The Impact of Information Technology on Islamic Behaviour

Seyed Ebrahim Hosseini
Faculty of ICT, International Islamic University – Malaysia
Selangor, Malaysia
(seyedebrahim.hosseini86@gmail.com)

Abdollatif Ahmadi Ramchahi*
Post-Doctoral Researcher, Center of Quranic Research, University of Malaya
Kuala Lumpur, Malaysia
(magapu2005@yahoo.com)

Raja Jamilah Raja Yusuf
Center of Quranic Research, University of Malaya
Kuala Lumpur, Malaysia
(rjry@um.edu.my)

Abstract—Globally, information and communication technology (ICT) has undoubtedly become the central drive for the evolution of a modern society. The Muslim world, like the rest of the world participates in the evolution. Such changes in lifestyles bring raise a number of ethical issues. Contemporary Muslims have learnt how to use IT to obtain Islamic materials. Such materials include among others the translation of the Qur'an, Tajweed, Hadith, and Tafseer. In most cases, language is not a limitation as often one can find material in his/her preferred language. Such materials are available in word, audio and video forms through digital content or via interactive chat rooms and forums. ICT has connected the world including students with scholars and seldom is one left without a means to answer his/her queries. This article argues that IT not only makes Islamic literature globally accessible, but also assumes an essential role in spreading Islam all over the world and clearing up the misapprehensions of non-Muslims about Islam.

> *Keywords—Information technology; impact, Islamic behaviour; internet; software; literature review*

I. INTRODUCTION

In the past, the spread of religious knowledge throughout the Muslims world was limited by a lack of communication tools. Islamic literature was communicated through the medium of books. The translation of the Qur'an, Tajweed, Hadith, Tafseer, and Fiqh among others were available only in written texts. However, ICT has created an environment whereby Islamic resources can be converted into digital forms are easily distributed globally.

In numerous developed countries, Islamic resources remain highly limited. Many in the developed world are illiterate or do not have the opportunity to read books. Despite the end goal being to educate such persons, it is surprising that Islamic literature in audio form remains limited.

Likewise, TV assumed an important role in the spread of Islamic knowledge. Islamic programmes like Qur'an recitation, its translation, and learning Arabic are becoming increasingly broadcasted on TV.

In the early 1990s, the web was commercialised and was chiefly utilised for email and file sharing purposes. As time went by, the majority of developed countries like the USA, UK, Canada and others began to provide online data for research, education and science purposes. They organised online libraries containing electronic books for practically every field of interest, which is accessible from any part of the Muslim World. In the early 21st century, the Internet has grown into the most popular medium of communication for any purpose throughout the Muslim World.

Although initially the Internet became popular for messaging and chatting, it steadily became a more popular medium for training and education. People now have easy access to virtually any information they desired in the shortest of times. A couple of years prior, the Muslim world decided to utilise the World Wide Web (WWW) and Internet as the main medium through which to communicate Islamic literature globally.

Islamic books, literature, Islamic lectures, Islamic speeches by famous researchers, translation and interpretation of the Qur'an were converted into digital forms. Presently, several sites now offer Islamic material free of charge.

1.1 Qur'an and Internet

Al-Qur'an is the book of guidance. Allah s.w.t says in Surah Al-Baqarah verses 1-2: "Alif Lam Mim. This is the Book, it is definitely for guidance, without uncertainty, to those Who fear Allah. [1]."The book of Allah "Qur'an" is now available in many formats through the Internet. Notably, the number of Internet users in the world is increasing. Untill March 2011, more than two billion people used the Internet [2]. Approximately 44% of worldwide Internet users were Asian countries with 60% of the Muslim population. India and Indonesia, which have around 204 million and 177 million Muslims respectively, contributed to 140 million Internet users. In addition, China and Malaysia contain a significant Muslim population and were among the top ten Internet users in Asia. Different Islamic websites including religious

knowledge, online *Qur'an*, online *Hadith*, discussion forums are produced by many Muslim Internet users.

It is possible to read Qur'an online without buying a copy of the Qur'an. Various translations and interpretations (Tafseer) of Qur'an are available in different languages. Many Muslim groups have worked on it and made the text searchable. Hence finding a specific chapter, topic or translation would be very easy by using searchable engines. Moreover, online Qur'an recitation is also available on the web. For people who face challenges in understanding Arabic, the translation and interpretation of the Qur'an is also available in audio format in different languages.

1.2 Concept of Computers in the Qur'an

Computers [1] are the pivot for Information and communication technologies and the key player in today's globally interconnected human society. It is considered a tool for writing, storing, disseminating and sharing knowledge much similar to the concept of AL-QALAM in Qur'an as Allah[swt] mentioned:

"Proclaim (or read) in the name of thy lord and Cherisher, who created, created man out of mere clot of congealed blood. Proclaim! And thy lord is most bountiful-He who taught (the use of) the pen. Taught man that which he knew not."**[QUR'AN 96:1-5]**

The first verse revealed to our beloved Prophet [saw] asks him to read. It puts the focus on the importance of reading or acquiring knowledge in Islam. The phrase 'the pen' is not restricted to its literal meaning but entails a wide scope. For instance 'the pen' is a means to write, store, distribute, share knowledge or even mere passing of information. Consequently, the computer could be regarded as technology with many similarities to the notion of 'the pen' as stated by the Allah [swt] in the first revealed chapter.

Another important factor that should be stated is the significance of knowledge (an important aspect in the journey of human beings).

"Allah will exalt those of you who believe, and those who are given knowledge, in high degrees; and Allah is Aware of what you do". **[QUR'AN 58:11]**

In the Qur'an, Allah[swt] acquaints man with the concept of "information". The Almighty says:

And He taught Adam the names of all things; and placed them before the angels, and said: "Tell me the nature of these if you are right."**[QUR'AN 2:31]**

The above verse of the Qur'an shows that the concept of information system has been demonstrated since the creation of man. Allah renders the quest for information part of human nature which distinguished man from angel. Therefore, man is able to love and understand love, and thus plan and initiate, as becomes the office of vicegerent.

No wonder today it is the computer and its related technologies that have become an important and a popular means for sharing information and knowledge especially in an environment where user have access to thousands and thousands of gigabytes of databases.

1.3 New Tajweed rules for E-learning of Qur'an recitation

Tajweed consists of effective rules to help Muslims correct their pronunciation of the Holy Qur'an. Due to the pronunciation rules that have to be followed during the recitation, reading of the Holy Qur'an is somehow different compared to the reading of a normal Arabic text. Reciting the Holy Qur'an in the proper way is valued for all Muslims and is necessary in Islamic worship such as prayers. As such, the proper method for reciting the Qur'an was conveyed, since its revelation to the prophet (PBUH), orally from teachers to learners through all ages.

Until the twentieth century, this method has been considered the only way of learning the Qur'an. However, technology has developed recording systems and electronic devices that could keep both text and sound of the Qur'an with tajweed rules. Afterwards, listening to Qur'anic recitations recorded from genuine reciters became possible.

Since then, many computer-programs came to help beginner learners by listening while understanding corresponding text on the screen. Even so, such attempts remain restricted and have been focused on the direct application of the IT methods, such as storing, listening, exploring etc. without employing more detailed methods in the field. [3]

1.4 Hadith and Internet

Hadith collections i.e. Sahih-Bukhari, Sahih-Muslim, Sunan Abu-Dawud, Malik's al-Muwatta and their translations are accessible in several languages in the web. These Hadith collections are ordered according to topic such as ablution, revelation, witnesses etc. and are accessible in various searchable formats.

1.5 Islamic Software

Information Technology makes carrying Qur'an and Hadith with us possible. Islamic software is available in audio and text formats for mobile phones, iPods and laptops. Islamic software is also accessible via the web for free and the installation on phones takes only seconds. Muslims living in non-Muslim countries who find it difficult to have access to hard copies of the Qur'an or other Islamic literature, can use information technology.

Adhan (Calling for Prayer) software (Fig. 1) is very beneficial and can also be downloaded on mobiles and laptops especially in non-Muslim countries where publically calling *Adhan* on speakers is not allowed. For those whose mother tongue is not Arabic, Arabic learning software is also available and accessible on the web.

Apart from games, flash videos are also provided for children to learn how to make *Wudu* (ablution). In addition, Islamic software such as Islamic Finder is provided for learning how to account *Zakat* (Fig. 2) and how to perform *Salah* (prayer), *Hajj* and finding the direction of the *Qibla* (Fig. 1).

A rapid development has been seen in ICT that significantly affected human relationships, especially in progressing new means of communication that provide a system for its users to communicate with each other regardless of time, place and distance. In addition, this development focuses on the way Muslims practice Islam, such as the *Aqd* (contract) of marriage, which is now being carried out via the web through video conferencing.

1.6 ICT, Online Islamic Classes and Lectures

The development of ICT has dramatically reformed teaching and learning procedures in higher education [4]. The use of ICT provides strong learning settings and can alter the learning and teaching process so that students are able to consider knowledge in an operative, self-directed and useful way [5].

Attending Islamic classes becomes easy through IT even while one is at home. Virtual classes make it possible to take part in classes globally. Currently, Muslims who cannot afford to travel, especially women who have restricted movements, can learn and train at home. They can take part in online classes and lectures carried out by top scholars all over the world.

1.7 Internet Communication

Internet was initiated as a medium of communication between government scientists and experts in the defence force with no intentions to use it as a public medium for mass communication [6]. The way people communicate with each other has changed with ICT. ICT, which began with a telephone voice contact has now created a direct two-way relationship, a combination of sound and pictures known as "video conferencing" [7]. Instead of having various devices for various uses in terms of communication, internet can be accessed for communication purpose through various devices such as a laptops, smartphones and/or tablets. Online services such as Skype, instant messaging services, e-mails and others can be used for communication. Synchronous communication (quick) and asynchronous (not in real time) communication happens over internet. Twitter is an example for the former and YouTube is an example for the latter. When two or more individuals communicate in real time via texting or chatting, it's a synchronous form of communication [8].

Over time, internet has become [6] a platform for the public to communicate online with sophisticated devices. With the evolution of Social Networking Sites (SNSs) [9], internet has attracted many more users. Social media provides a platform for users to share and communicate their views regarding religion and beliefs as well as many other matters[10]. Thus Muslim communities can use the internet as a medium for shaping their relationship between their social, political affiliations and religious identity [10].

People from all over the world are able to discuss issues related to Islam through available online discussion forums. Muslims and non-Muslims can take part in the online discussions. Everybody in the forum can raise questions. Paltalk and Yahoo Messenger are examples of free accessible software for online discussions that can be downloaded and used to participate while writing or speaking. Many Islamic talks and discussion rooms are run by different scholars are accessible in Paltalk 24 hours a day.

Moreover, ICT has witnessed a rapid growth and made has influenced human relationships, especially in progressing new means of communication. This new technology offers a system for its users to communicate with each other disregarding time, place and distance.

1.8 Internet Relationship

In today's business world, internet plays a vital role in fast and accurate communication. Businesses use internet communication for efficiency and to save time. In the US [11] internet based business communication is usually referred to as the 'E-Highway' for business transactions. People establish business relationships which are temporary or permanent through the internet. Organisational involvement has also enhanced via internet usage in business communications. Online communication not only enhances the relationship over the internet, it also affirms positive feelings in individuals and in their offline associations. Most successful businesses have incorporated internet communication in their business routines (12).

Internet relationships can be developed among people who came to know each online. Online relationships and pen pal relationships have many similarities. Online relationships or internet relationships are usually sustained for a particular time period before transforming into a proper relationship, similar to in-person relationships. Virtual relationships can take many forms such as those based on texts, audio, video, or a combination of these forms. This can be between people who are far away, in different countries or even between people who stay close but have no or minimal relations or communication in person.

As for the disadvantages of online relationships, in the initial stages of an online relationship, there are high chances of being misrepresented. Also initially as the commitment is low, agenda for self-presentation and enhancements are paramount [13]. Ashleymadison is a website for couples for dating. Upon receiving many complaints regarding the site pointing out that the site is responsible for increasing divorce rates and fast growing casual dating, Noel

Biderman, the founder of the site responded that the site was founded when it was realised that most of the people using other casual dating sites are in reality already married and have families, whereby they pretend to be single for initiating an affair [14].

Cornwell and Lundgren in 2001 [15] conducted an empirical study for understanding the misrepresentation and commitment involved in online relationships. They surveyed 80 chat room users. Their study focused half on real time and half on cyber relationships. The findings showed that real time relationships were more serious and had serious commitments. Satisfaction and potential for a romantic relationship to be initiated online, particularly for the emotional part was almost the same in both real time and cyber settings. They also asked the chat users on their misrepresentation in both scenarios including aspects such as their age, interests, background etc.

In most cases, when the internet was introduced as a social instigator, it lead to repercussion resulting in weakening of social websites. Use of internet extensively reduced social involvement of individuals and this is linked to loneliness and depression of individuals [16]. Kraut extended his study by expanding his sample thereby producing a different result.

Danger is always present in online interactions. Hiding one's real identity might not be harmful in many cases, but does assert a negative impact in certain cases. Cyber stalking and cyber bullying normally involves such acts of hidden identities. Predators thus get their prey by manipulating real information and faking identities. Without knowing such dangers and even when knowing, children normally fall victim to such pranks as per a study conducted by Mishna [17]. Often the perpetrators are little concerned with the negative impacts of such relationships. A finding by Lenton and Brym showed that when real identities are concealed, individuals prefer to meet in person [18]. Keeping in mind such dangers, internet users these days force others and themselves to be genuine in providing needed information for building an online relationship to minimise harm in the course of their relationship. Others can check and ensure the genuineness of the information and identity if real names and identity are exposed in the beginning.

Danger always exists in the internet world. A person can disguise himself/herself in many different was and can showcase a totally opposite or incorrect personality online convincing the other party. This can hurt the recipient party, especially those who might be serious and value the relationship. Such online relationships should be approached with caution.

1.9 Internet and Morality:

Internet provides human beings access to a large amount of data. Since the internet is not controlled by anyone, the type of data cannot be controlled. Therefore, all types of positive and negative information and objects are available on the web.

Academic sources can be considered as positive aspect of the internet, whereas pornography, gambling and misappropriation are its negative aspects. Users need to make a choice to utilise the internet responsibly, wisely and intelligently.

The best filtering tool is having faith (*Iman)* and virtue (*Taqwa).* Internet gives people the permission to act freely in almost everything. However, they are responsible for how they manage their freedom. Freedom and choice are related to responsibility, and everyone is responsible for his freedom and choice.

Freedom and the right to choose between good and evil is an ongoing test. *Allah Almighty says:"The human soul-the way He moulded it and inspired it with knowledge of its evil and its good - bears witness to the fact that indeed he, who cleanses it [of all impiety] shall be successful while he, who corrupts it shall face doom." [al-Shams: 7-10]*

1.10 Privacy, Internet and Computer Users from an Islamic Perspective

Islam pays a lot of respect for the privacy of all individuals including children.

Allah *s.w.t* says [24:27] *"O ye who believe! Enter not houses other than your own, until you have asked permission and saluted those in them"*

He says in another verse: *"O ye who believe! Avoid suspicion as much (as possible): for suspicion in some cases is a sin: And spy not on each other behind their backs. Would any of you like to eat the flesh of his dead brother? Nay, ye would abhor it.But fear Allah. For Allah is Oft-Returning, Most Merciful. ".* [49:12].

These two verses in the Qur'an explain that Islam emphasises on the significance of privacy. Since invasion of privacy exerts a major negative impact on the society, Islam teaches us to respect the rights of others [19].

By developing computing technology, particularly the internet generation, the collection of large amounts of data on each individual becomes possible. This situation has influenced both the general public's view of privacy and the issues of shielding personal information. Privacy has become a major issue between people and the government because the government has full details of a citizen's birth, marriage, health, ownership of houses or properties and criminal record, if any. Hospitals keep their patients' important data and record, some pharmaceutical companies may misuse these records for their business purposes [20]. This invasion of privacy through technology involves all the means to hear the communication of others and read the message of others and worst of all they can alter the messages. Listening to human conversations without permission by the use of any electronic device is unlawful. Any communication between two individuals via the internet, wireless or any form of communication can be tapped and changed by a third

party. This issue is addressed by Allah *s.w.t* in *Surah An-Nur* verse 27

1.11 ICT towards Shari'ah Compliant E-Commerce Transactions

The use of information and communication technology for online commercial transactions may present some Shari'ah issues. In general, e-commerce deals with any form of business transaction executed utilising ICT [21]. Turban et al. [22] explains e-commerce as the procedure of buying, selling, transferring or exchanging products, services and/or information via computer networks, including the internet. E-commerce is a very important concept in Islam. However, certain Shari'ah concepts and necessities must be achieved to certify its acceptability and validity.

All e-commerce transactions must achieve necessary requirements regarding form (i.e. offer and acceptance), contracting parties (i.e. buyer and seller) and the subject matter (i.e. object and price) in order to certify their validity in view of Islamic law of contract [23]. These requirements include connectedness, intelligibility and conformity of the offer and acceptance, mutual agreement of the contracting parties, capability of both parties to engage into transactions, legal ownership of the benefit being exchanged, permissibility of the benefit, deliverability of the asset, and the absence of anonymity.

Moreover, every e-commerce transaction must be free of the component of usury (riba), uncertainty (gharar) and gambling (maisir) and must confirm the profit and justice of the contracting parties. Therefore, buyers and sellers need to "screen" the complete procedures of online transactions to confirm their agreement with Islamic law of contract.

1.12 Islamic Websites and Muslim Users

The number of internet users in the world is growing notably. Different websites give Muslim scholars and organisations the opportunity to spread Islam globally through the web. The presence of many websites offering Islamic subjects online makes it crucial to inspect their Islamic attributes and the elements that attract Muslims to use Islamic websites.

The website whose main objective is to portray the commandments of Allah (SWT) in accordance with the teachings of Prophet Muhammad (SAW) is called an Islamic website [24]. The website which offers significant and pertinent attributes attracts more users to learn/search information about Islam.

Islamic online services have lately become a significant element of many Islamic websites. These online services are evaluated by the facilities of free-software/applications, chats/blogs/forums, educational training, community development programs, online marriage opportunity, online donation, relief/assistance activities, and direct consultation with online scholars [25].

1.13 Web Applications for Muslim Travellers

Today, the advancement of tourism, transportation and low cost travel facilitates ease of global travel. When Muslims are travelling, Islamic rules and guidelines must be employed accurately. In 2010, the global Muslim population was approximately 1.6 billion accounting for 23.4% of the total population and is estimated to grow up to 26.4% by 2030 [26].

In addition, the number of Muslim travellers for work or vacation, both domestic and outbound, is growing enormously [27]. Islam as a complete code of life offers guidance that should be respected by Muslims in all aspects of life. There is currently no specific website devoted to Muslim travellers. Such a web application can offer Muslim travellers essential information such as the nearest mosque, available *Halal* restaurants in the area, prayer times, related local Muslim news, and advice for acceptable accommodation.

Additionally, the usage of social network [28] has been incorporated and highlighted in the application. Online visitors using their Facebook account can submit their feedback and recommendation, as [29] focused on the pertinent information to certify that this online application will keep up to dated.

2.0. CONCLUSION

The current paper focused on the impact of IT in extending Islamic knowledge by means of online Islamic literature, Qur'an, its recitation, translation, Tafseer and the traditions of the Prophet (PBUH). It also discusses available online Islamic websites such as www.islamonline.com and software, which can be downloaded from the web free of charge.

Information Technology gives Muslims the opportunity to gain Islamic education from their homes through virtual classes. Islamic games and videos are accessible for children to learn Islam. These interactive softwares motivate Muslim children to learn Islam.

Today, every Muslim and non-Muslim can listen not only to Islamic talks by famous researchers of the Muslim world but can take part in online discussions on various Islamic topics. They have the opportunity to ask questions and convey their perceptions.

The significance of IT in Islam is duly acknowledged in the Muslim world. From the perspective of the researchers, the Muslim world should generate a concentrated online accessible Islamic library to translate Islamic literature into every language for the global society.

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Fig 1: Islamic Finder for Adhan and Qibla Direction

Fig 2: zakat application

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