Companies will bear the brunt and will be obliged to add halal labels to all products. Company responsibility will be even more challenging because these certificates will have to be renewed regularly. Companies unable to afford the cost of certification will go out of business.

There will be another major inconvenience which is that high compliant cost will increase prices thus causing a drop in sales, given that people's purchasing power continues to decline. In addition, each product without a halal label will have to be withdrawn from the market. According to articles 56 and 57, companies who fail to do so face a two-year jail term or fines of two billion rupiah. Even companies which have products with halal labels will have to withdraw them so that new labels can be attached.

There is still a lack of understanding on regarding the concept of halal that will deter the process. There will be another major inconvenience, which is that each product without a halal label will have to be withdrawn from the Indonesian market. There is still a lack of understanding concerning halal, with most of the community tending to associate it with religious belief.

More crucial is the issue of halal certification for medicines. The investigation into the manufacturing process and medication ingredients will be far more complex and time consuming, leading to higher costs. Since it is obligatory to submit pharmaceutical products to BPJPH, the BPJPH will have to supervise the degree of halal in each stage of production of any product, distribution and the way it is served to consumers. The requirement for halal certification adds one more regulatory layer for pharmaceutical companies. Products not only have to move through more traditional regulatory pathways, complete with various clinical trials, but also meet halal requirements that often ban the use of porcine products. Aside from raising high production costs, this will certainly make it difficult for halal certificate institutions to verify. As a result, the pharmaceutical industry would be vulnerable to sanctions which would affect the stability of pharmaceutical businesses which will ultimately disrupt the supply of medicines to the public.

The greatest challenge concerns the distribution and supply chain. The application of halal labels will disrupt the domestic medication distribution system. Almost all active ingredients of imported medicines currently in circulation do not have halal certification. Only one % of

930 active ingredients come from this country. If all medications containing non-halal certified ingredients are banned, there could be severe disruption to disease prevention programs. Moreover, Halal Law may also potentially disrupt the investment climate in Indonesia, which may work against government efforts to try to achieve an investment-friendly environment at a global level.

## ***F. Digital Halal Certification as a Panacea***

### **F.1. General initiatives**

Indonesia needs to establish an efficient Halal standard that is consistent with international standards. Recently there are more than four hundred known Halal Certification Organisations with various standards: local, regional such as the Arab Gulf Cooperation Councils Halal standard, and international standards (Halal Focus, 2014). Halal regulations need to align with other collective standards from the Organisation of Islamic Countries (OIC), Muslim-majority countries worldwide and international halal standards such as *International Halal Integrity (IHI) Alliance and Standard and Metrology Institute for Islamic Countries (SMIIC)*. More specifically, the government should adhere to halal standards regulated in Codex Alimentarius as part of Indonesia's commitment to the TBT Committee in the WTO. WTO allows each country to apply halal standards to protect Muslim consumers in accordance with GATT Article XX (general exception). However, the halal standard must be established and implemented in accordance with the Technical Barrier to Trade (TBT) Agreement, in order to gain international trade benefits. The Government should observe the provisions of the TBT Agreement in implementing halal standards and measuring the consistency of Halal Law with WTO law. This would also reduce trade restrictions for foreign producers who market their products in the Indonesian territory.

Trade restrictions should be eliminated by providing additional rules or explanatory notes in the application of articles 4 and 26. The rules should also describe procedures relating to non-halal products, so that the interpretation can allow non-halal products to enter Indonesian territory.

In the global context, the BPJPH should be able to cooperate with halal certification bodies in exporting countries in order to recognise halal certification of the countries concerned. This will reduce discriminatory treatment between imported products and domestic products that have halal certification. Moreover, as the regulatory body to proceed halal certification, BPJPH avoids being a rubber-stamping body only because according to Tiemen and Maznah (2013), it is important to have a halal regulatory body which has the role of ensuring halal integrity and oversee the quality assurance mechanism for manufacturers

and suppliers within the supply chain.

Furthermore, the establishment of a halal assurance standard should be made efficient by simplifying the processes and procedures for obtaining halal certificates, whether they are related to additional tests or procedures. Simple processes and efficient procedures will be cost effective. A one-stop shop is required for the processes and procedures to obtain halal certification. The scenarios are primarily to establish proper, well-regulated and harmonised accreditation and management system of halal certification.

## **F.2. Initiatives in Digital Area**

Halal certification is a process whereby the features and quality of products are consistent with the rules established by the Islamic Council, which further enables Halal marking (Straton, 2016). Certifications have become complex, and what makes it even more difficult is the trustworthiness. Strict guidelines need to be maintained given that the Muslim population is dependent on them.

Digital halal certification is a relatively easy way to track the authenticity of halal certification, validation before making a purchase decision. The authenticity and validation of halal certification is important because there have been many instances of halal certificates being wrongly justified. For example in 2011, Orion a Cold Storage in Cape Town, South Africa was accused of using halal labels on disapproved meat. Orion labelled halal on kangaroo meat from Australia and water buffalo meat from India even though they were not approved by South Africa's Muslim Judicial Council (MJC) (Straton, 2017).

According to the United World Halal Development (2017), digital halal certification protects stakeholders from the vulnerability of fraudsters and helps in bridging the gap between industry and consumers by ensuring:

- a) Genuine certification is an essential part of the Halal Authenticity
- b) Certifications are added with patented 2D encrypted QR codes with Track & Trace to make sure they are secured
- c) The reliability of Halal Certificate Issuing Authority / Body
- d) That Halal certificate security is essential as several references are made prior to issuance to a vendor
- e) The security offered is not breached.

## **F.3. Digital Halal Certification: International Trends**

There are emerging trends of digital halal certification in several jurisdictions. One instance

is HalalChain launched in Dubai and developed by HLC Technologies to allow consumers to trace and track halal products, helping them overcome regulatory uncertainty and any doubts about accreditation. HalalChain resolves these issues by offering a permanent public ledger for Halal related transactions across the value chain. As a public blockchain that serves as an open distributed ledger that can record transactions between two parties efficiently in a verifiable and permanent method, HalalChain can track and verify Halal food, pharmaceuticals and cosmetics through all stages of production, processing and distribution across the entire supply chain. The system will revolutionise the integrity of Halal compliance through real-time monitoring, comprehensive Halal standard application, as well as ensuring Halal certification integrity. HalalChain is a comprehensive ecosystem where the Islamic economy and the digital economy complement each other. However, the use of HalalChain is not only limited to the Halal industry, it can also be used to create transparency to food label claims such as organic, non-GMO, and gluten-free (Halal Focus, 2018). HalalChain also provides comprehensive solutions to instant e-payment, e-commerce and other industry applications powered by blockchain and the Internet.

Similarly, UK-based Halal Trail tracks livestock and fresh food from the farm through the supply chain, ensuring that verification is legitimate. On the other hand, HalalGuide is an existing global platform used by 1.5 million Muslims worldwide on a peer-to-peer network, helping them connect with various halal resources. It recently unveiled a partnership with blockchain developer Apla.

#### **F.4. New Digital Technology and the Future of Halal Certification**

Another system is POCertify which is a new decentralised application, using blockchain and smart contract technology to publish Halal certificates. Blockchain technology, together with Islamic principles, will digitally encrypt a Halal Certificate in a PDF format, and verify the Halal Certificate on the blockchain. Blockchain technology has been widely hailed by enthusiasts as revolutionary because it is entirely decentralised. Therefore, storage is not located in one central point, removing the need for powerful central authorities and instead placing control in the hands of individual users (Fin24, 2018). Blockchain technology is a perfect fit for the needs and demands of Halal food traceability. Blockchain solves the global challenges of halal compliance including a lack of a globally recognised Halal certification system, inaccurate and unauthentic data regarding Halal products, poor regulation of raw materials for Halal products and difficulty in managing a centralised regulatory system for Halal food. The condition and status of the product can be updated to Blockchain in real-time and easily accessed by people seeking information about it. The end-consumer benefits from a more holistic understanding of Halal products and can be assured that the items consumed are purely Halal. End-consumers will use the WhatsHalal app, which leverages Blockchain to procure tertiary services such as food delivery and restaurant reservation.



They also contribute to the eco-system by making product enquiries and providing feedback, which in turn can be relayed to producers who can provide more information and/or further refine their processes as necessary.

Smart Contract aims to expedite the application for Halal Certification, while also bringing transparency and traceability to the process, as the information will be publically verifiable, and permanently recorded on BlockChain. All information, such as the results of Halal testing, laboratory and venue inspections, evaluation of the equipment and supplies of producers and results of analysis of the component ingredient list will be recorded on BlockChain. Certifying bodies are able to instantly review information from BlockChain and come to a decision. Therefore, it can save time and money.

By developing digital halal certification, it will be relatively easy to track authenticity of halal certification, validation and more importantly it has the potential to assist Indonesia to become a champion of global halal standards by leading the harmonisation of standards that will be applicable for businesses to navigate and support simple, transparent and straightforward procedures.

## **Conclusion**

As a leading Islamic nation, it is a positive sign that Indonesia has decided to introduce proper standards for Halal certification. However, the reality is that Halal certification is complex, particularly in the process of manufacturing and marketing pharmaceuticals. The challenges faced by Indonesia are compounded by international trade treaty obligations and relevant standards. There are also significant domestic pressures from stakeholders justifiably concerned about the impact of Halal Law. For Indonesia, certification arrangements are potentially a great challenge both on regulatory and practical levels that need an appropriate solution if the country is to realise its ambition of leading the Islamic world in Halal certification. Modern developments in digitisation of halal certification can provide such a solution.



## REFERENCES

- Al-Munajjid, M.S., 2004, Containing Animal Hormones/Organs/Products, [Http://Www.Hdcglobal.Com/Publisher/Pid/](http://www.hdcglobal.com/publisher/pid/)
- Al-Qaradawi, S. Y, 2007. The Lawful And Prohibited In Islam. Lahore, Pakistan :Al-Falah Foundation.
- Ambali, A.R & Bakar, A.N People's, 2014. "Awareness On Halal Foods And Products: Potential Issues For Policy-Makers", *Procedia - Social And Behavioural Sciences*, Vol.121: 3 – 25
- Annabi, C.A., Wada, S,M, 2016. "Halal Pharmaceutical Industry In Nigeria: A Bitter Pill To Swallow", *Journal Of Emerging Economies And Islamic Research*, 2016, Vol. 4, No. 2: 1-12
- Aziz, N.A Et Al. , 2012. "Assessment Of The Halal Status Of Respiratory Pharmaceutical Products In A Hospital", *Procedia - Social And Behavioural Sciences*, Vol 121:158 – 165.
- Bbc. 2018. Indonesia Country Profile. [Https://Www.Bbc.Com/News/World-Asia-Pacific-14921238](https://www.bbc.com/news/world-asia-pacific-14921238).
- Census.Gov., 2018. Population Clock Current Population. [Https://Www.Census.Gov/Popclock/](https://www.census.gov/popclock/) [Accessed 26 July 2018].
- Central Intelligence Agency, 2018. The World Fact Book. [Https://Www.Cia.Gov/Library/Publications/Theworld-Factbook/Geos/Id.Html](https://www.cia.gov/library/publications/the-world-factbook/geos/id.html)
- Daher, M., Chaar, B., & Saini, B. (2015). Impact of patients' religious and spiritual beliefs in pharmacy: From the perspective of the pharmacist. *Research in Social and Administrative Pharmacy*, 11(1), e31-e41.
- Easterbrook, C., Maddern, G., 2008. "Porcine And Bovine Surgical Products: Jewish, Muslim, And Hindu Perspectives". *American Medical Association*, Vol. 143 :366-370.
- Efendi, R.H, 2018. "Halal Industry Can Help Indonesia In International Trade", *The Jakarta Post*, 2 May, [Https://Www.Thejakartapost.Com/Life/2018/05/02/Halal-Industry-Can-Help-Indonesia-In-International-Trade.Html](https://www.thejakartapost.com/life/2018/05/02/halal-industry-can-help-indonesia-in-international-trade.html)



- Fin24, 2018. Greater 'Trust Factor' As Halal Certification Meets Islamic Fin Tech, 12 December, <https://www.fin24.com/companies/ict/greater-trust-factor-as-halal-certification-meets-islamic-fintech-20181212>.
- Halal Focus, 2017a. Indonesia In Top 10 World Halal Consumers, 12 October, <https://halalfocus.net/indonesia-in-top-10-world-halal-consumers/>
- Halal Focus, 2017b. Indonesia: Yphi Encourages Government To Immediately Issue Bpjph Implementation Rules, 6 November, <https://halalfocus.net/indonesia-yphi-encourages-government-to-immediately-issue-bpjph-implementation-rules/>
- Halim, M. A. A., Et Al, 2014. "Halal Pharmaceuticals: Legal, Shari'ah Issues And Fatwa Of Drug, Gelatine And Alcohol". International Journal Of Asian Social Science, Vol. 4, No.12:1176-1190.
- Hasnah, S H. Et Al. 2009. "Influence Of The Halal Certification Mark In Food Product Advertisement In Malaysia", In Hingley, M.K, Adam Lindgreen, A. (Ed), The New Culture Of Food. Marketing Opportunity From Ethnic, Religious And Cultural Diversity. Burlington, England: Gower.
- Hayati, T. A., Et Al. , 2008. Quality Assurance In Halal Food Manufacturing In Malaysia: A Preliminary Study. Proceedings Of International Conference On Mechanical & Manufacturing Engineering (Icme2008), 21– 23 May 2008, Johor Bahru, Malaysia.
- Hutton, J. 2017. "New Indonesian Halal Law Seen Disrupting Business, Hurting Smes", The Business Times, 15 November, <https://halalfocus.net/opinion-new-indonesian-halal-law-seen-disrupting-business-hurting-smes/>
- Khan, M.I, Haleem, A., 2016. "Understanding Halal And Halal Certification And Accreditation System - A Brief Review". Saudi J. Bus. Manag. Stud., Vol-1, Iss-1(Feb-Apr):32-42
- Lada, S., Tanakinjal, H.G., Amin, H., 2009. "Predicting Intention To Choose Halal Products Using Theory Of Reasoned Action", International Journal Of Islamic And Middle Eastern Finance And Management, Vol. 2 Iss: 1: 66 – 76.
- Lokman, A.R., 2001. Halal Products Consumerism, Technology And Procedures. Melaka, Malaysia : Percetakan Surya Sdn Bhd.
- Norazmi, M. N., Lim, L. S., 2015. "Halal Pharmaceutical Industry: Opportunities And Challenges". Trends In Pharmacological Sciences, Vol. 36, No. 8: 496–497.Doi:10.1016/J.Tips.2015.06.006.



Shabana, D. K. 2003. Factors Driving Halal Pharma Market. International Halal Pharmaceutical Summit Kuala Lumpur, Malaysia.

Straton, A. Halal Certification Could Face Digital Disruption!, [Http://Mypr.Co.Za/Halal-Certification-Could-Face-Digital-Disruption/](http://Mypr.Co.Za/Halal-Certification-Could-Face-Digital-Disruption/)

Tieman, M., Maznah, C. G. , 2013. "Principles In Halal Purchasing". Journal Of Islamic Marketing, Vol. 4, No. 3: 281-293

Zakaria, Z., 2008. "Tapping Into The World Halal Market: Some Discussions On Malaysian Laws And Standards". Shariah Journal, Vol.16(3): 603-616.

Zurina, M. B., 2004. "Standardization For Halal Food". Standards And Quality News, Vol. 11(4), 4-5.



## Author Profile

**Mas Rahmah (Corresponding Author)** works as a full-time Associate Professor in the Department of Private Law, Faculty of Law Universitas Airlangga, Surabaya, Indonesia. Mas Rahmah obtained her Doctor of Law from Universitas Airlangga, Master of Law (Intellectual Property) from Monash University, Melbourne, Australia, and a Bachelor of Law from Universitas Airlangga. She teaches in Intellectual Property and Business Law. She is currently the Director of the Intellectual Property Centre of Universitas Airlangga.

**Nurul Barizah** is an associate professor of the Faculty of Law, Universitas Airlangga, Indonesia. She lectures in Intellectual Property Law and International Law. She obtained a Bachelor of Law from Universitas Airlangga, a Doctor of Law and Master of Law from the University of Technology Sydney (UTS). She is now the Dean of Faculty of Law, Universitas Airlangga.