



Marzuki Ibrahim, M. Hisham Omar, Imran Abdullah, M. Sophist Ahmad, S.A. Tajuddin Sh. Yusoff

Abstract: The heyday of Islam began as early as the middle of the 7th century and once again proved that Islamic science was the forerunner of all kinds of creations and innovations in science and technology. However, today, we see Muslims struggling to make a name for themselves in pioneering science and technology. It should not be so since many of the creations enjoyed today are based on inventions from Islamic civilizations rather than Western ones. Therefore, to restore the past glory, a new plan must begin from now. Among others, through the development of worship products for the use of Muslims worldwide. Studies have shown that efforts to produce tangible products are still low due to the increased focus on non-tangible products such as banking systems, health, and beauty products. Therefore, to ensure the idea of developing this worship product is clearly understood, several examples of existing worship products are presented and discussed regarding their weaknesses from a design perspective. Four examples of the latest innovative products designed specifically for the needs of Muslims are described. The rationale for the need for innovations in worship products is also statistically discussed in light of the rapid growth of Muslims, with over 1.6 billion Muslims. Furthermore, as many as nine groups of worship products have the potential to develop, such as products for prayer, knowledge gathering, pilgrimage, and umrah. Finally, the design features that need to be considered for developing next-generation worship products to meet customer and market needs are also discussed. The results of this research are intended to raise awareness to the world about the golden age of Islamic science and that this innovation is still relevant today. Innovation is a catalyst for high-income economic development. In this regard, developing and producing innovative worship products can generate wealth to improve the quality of life of Muslims worldwide. Such is the initiative introduced by the professional design team in Faculty of Innovative Design and Technology (FRIT) at Universiti Sultan Zainal Abidin (UniSZA) Malaysia that has developed a range of Islamic conceptual products. Based on the results of the observation technique during the pilot test, conducted in many states across the country, there are several issues that need to be resolved namely that Muslims in Malaysia desperately need innovative products that can help them to worship consistently and confidently.

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\* Correspondence Author

Marzuki Ibrahim\*, Faculty of Innovative Design and Technology, UniSZA, Terengganu, Malaysia. Email: marzukiibrahim@unisza.edu.my

M. Hisham Omar, Faculty of Innovative Design and Technology, UniSZA, Terengganu, Malaysia. Email: hisham@unisza.edu.my

Imran Abdullah, Faculty of Innovative Design and Technology, UniSZA, Terengganu, Malaysia. Email: imranabd@unisza.edu.my

M. Sophist Ahmad, Faculty of Innovative Design and Technology, UniSZA, Terengganu, Malaysia. Email: musophist@unisza.edu.my

S.A.Tajuddin Sh.Yusoff, Faculty of Innovative Design and Technology, UniSZA, Terengganu, Malaysia. Email: <a href="mailto:satajuddin@unisza.edu.my">satajuddin@unisza.edu.my</a>

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This means that there are still no well-built innovative Islamic-based products available in the local market. As such, the Muslim demographic group in the country as well as around the world, comprising senior citizens, adults, teens and children will be able to enjoy the contributions produced by FRIT at UniSZA.

Keywords: The Golden age, Islamic scholars, Worship Products, Innovation

### I. INTRODUCTION

Islamic scholars have produced a wide variety of creations and innovations in various fields such as medicine, surgery, physics, chemistry, philosophy, astrology, and geometry. Without the greatness of Islamic science, the modern world enjoyed today would not have been as it is today. According to Al-Hassani (2012), the Islamic Golden Age has begun from the middle of the 7th century until the middle of the 13th century. During this time, Islamic scholars, including artists, engineers, scholars, poets, philosophers, geographers, and traders in the Islamic world, have made countless contributions in their fields. Among the major areas are agriculture, art, economics, industry, law, literature, navigation, philosophy, science, sociology, and technology. In this era of Islamic glory, the Islamic world has become a major intellectual center for science, philosophy, medicine, and education.

Islamic scholars are known throughout the world. For example, Ibn Sina, the world's leading medical figure to this day, is known. Likewise, Imam Ghazali, the leading philosopher of more than 69 books, Ar-Razi (medical figure), Albucasis (surgery), Abu Musa Jabir Ibn Hayyan (chemistry) Muhammad Ibn Jabir (astronomy) and many other Islamic scholars. They are actually the catalyst for many of the latest innovations and creations used by all humankind. This is a clear indication that Islamic civilization has indeed evolved for a long time and that Islam has always been essential in science and technology

### A. History of Islamic Civilization

The Age of Islam dates from the middle of the 7th century until the middle of the 13th century. The Islamic rulers during this period, have successfully established one of the largest empires in the history of the world.

For example, in the city of Baghdad, they have established the House of Wisdom, which houses scholars (Muslims and non-Muslims) who worked hard to collect and translate science from around the world into Arabic. Many ancient classical writings were translated into Arabic and later translated into Turkish, Sindhi, Persian, Hebrew, and Latin.



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Much of the knowledge is derived from ancient times of Mesopotamia, Ancient Rome, China, India, Persia, Ancient Egypt, North Africa, Ancient Greece, and Byzantine. Ancient classical writings such as Brahmagupta, Aristotle, Euclid, Ptolemy, and Hippocrates were translated into Arabic to enable debates and developments in mathematics, astronomy, chemistry, medicine, and engineering to be realized in line with Islamic times of the day (Islamichistory, 2019). The Islamic Empire is the first in the world to be recognized as a universal civilization as it is able to unite people from diverse backgrounds such as the Chinese, Indians, Middle East, and North Africa, South Africa, and Europe (Islamichistory, 2019).



Fig. 1. House of Wisdom

#### B. Islam and the Power of Creation

Many do not know or realize that the various creations enjoyed today are actually based on Islamic scientific inventions. History proves that during the heyday of Islam, Muslims have won on multiple fields of knowledge. Islamic scholars are the pioneers in areas such as chemistry, physics, medicine, biology, algebra, engineering, architecture, art, agriculture, and various production industries that have a positive impact on our daily lives today.

In the beginning, Islamic science was associated with the invention of a distillery capable of distilling anything from alcohol to perfume. Hygiene is such an important issue in Islam that soaps were created and produced centuries before the Western civilization did, and hundreds of baths were built throughout Muslim cities.

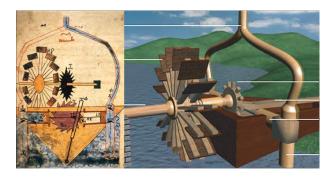


Fig. 2. Crank rod concept



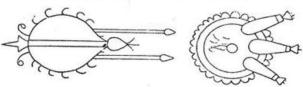


Fig. 3. Torpedo

Islamic scholars were well aware of the basics of light that eventually created the camera obscura. They were also pioneers of algebra and produced angles of the earth. They built the first windmill, pioneered the crank rod concept (Fig. 2), and created the world's first torpedo (Fig. 3). The creativity of Islamic scholars also led to the creation of a unique instrument known as astrolabe. It's used to find the direction of the city of Mecca, display time, and helped navigate through the desert or the sea using the stars (Al-Hassani, 2012).

In conclusion, Islamic science is actually the catalyst for many of the latest innovations and creations used by all humankind. This is clear evidence that Islamic civilization was actually developed much earlier than the West. He also explained that Islam has always been essential in science and technology.

# II. ISLAM AND THE REALITY TODAY

Today, we can clearly see that Muslims have to push themselves to the limit in order to prove to the world that they are can become pioneers in science and technology. However, this is not always the case. This is because, throughout history, Muslims have actually discovered and created all kinds of creations that have ultimately led humanity to prosper and succeed.

Since the event of 9/11 in America, Muslims and their culture have been directly linked to terrorism. Western media has openly portrayed Arabs and Muslims as terrorists. The contributions made by Muslims during the glory of Islam as early as the middle of the 7th century, especially in the production of various kinds of creations, discoveries, and writings, are no longer heard off and are almost left buried. Thus, it is unfortunate for Muslims around the world to often discuss the modernity of the world, without referring back to the greatness of past Islamic scholars who have presented science theories, produced technologies, and various inventions that can enhance Islam civilization. As educated Muslims, we should be proud, grateful, and acknowledge that Islamic civilization is a civilization that has contributed significantly to improving our lives and our well-being today.

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#### III. OBJECTIVES

The main objectives of this paper are to:

- 1. Describe Islamic civilization and the greatness of creation by Islamic scholars;
- 2. Discuss the various weaknesses of existing worship products in the market from the design perspective;
- 3. Explain the need for future innovation of worship products; and.
- 4. Propose critical features to consider in developing a future generation of worship products to meet customer and market demand.

# A. Methods and Approaches

The information presented in this paper is via the following sources:

- 1. Literature Reviews which the latest information is available through reference sources such as books, journals, articles and through search engines related to the topics being discussed (the golden age of Islam, Islamic scholars, worship products, industrial design innovative design, producing and manufacturing new products, Islamic lifestyles, Muslim culture and heritage, Islam requirements from *al-Quran* and *al-Hadith*, market trends and investment for new products); and also
- 2. Direct-Observation Technique made by our research teams on the existing of worship products available in Malaysia. The practice has been carried out by us separately in various states throughout Malaysia. We apply this technique to Muslims only through demographic approaches which divided into several categories: genders, ages, incomes, locations, occupation, marital status, senior citizens, adults, adolescents and children. The technique was carried out during the pilot test that lasted for two months. The data collection stage has been done for a period of three months prior to the analysis stage. At the analysis stage, we used the full qualitative method to analyze each information, diagrams and pictures. Based on strong literature reviews, we use comparative studies to obtain accurate final data. Below is a summary of each decision made for the methods and approaches stage:

### IV. WHAT IS WORSHIP PRODUCTS?

Products are defined as "something [real], [non-tangible] service and so forth produced by the factory, or offered by the institution and so on (PRPM, 2019). The focus of this paper is on the product of physical products. The term worship, according to JAKIM (2012), is derived from the Arabic word. Language corners mean obeying, bowing, worshiping, and slaving for something. In religious terms, worship means the act of obeying and fully adhering to everything that God has done and called upon by the Apostles, whether it be an order or prohibition. There are Quranic verses and hadiths that require worship. These include:

Allah Almighty says:



What it means:

"Worship the Lord who created you and those who are before you so that you may be obedient."

(al-Baqarah: 21)

The description shows that the meaning of the product of worship in the context of this paper is: "a product (product) produced by the manufacturer to help the Muslims perform all the things that Allah has done and called upon by the Apostles (worship).

### V. PRODUCTS OF WORSHIP IN MALAYSIA AND THEIR WEAKNESSES

Undeniably, there are various worship products widely used by Muslims all over the world, including Malaysia. However, according to researchers' observations, existing products widely used by Muslims in Malaysia have not yet reached the standard. There are various weaknesses that are detected primarily from a design perspective. Among the major weaknesses are:

### A. Outdated Designs

Observations by researchers have found that many of the existing products used by Muslims in Malaysia are still lagging behind in design. Most consumers, however, do not stress enough about the design aspect if the product purchased can function and be offered at a competitive price.

# **B.** Modify Existing Products

There are two situations where first the product is taken directly from the existing product, and only its function is changed. Examples of existing folding chairs are used as stand-up prayer chairs for those who cannot stand for long or have health problems (Fig. 4); the small gas barrel is used as a mosque donation box (Fig. 5). Second, existing products are modified. For example, the seat was removed from the original chair and later used as a mosque lecture chair (floor chair); a small table for children to write/draw is transformed into a wooden table/ rehal.



Fig. 4. Existing folding chairs are used as stand-up prayer chairs



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Fig. 5. Small gas barrel is used as a mosque donation box

### C. No Islamic Design Identity

Most existing products do not emphasize Islamic images or identities as there are no commercial requirements. The important thing for manufacturers is to produce affordable products that can be sold in bulks to customers.

#### D. Inappropriate Material

Most products offered in the market use low-quality, high-quality ingredients, and low-cost ingredients to save costs and reduce prices. As a result, the products sold do not work as they are expected, not durable, and are often damaged.

### E. Not Ergonomic

The products also offered often overlook the related ergonomic factors of the suitability of a product used with human capabilities. This may be because most of the products offered may be copied from other products in the market that is then customized to local use. This situation can expose users to the risk of joint, bone, muscle, and discomfort.

# F. Not According to Islamic Law

In particular, Dakwatuna (2018), Islamic law is the laws (regulations) that Allah Almighty has revealed to humankind through the Prophet Muhammad saw in the form of the Quran or the Sunnah of the prophets through word, deed, decree, or confirmation.

As a result of the observations made on existing products, there are many products that do not follow Islamic law because the original designs are often taken from Western countries. For example, the design of toilets and urinals are inappropriate for Muslims. However, with no choice in terms of what is being sold, Muslims would have to use it without much concern.

# VI. LATEST INNOVATION PRODUCTS FOR MUSLIMS

As a result of searching the web, we find some special products designed for the needs of Muslims in daily life. Among them are personal hygiene products (Aquabean), meditation products (Subhan), body cleansing (WuduMate), and mosque lecture chairs (NR Bashirah).



Fig. 6. Aquabean



Fig. 7. Subhan



Fig. 8. WuduMate



Fig. 9. NR Bashirah

Aquabean (Figure 6) is a product designed to replace toilet paper. Water-based cleaning saves millions of trees from being cut down to remove toilet paper (see Aquabean, 2017). It is a unique, lightweight, contemporary, and user-friendly design that solves the problem of frequent water spills when using toilet pads.



Subhan (Figure 7) is a unique electronic beacon that combines the beauty of Islamic design with sophisticated electronics (see Subhan, 2019). The inspiration for Subhan's production began in early 2015. For over 1400 years, Muslims have used their fingers using traditional beads made from beads or also known as rosary beads, when performing acts of remembering God. Subhan's creation thus proves the latest technology when combined with the design inspired by the Islamic Golden Age can still serve as a remembrance (remembering Allah).

WuduMate (Figure 9) is a product designed specifically for Muslims to enjoy ablution. This design has taken into account aspects related to the cleansing of the limbs, such as arms, face, and preference given to foot washing. WuduMate was designed and marketed by the WuduMate Company, a company dedicated to personal hygiene and healthcare established in Surrey, England in 2007 (WuduMate, 2019). Leading the industry, WuduMate Company leverages its product expertise to market throughout Europe, the Middle East, Africa, Australia, North America, and Southeast Asia. WuduMate Company has released three types of wudu products. namely 1)WuduMate Compact designed specifically for home use, 2) The WuduMate Classic is housed in a commercial building space that has Muslim workers or is frequently visited by Muslims such as offices, schools, hospitals, prisons, public buildings, and recreational areas, and 3) WuduMate Modular, an innovative modular design, specially designed for use in mosques. It can be used in many situations such as standing, sitting, and wheelchair friendly.

Finally, the NR Bashirah mosque lecture chair (Figure 9) is the first multi-purpose floor chair in Malaysia. It is a floor-based innovation that is truly practical for all ages. This chair prioritizes the user's ergonomics in ensuring that every activity performed is comfortable, safe, and effective. This chair has been instrumental in the management of mosques and surau in the effort to co-ordinate various activities of knowledge among the qariah members (Nrbashirah, 2019).

# VII. REQUIREMENTS FOR INNOVATION OF WORSHIP PRODUCTS

Islam appeared in the Arabian Peninsula in the 7th century AD when the Prophet Muhammad received a revelation from Allah. Following the death of Prophet Muhammad, Islam flourished in almost every corner of the globe. According to Tumoutounews.com (2018), the world's population as of 2018 is estimated to be 7.5 billion people, and out of this, 1.6 million people are Muslims. Islam is the second religion after Christianity of 2.2 billion people. There are also dozens of other religions with a relatively large number of adherents such as Atheists (7.4 million), Hindus (1 billion), Buddhists (500 million), Chinese Traditional (394 million), Sikhs (23 million) Jews / Jews (14 million) and Shinto / Japan (3-4 million).

Statistics on population size change (2010-2050) conducted by PEW Research Center (2015) by 2050, Christianity will remain the world's largest religion, with 2.9 billion people. However, given the rapid growth of Islam (73%) compared to Christianity (35%) and any other major religion in the world, the number of Muslims in the next four decades (2050) will be closer to the total number of Muslims Christians are 2.7 billion people.

Table- 1: Estimates of population size for the 2010-2050 religious population.
(Source: PEW Research Center, 2015)

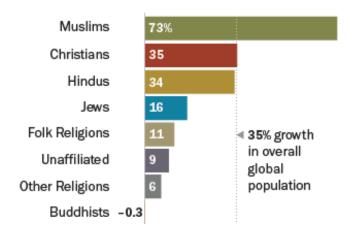


Table- 2: Size and growth prospects of major religions in the world 2010-2050.

(Source: PEW Research Center, 2015)

	2010 POPULATION	% OF WORLD POPULATION IN 2010	PROJECTED 2050 POPULATION	% OF WORLD POPULATION IN 2050	GROWTH 2010- 2050
Christians	2,168,330,000	31.4%	2,918,070,000	31.4%	749,740,000
Muslims	1,599,700,000	23.2	2,761,480,000	29.7	1,161,780,000
Unaffiliated	1,131,150,000	16.4	1,230,340,000	13.2	99,190,000
Hindus	1,032,210,000	15.0	1,384,360,000	14.9	352,140,000
Buddhists	487,760,000	7.1	486,270,000	5.2	-1,490,000
Folk Religions	404,690,000	5.9	449,140,000	4.8	44,450,000
Other Religions	58,150,000	0.8	61,450,000	0.7	3,300,000
Jews	13,860,000	0.2	16,090,000	0.2	2,230,000
World total	6,895,850,000	100.0	9,307,190,000	100.0	2,411,340,000

Wikipedia (2019) shows that the continent of Asia has the largest number of Muslims in the world at 1.2 billion followers as of 2015. Two hundred forty million or about 40% of the world's Muslim population comes from Southeast Asia with the majority in Brunei, Indonesia, Malaysia, and Pattani in Thailand and parts of Mindanao in the Philippines.

Of the total number of Muslims in Malaysia, 20.4 million people represent 64% of the total of 32.4 million Malaysians (DOSM, 2019). The state of Terengganu has the highest percentage of Muslims (99.2%), followed by Kelantan (96%) and Perlis (89.6%) (MS.Wikipedia, 2019).

The statistics show that from the population of Muslims worldwide, according to continents and Muslims in Malaysia, it is found that the rate of growth of Muslims is faster than that of other religions in the world. Increasing adherence to Islam means that the demand for worship products is also increasing.

A study conducted by researchers found that efforts to produce Islamic (real) products based on Islamic law both by individuals and companies are still low. Nowadays if any product based on Islamic law is only focused on the financial system, banking, pawn tax (non-tangible product) as well as health and beauty products. It is difficult to get Islamic Shariah-compliant products in the market today despite the high demand for such products.



# VIII. POTENTIAL WORSHIP PRODUCTS TO BE DEVELOPED

Various products suitable for use by Muslims around the world can be developed.

The statistics described earlier show that there is a very high demand for this product, given the rapid growth of Muslims, with over 1.6 billion followers to date. With the increasing number of Muslims, of course, the demand for religious products has also increased. Among the products of worship that could be developed are as follows:

- 1. Product before performing prayers as a place for taking ablution. In addition, personal hygiene products such as urine and urine should also be given special attention as they are also directly related to purification.
- 2. Products while performing prayers such as songkok / kopiah, which is worn by the men, prayer cloth, telekung or female praying attire, prayer, and seats for praying.
- 3. Product after performing prayers such as rosary beads, storage for Quran, the Yassin, prayer mats as well as prayer attires.
- 4. Products for mosque events such as speaker and desk chair, mosque lecture chair (floor chair), and desk chair.
- 5. Product products such as robes (men and women), scarves and sheaths.
- Product products such as capal or open-toed shoes for men, toilet slippers, utensils, watches, compasses and rings.
- 7. Special use products in mosques such as wall clocks, permanent donation boxes, and wheelchairs on Fridays.
- 8. Products related to Hajj and Umrah worship, including luggage and slippers.
- 9. The body management products such as products for bathing bodies, coffins, curtains and tombstones.

# IX. DESIGN FEATURES OF THE NEXT GENERATION WORSHIP PRODUCTS

One of the key factors to consider in developing future worship products is design. Feldstein (2017), the next generation means "better than what we have now". From the point of view of product design, it can be concluded as an innovative design using the latest materials, technologies, and production processes. In addition to the above, the features of this design will also answer any questions related to the weaknesses raised by previous researchers (See: Worship Products in Malaysia and Weaknesses). In light of this understanding, some of the key factors that need to be considered in developing the future generation of worship products to meet the needs of consumers and marketability to Muslims worldwide are as follows:

### A. Visual Appearance

The shape and appearance of a product are seen from the outside (Marzuki, 2013). Therefore, the product of the next generation of worship that is to be offered to Muslims must be attractive and attractive. Anup Jain, General Manager, Whirlpool India brand marketing, says that attractive (beautiful) visuals can attract customers. He added that the first thing consumers consider when buying a product (example: washing machine, refrigerator, computer, laptop, or television) is not technology, but the design and color of the product (Priyanki Joshi, 2006). Consumer surveys show that most consumers do cosmetic assessments first on products and then on product technology. As such, world-class product

manufacturers such as Samsung, LG, Sony, and Whirlpool are focusing their innovations on product design to attract consumers (Priyanki Joshi, 2006). This is supported by Neil Patel (2011), who points out that there are four main features of a product that are marketable and two of which are related to the simple design that is innovative and different from the existing product in the market.

### **B.** Selling Price

Pricing a new product is one of the most important components of a marketing strategy. Price is one of the deciding factors when deciding whether to buy or not. Therefore, the next generation of worship products that Muslims want to highlight must be offered at an affordable and competitive (competitive) price. Such pricing offers will enable more Muslims to have the products they need. Intelligence node (2016), competitive pricing is one game that needs to be played. Competitive pricing requires in-depth knowledge of the market and target customers. This is supported by Infiniti Research (2019), which states that by using competitive pricing strategies, traders can continue to monitor the price changes played by their competitors. Such measures allow traders to deal with price changes by competitors while at the same time controlling price war. Traders need to have business intelligence and use the right technology to tackle this competitive pricing strategy.

# C. Local Identity

The design of the next generation of worship products identified by the Malaysian nation is very important as it has many advantages, especially with today's technological and market changes. The application of local features in product design as a product marketing strategy in the international market will add value to the product. This is not something that is very difficult or requires a high budget allocation. Malaysian identity can be highlighted and styled through the use of symbols, motifs, symbols or shapes, and colors of the Malay cultural heritage displayed in a product or medium. Marzuki (2008,2013) designed, manufactured, and finally marketed Malaysia-based products as a preservation of the nation's heritage and introduced Malaysia to the eyes of the world.

Thus, the Malay cultural heritage will be preserved, and at the same time, clear identity will be displayed through the design of the products produced and marketed.

# D. High Technology

High-tech products are directly related to innovation. Hauser et. al (2006), the main aim of innovation is to maximize the profitability of the company by creating new products and modifying existing products while high technology products are product innovations that can be classified into new technology products and future technology products (Hatzichronoglou, 1997). High-tech products are able to find new solutions, generate significant changes in existing markets, or open new markets. Future-generation worship products that apply the latest technology or wearable technology when a product is designed should be implemented.





This is to ensure that the products that are to be released conform to current or future techniques, technologies, and standards. One of the best examples of the next generation of worship products is the Subhan product, which proves that the latest technology (electronic), when combined with Islamic design, is capable of producing sophisticated and highly marketed worship products.

### E. Ergonomic

Physical comfort and ease of use with minimal fatigue effects when used by the user is an ergonomic feature. Also, aspects related to a user's body size, posture, or movement must also be taken into account. The ergonomic next-generation worship products involve "design for effective use," taking into account the physical capabilities and limitations of the user (Boff, 2006; Salvendy, 2012). The suitability of the user and the product or referred to as "human compatibility" (Karwowski, 2005), the analysis of the physical nature of the user, the activity being performed, and the suitability of the product during the activity should be carried out. Special emphasis should be on the size, shape, weight, product configuration, and suitability of the product during the operation (operation).

### F. Comply with Islamic Shari'ah

The next generation of worship products should obey the laws (regulations) that Allah Almighty has revealed to humankind through the Prophet Muhammad saw. According to Ruajurai (2015), all the codes taught by the Messenger of Allah are for the benefit of humanity. There are many benefits hidden in it, and through modern research and knowledge one by one, the wisdom of these teachings is understood.

Today, there are several exciting product options released, but they do not meet the actual Islamic law because they are designed and manufactured by non-Muslims. Some of the obvious examples that can be discussed are the design of the toilet (urine) and urinal (urine). Although the two designs we use today are very attractive with a wide range of design choices, they are in fact, still inconsistent with the Shari'a organized by Islam. The only way to get rid of water according to the prophetic prayer is to squat and lean left and hands press the left abdomen. The only way to get rid of the urine is to tilt it to the right and the back to the right leg. The hands massage the bottom of the lower center for women, and men are encouraged to chew three times so that all urine flows smoothly and perfectly (Syafiq Hazani, 2017). Thus, based on this prophetic Sunnah we can conclude that Muslims are in dire need of a toilet and urinal design in keeping with the characteristics that Islam implies. Concerning toilet design, although there is awareness of the benefits of using a toilet (squatting) versus sitting toilet (Fig. 10), and there are related products for sale worldwide (see Squattypotty, 2019) but it is essentially an appreciation of Islamic law for design the shape of the toilet is still blurred. Similarly, the average urinal design is still not in compliance with Islamic law. Most of the urinal (male) designs available in the market today are still designed (Fig. 11).



Fig. 10: Squatting vs sitting

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Fig. 12: Male urinal

In addition to the six main features of the design discussed earlier, other noteworthy matters include compliance with standards and standards, performance, durability, safety, ease of installation, and durability of a product (See Marzuki, 2013).

#### X. CONCLUSION

Islamic scholars were once known for their many inventions and innovations in science and technology. Therefore, to bring back the glory of Islamic scholarly creations, a new step in the creation of future generations of worship product innovations for the benefit of Muslims worldwide should be taken seriously by stakeholders. This is because such products are highly potential to be marketed around the world, as there are more than 1.6 million Muslims in the world today. There are a variety of worship products that have the potential to develop from product to prayer to Haj and Umrah related products. Therefore, by developing and producing this product of worship, it is possible to generate wealth and improve the quality of life of the Muslim world in accordance with the requirements of Islam.

The Islamic-based conceptual products developed and produced from the local customer demands have been fitted with related design criteria such as Islamic identity, cultural acceptability, ergonomics, aesthetics, practicality, portability, easy-to-find materials and manufacturing acceptability. It directly preserves the cultural heritage and way of life of Islam to the end. The solution will be able to contribute to many generations of Muslims in Malaysia and also around the world by applying these tangible Islamic-based products for their routine use. It is also known as *fard-al-kifayah* means a contribution given to the worldwide Muslim community, which includes applications for oneself, family members, friends, colleagues and travelers: at homes, offices, schools, malls, transportation terminals and at wherever.

In addition, collaborations with industry players and institutions of higher learning in the field of group expertise were also emphasized to realize the capabilities and demands of Muslim customers within and outside Malaysia.

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# **AUTHORS PROFILE**



Marzuki Ibrahim is a lecturer of Industrial Design at the Faculty of Design Innovation and Technology (FRIT), Universiti Sultan Zainal Abidin (UniSZA) Malaysia. He is a Fellow of RSA United Kingdom and MQA assessor since 2000 and a Professional Technologist (Ts.) of Malaysia Board of Technologists (MBOT). He has started his Diploma in Industrial Design at UiTM before

pursuing BA/MA in Industrial Design Eng. in Leicester, UK. Upon returning to his homeland, he began to work as a lecturer in UiTM and a few years later, he flew back to the UK to pursue MPhil/h.D. in Design Mgmt. in Newcastle, UK. During his tenure with UiTM, he has contributed a lot of energy through the consultation of project design with Pusat Daya Cipta UiTM. In the academic field, his writings have appeared in many exhibition catalogs, journals, magazines and newspapers. He had delivered numerous research papers nationally and internationally and has invited as an academic reviewer, speaker,

moderator, external examiner and guest lecturer. He is also a supervisor/advisor for Master and Ph.D. students in Art & Design field.



M. Hisham Omar is a senior lecturer at FRIT, UniSZA Malaysia. He is a professional member of Malaysia Design Council since 2017. He has BA in Industrial Design from UiTM, MSc. in Educational Administration from UPM and Ph.D. in Design Management from UNIMAS. In the academic field, he was writing a few scholarly books and journals. He had

delivered numerous research papers. In achievement and awards, he was winning the gold medal in MPI and ITEX competitions. He is also active as supervisor MA and Ph.D. students in design management, product design, transport design and furniture design. He is also active in community services as a Lieutenant Colonel in Angkatan Pertahanan Awam Malaysia. He was a professional consultant for the state of Terengganu in conjunction with prototyping development of a wheelchair for disabled people suffering from Tetraphomelia with a proximal femoral focal deficiency (PFFD). He was a panel committee for education advisor and an academic expert in industrial design program.



Imran Abdullah is a senior lecturer at FRIT, UniSZA Malaysia. He holds a BA Hons. In Industrial Design from UiTM, Master of Industrial Design from UiTM and Ph.D. degree from UNIMAS. He was a professional designer in various local and national industries for over eight years and has been in academic management at the university for more than ten years and has been a senior lecturer to date.

Research papers, intellectual property products have been presented at the national and international levels. In the academic field, he has written a few scholarly books and journals. He also had delivered numerous research papers. In achievement and awards, he has won the gold medal in MPI and ITEX competitions. He is also active as a supervisor for MA and Ph.D. students in design management, product design, transport design and furniture design. He was a panel committee for education advisor and an academic expert in industrial design program.



M. Sophist Ahmad is a senior lecturer at FRIT, UniSZA Malaysia. He is a professional member of Malaysia Design Council. He has BDes, MA&D and Ph.D. in Art & Design from UiTM. He writes academic books and journals as well as conducting many high-impact researches. He received many awards and appreciation through research achievements domestically and internationally, such as IID-UiTM,

Geneva Palexpo and Pittsburgh INPEX. He supervises many MA and PhD students in the field of Applied Arts & Design Technology. He engages in intellectual property initiatives of patent, copy write, trademark and industrial design.



S.A.Tajuddin Sh.Yusoff is a senior lecturer at FRIT, UniSZA Malaysia. He holds twin-diplomas in Printing Management (GM-MSP) and Entrepreneurship (AOTS) from Osaka, Japan as well as a BA degree in Visual Communication with MBA from UiTM. He started his career as a Visualizer in PTM Thompson, KL for one year period before he joined NSTs Press as an Assistant Manager. After five years, he got an offer to lead the

government printing house as a General Manager that appointed by Ministry of Human Resource Malaysia, as a member of MLVK for the printing. After 13 years with the printing house, he served as an academician at UniSZA with registered as a professional member of Malaysian Design Council. He wrote a few books and producing research-based products. He won the gold medals in MPI and ITEX competitions as well as the silver medals in PECIPTA. He was a Faculty's management board which acted as a coordinator of industrial training and data for four years duration and also a committee member of the university publication.



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