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Information Technology as an Instrument for Global Networking

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INFORMATION TECHNOLOGY AS AN INSTRUMENT FOR GLOBAL NETWORKING : AN ISLAMIC PERSPECTIVE

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Abstract:

During the past few decades, the information technology (IT) revolution has taken the world by storm. Despite its many champions and advocates, the IT explosion has often left many people feeling confused regarding its proper place and use. In the Muslim world, one finds some Muslim scholars particularly of a scientific backgrounds eager to embrace the latest technology with open arms, while others particularly those in Islamic disciplines are often more reserved in their receptiveness to such technology. This paper seeks to explore the Islamic view on the subject in the hopes of determining to what extent the apprehensions experienced by some Muslim scholars about IT are founded or unfounded. The paper will also examine some of the possible benefits and challenges of IT for Muslim intellectuals.

Introduction

In the last two decades, the information technology (IT) has been re-shaping how the world communicates and receives information. Many Muslim scholars, scientists and intellectuals have joined the bandwagon in extolling its merits and virtues. Evidence of the eagerness on the part of some Muslims to embrace such technology, has been the proliferation of Islamic sites on the Internet, some of which are devoted to Islamic education and propagation, while others being of a more commercial or entertainment nature. Further evidence of Muslim interest in

IT is the growing number of workshops, seminars, and conferences devoted to the issue, as well as the establishment of IT centres and academic institutions throughout the Muslim world. For example, in the past few years, the Organization of Islamic Conference Standing Committee on Scientific and Technological Cooperation (COMSTECH), has established four Centres for IT and Computer Science in Cameroon, Senegal, Pakistan and Syria.

Even governments are bracing themselves for the wave of the future. For instance, Brunei Darussalam has recently established the Information Technology Division (ITD), in order to promote the use of information technology within the public sector (<http://www.itss.gov.bn>).

Not to be outdone, Malaysia is presently embarking on an ambitious project to build a Multimedia Super Corridor (MSC) in order to accelerate its "entry into the information age" (<http://www.mdc.com.my>). Similarly, Pakistan is in the process of establishing seven IT academic institutions. Many universities have realized the importance of making IT as a compulsory subject for all students regardless of their specialization.

In contrast to the above Muslim scholars, scientists, intellectuals and political leaders, other Muslim scholars have been more hesitant in accepting the IT revolution. Members of this group warn about its possible ill effects on Muslim youth and society in general. Particularly in the Islamic fields, one finds many scholars reluctant to use such technology, even for research and academic purposes, despite having access to such facilities as is the case at University Brunei Darussalam, (<http://www.ubd.edu.bn>) and the International Islamic University Malaysia (IIUM), (<http://www.iiu.edu.my>). What are some of the obstacles that such scholars face in accepting and utilizing this kind of technology? What are some of their concerns and to what extent are such concerns legitimate from an Islamic point of view?

Still another group of Muslims recognizes that in spite of some negative side-effects, there are some very positive advantages to be gained via the use of IT, in the Muslim world. In this respect, a number of conferences and seminars have begun to address the "Islamicity" of IT, as well as how Muslims can use IT to further their own goals and purposes. For example in 1999, a handful of Muslim scientists in North America started to hold an Islamic Internet Conference (MISIC'99), with the goal of using the Internet to present and acquire knowledge on Islam, sharing information among Muslims around the world, as well as establishing personal and

organizational connections (<http://www.islamicinternat.org>)

This event has become an annual program under the supervision of the Islamic Society of North America (ISNA), and was renamed to "International Conference on Information Technology."

One of the objectives of this paper seeks to address the Islamicity of IT and to determine the extent to which such technology can be considered Islamic or non-Islamic, as defined by the Holy Qur'an and sunnah (traditions) of the Prophet Muhammad.

Perspective of the Qur'an and Sunnah on IT

Prior to delving into the Islamic perspective on the issue, it is best to commence with a proper definition of what is meant by Information Technology (IT) (in Arabic *ilm al-ma'lumat al-tiqaniyyah*, and *Technologi Malumat* in Malay language). IT is essentially a composite word derived from the words "information" and "technology." Webster's Universal College Dictionary defines information as "knowledge communicated or received concerning a particular fact or circumstance" or "knowledge gained through study, communication, research, instruction, etc."

Technology on the other hand is defined as "the science of the application of knowledge to practical purposes". Juxtaposed together, the two terms have come to refer to "the use of computers and telecommunications for the processing and distribution of information in digital, audio, video, and other forms."

The first thought which probably crosses the minds of those unfamiliar with Islam, is what possible relationship could there be between IT, as defined above and a book revealed 1400 years ago (i.e. the Holy Qur'an)? Perhaps it is best to state the obvious. The Qur'an is neither a scientific text-book, nor a technological "how-to" manual. Instead it is a book of guidance, which contains general principles applicable to all times and places. Qur'anic principles and guidance pertain to all spheres of life, the scientific sphere being no exception and by analogy the domain of IT.

As seen above, there is a direct link between IT and the acquisition of knowledge. It is here that the relationship between the Qur'an and IT lies. The importance of seeking and acquiring both divine and worldly knowledge in Islam was stressed from the very first revelation, "Read in the name of your Lord, who created, created man from a clot" (Qur'an: 96:1-2).

Numerous Qur'anic verses emphasize the high value Islam attaches to the acquisition of knowledge. For example, the Qur'an makes a clear distinction between those who possess knowledge and those who do not (Qur'an: 39: 9)

In addition, humans are encouraged to ask Allah to help them increase their-self. For many Muslim scholars the search for knowledge is an act of ibadah (worship), as long as the seeker is sincere in his/her pursuit and pursues such knowledge with the intention of pleasing Allah.

Generally speaking, the Islamic tradition has classified knowledge into two categories. The first kind of knowledge is that given by God to man via revelation. This type of knowledge is regarded as the highest form of knowledge and consequently is made obligatory on every Muslim to learn, understand and implement. The second form of knowledge is that acquired by humans through rational inquiry based on experience and observation.

This latter form of knowledge includes tandhur (observation), tadabbur (deliberation), tathakkur (recollection), rafakkur (consideration), tabassur (understanding), and ta'aqul (rationalization), all of which are mentioned in the Holy Qur'anic.

It is in this latter category form of knowledge that the field of IT lies. The importance of acquiring, storing, processing distributing and classifying information has its roots in early Islamic history, albeit the methods employed were not as sophisticated as the technology that is currently available today. For example, the first major task undertaken by Muslims, subsequent to the death of the Prophet (pbuh) was the compilation and collection of the Qur'an. Zaid bin Thabit, the primary sahabi (companion) responsible for this assignment, used the most meticulous data collection and verification techniques available to him at the time, in an effort to ensure the authenticity of the compilation.

The same strictness and attention was employed by Muslim scholars when collecting hadith. In this regard, it has been reported that Umar bin Abdul Aziz (99-101 AH) wrote to Abu Bakr bin Hazm, with the following message:

Look for the knowledge of Hadith (Prophetic traditions) and get them written, as I am afraid that religious knowledge will vanish and the religious learned men will pass away. Do not accept anything save the hadiths of the Prophet. Circulate knowledge and teach the ignorant, for knowledge does

not vanish except when it is kept secretly (to oneself). The above historical examples have been selected merely to illustrate the importance early Muslims attached to collecting, storing and preserving both the Qur'an and Prophetic traditions for future generations. By analogy, it holds that Muslims should employ whatever means are available today to access information, store, process and distribute their heritage, ideas, etc.

In this respect, IT is simply a means to an end. Accordingly, there is nothing in the Qur'an and sunnah which clearly prohibits Muslims from developing and utilizing IT for their own ends and purposes. Like all technology however, it can be used for both positive and negative uses. It is up to humans to decide to which ends they will use it for.

Allah (s.w.t.) in his mercy has sent humans eternal guidance via the Qur'an and sunnah of the Prophet Muhammad. In addition to the shar'iah (Islamic law), He has endowed humans with reason to help them in distinguishing between good and bad. As Allah's vicegerents, humans will be held responsible and accountable for all their ideas and actions. Those who use their talents towards positive ends will be rewarded for their good deeds.

In this regard, the Prophet Muhammad has stated, "the reward of deeds depends upon the intentions and every person will get the reward according to what he (or she) has intended..."

Consequently, the extent to which IT, falls within the legal parameters or spirit of the shar'iah (Islamic law) and takes into consideration public interest, ecological balance, social justice and individual freedom, it can be considered halal (permissible) and desirable. Conversely, the extent to which IT goes beyond the boundaries or spirit of the shar'iah and serves to promote alienation, dehumanization, excessive consumerism, environmental destruction, concentration of wealth in fewer and fewer hands and/or brings Muslims away from Islam, it is considered haram (not permissible).

Advantages and Shortcomings of IT

Taking into consideration the above guidelines, what are some of the advantages and shortcomings that Muslim societies in general and Muslim scholars in particular might encounter by using IT? Undoubtedly, the greatest benefits to be gained from the use of IT, particularly the Internet, are:

Firstly, the Internet contains a wealth of information on all kinds of topics that users can access relatively quickly and easily (depending upon the quality of one's computer). For example, a wide range of reference material such as dictionaries, encyclopedias, thesauruses, books, journals etc. are easily available on-line, thereby greatly facilitating a researcher's task. Information can also be obtained about upcoming academic events, conferences, seminars, lectures, intellectual gatherings, etc. In addition, a variety of distance learning programs offered by various institutions of higher learning can also be accessed on-line such as the International Islamic University Malaysia. In addition, the establishment of world's first live and interactive Internet Islamic University (IIU) in USA marks the "birth of new era in Islamic education" through disseminating Islamic information in English language via the internet device (<http://www.studyislam.com>). Other sites that provide Islamic knowledge and information include, IslamiCity (<http://www.islam.org>), Alim (<http://www.alim.org>), Harf Information Technology (<http://www.harf.com>), Horizons Media and Information Services (<http://www.ihorizons.com>), Iqra Islamic Publications (<http://www.iqra.net>), SoundVision (<http://www.soundvision.com>) and Astrolab (<http://www.astrolabepictures.com>), and may others that follow the Ahlu-al-Sunnah wa al-Jam'ah branch of Islam. Al-Islam (<http://www.al-islam.org>) is a Shi'a Muslim (an Islamic sect) site devoted to disseminating both Shi'a and Sunni teachings. Al-Islam also provides electronic information through its Ahlul Bayt Digital Islamic Library Project. According to Michael Boyd, "Muslims around the world are making a connection with their faith through the Net. There are web-sites through which they learn about their religion, as well as how to spread it."

Secondly, IT enables Muslims to access Qur'anic recitations, translations, and tafsir (Qur'anic exegesis), books of Hadith, fiqh (jurisprudence), juridical opinions (fatwas) and numerous other Islamic databases in various languages online and on CDs in both audio and video format.

Due to Islamic sites such those mentioned above and CDs containing pre-existing juridical opinions and proofs of all the legal schools of Islamic jurisprudence on a variety of topics, IT has the potential of considerably facilitating the job of shar'iah (Islamic law) specialists, by enabling them to generate legal decisions much quicker than in the past.

Thirdly, the ulama (religious scholars) and students of Islamic studies are

now able to conduct research on a wide variety of Islamic topics, unrestricted by past limitations such as inadequate library resources or prohibitive costs. In this respect, Abdul Kadir Barkatulla, Director of London's Islamic Computing Centre argues that the availability of classical Islamic texts and commentaries both on CD's and on-line has had a tremendous impact on Muslims whose access to religious scholars is limited (ie. those living in minority situations), since it enables such Muslims to verify the things they hear (i.e. concerning Islam) for themselves.

Ulama and religious scholars benefit from IT. In the past, when Islamic scholars wanted to come to a consensus on a particular legal issue, it would be a very time-consuming process, due to the slow nature of communication and transportation. Today, however, with the advent of e-mail, voice-mail, fax, video-conferencing, Internet, chat rooms, net-phone programs, virtual reality systems, etc., Islamic scholars located in different parts of the ummah can come together relatively easily and inexpensively to discuss and debate problems and challenges affecting the ummah. IT also facilitates the ease with which they can communicate and transmit books, articles, reviews etc. for publication, to academic journals and publishers.

Fourthly, the Internet serves as an invaluable notice board for the ummah by storing and providing information about various Islamic organizations, places of worships, academic institutions specializing in Islam, student organizations, conferences, seminars, up-coming community events, entertainment etc. In addition, programs which inform Muslims of the time of prayer and direction of the kibla for almost every major city in the world, Islamic arts, calligraphy, architecture and designs, traditional Islamic music, and religious greeting cards are also easily found on-line.

Fifthly, IT is a powerful tool for dawah (Islamic propagation). Conveying the message of Islam to others is a religious duty incumbent upon every Muslim. Allah states in the Holy Qur'an, "invite (all) to the way of thy Lord with wisdom and beautiful preaching; and argue with them in ways that are best and most gracious...." (16:125). Muslims are enjoined to use wise methods and appealing means to convey the message of Islam. Khan and Khan state that historically, all the great messengers of Allah such as Nuh (Noah), Ibrahim (Abraham), Musa (Moses), Isa (Jesus), used different methods that were appropriate for their particular communities and environments to invite the people to the way of Allah. In the 21st century, the Internet has emerged as the most cost-effective means of

presenting knowledge, information and news to millions of people in accordance with the above Qur'anic injunction.

Sixthly, the Internet is a valuable instrument for networking and exchanging ideas with both other Muslims and non-Muslims, and therefore breaking down the barriers between people. Traditionally, the Muslim world has been comprised of a wide variety of groups and communities that have been shaped by ethno-cultural, geographic and linguistic forces. Somerimes these relatively homogenous groups have evolved unique ways of thinking about Islam, often at great variance with one another.

IT is playing an invaluable role in breaking down ethnic, racial and geographical borders, by enabling Muslims from across the ummah to exchange ideas, network, and discuss their various views and positions on different aspects of Islam. In this respect, IT is serving to fulfill the commandment of Allah to "know one another" (Qur'an: 49:13). IT also has the potential for fostering a truly international Islamic brother/sisterhood. In addition, chat rooms, discussion forums, question and answer sessions, may serve as powerful mechanisms for generating new understandings or formulations of old problems and/or new solutions to new problems facing the Muslim ummah. According to Gary Bunt, "specific Muslim interest groups and interpretative stands can dialogue and form new notions of community via the Internet."

Internet forums serve as a means of encouraging greater tolerance among Muslims. Such interactions can elicit participation from shy or withdrawn participants, who might not normally have the courage to speak up in a face to face forum. The participation of non-Muslims in such forums demonstrates the role of IT as a tool for inter-faith dialogues and debate.

Seventhly, the Internet has become a powerful tool for various Muslim political interest groups. For example, CAIR (<http://www.cair-net.org>) does legal advocacy work on behalf of the Muslim Community in North America.

Eighthly, provides a tremendous opportunity for economic growth via e-commerce. According to Mohammed Abdul Aleem, the President of IslamicCity in Cyberspace, "the amount of e-commerce on the Internet is predicted to reach 1.3 trillion (US dollars) by 2003."

A number of Islamic companies have taken up the e-commerce challenge and entered the fray. Such companies include are also involved in marketing Islamic books, videos, compact discs, audio tapes, etc. Islamic books can

also be purchased on-line via numerous sites belonging to larger, better established book retailers.

Shortcomings of IT

Considering the numerous benefits IT offers to Muslims, why is it that so few Muslim countries are developing an indigenous IT capacity? More specifically, why are scholars in the Islamic disciplines not making better use of such technology? There are number of shortcomings resulting from the use of IT, including one of the biggest obstacles facing Muslims societies in utilizing IT, is the high rate of illiteracy, which presently exists in many Muslim countries. Although illiteracy in the Muslim world, varies from country to country, on average more than 70% of Muslims today are illiterate.

Consequently, unless illiteracy rates are drastically improved, it will be very difficult to promote the widespread use of electronic communications. While Muslim scholars in the Islamic disciplines are hardly illiterate, many do lack computer literacy and expertise in IT, which hinders their ability to access and effectively utilize such technology. Although the development of software programs has eased access to information, many ulama do not posses the technical know-how to develop, maintain, troubleshoot, repair, etc. the technology they are using. This in itself can be a major deterrent for such scholars, who may become easily frustrated with such technology.

Language can also serve as a barrier for accessing and utilizing IT. While some technologies including fax, voice-mail, net-2 phone, audio and video CDs can be used regardless of language, other technologies such as the Internet require some knowledge of English to be able to truly benefit from the technology or at the minimal access sites in other languages. In this regard, Munawar Anees states that "none of the major Muslim languages plays a major role in this huge knowledge machine."

A third barrier is the fact that many scholars in the Islamic disciplines are graduates of traditional religious schools which have tended to focus on memorizing of the Qur'an, Hadith, basic Islamic rituals, rather than applications of such knowledge, to meet the ever changing and growing needs of Muslim societies. Traditionally, such schools have placed little emphasis on scientific and technological education, much more IT. Throughout the 20th century however, these schools have increasingly come

under attack for failing to produce graduates who are capable of responding to the ever-changing needs of the Muslim ummah.

Their excessive focus on memorization, rather than understanding, applications and problem solving, has also come under fire, particularly now that the Qur'an, books of hadith, fiqh (jurisprudence), tafsir (exegesis) are easily available in CD format or on-line. Unfortunately, students of the Islamic disciplines often play second fiddle to those in the scientific and technical spheres in acquiring such facilities.

A fourth barrier to using IT is the attitudes of some ulamas. The fact that many ulama graduated from Institutions of higher learning, without the benefit of computers and have functioned for most of their professional careers without the use of a computer, has made many skeptical about the appropriate role and value of computers in Islamic education. Some perceive IT to be a product of secularization, and therefore opposed to religion. Others continue to debate its utility in the organization of religious knowledge and have been doing so for some time now.

In spite of the above, there have been some efforts to improve the IT literacy of students in the Islamic disciplines. Abdul Kadir Barkatulla states that while traditional centres of Islamic learning (such as al-Azhar in Cairo and Qom in Iran) did not respond to opportunities offered by IT for about ten years, they are now forced to, due to competition from more modern religious universities. He further states that nowadays there is almost a race to digitize Islam, among leading centres around the world.

For example, Al-Azhar University of Cairo has established its own home page devoted to addressing various Islamic issues, (<http://www.alazhar.org>), in both English and Arabic languages. The Centre for Islamic Jurisprudence in Qom, Iran, has converted several thousand Sunni and Shia' texts to electronic form, thereby appealing to the large Muslim mainstream.

The International Islamic University in Malaysia is also trying to produce graduates in the Islamic disciplines, who possess IT knowledge and skills as well.

A fifth barrier to using IT is the lack of financial resources. Muslim countries are among some of the poorest in the world. Even in those countries, which have high rates of GDP, there is no even distribution of resources. Although some argue that one of the merits of IT (particularly the Internet) is its low economic cost, for many individuals in the developing world (of which Muslim countries are part), such costs

are relatively high. The acquisition of hardware, development of software, provision of training, maintenance, and R&D requires an extensive outlay financial capital that many debt-ridden Muslim countries simply cannot afford. Moreover, the ability to access the latest software; requires the constant up-grading of one's hardware and further expenditure of capital. Due to economic factors, access to such technology is still very much limited to those in upper socio-economic income brackets. Dr. Atta-ur Rahman argues that there is a growing boundary in the Islamic world "between the have and have nots, between those who claim to have knowledge and those who possess money."

This view is also held by Bruce Lawrence, who states that IT serves to "reinforce global capitalist structures and asymmetries" and further the "marginalization of the already marginal." In light of such predictions, Muslims living in Africa and Asia will be among the least likely of its beneficiaries.

A sixth major concern of Islamic scholars about Muslims using IT, is that the relatively easy accessibility to information (ie. Islamic CD's, Web sites, discussion groups etc.), is leading to the breakdown of traditional hierarchy between the ulama and the general masses. According to Sa' ad al-Faqih of the London based "Movement for Islamic Reform in Arabia", IT goes a long way to bridging the 'knowledge gap' between an alim (religious scholar) and a lay Muslim by placing all relevant texts at the fingertips of the latter.

Mandaville adds that, The rise of IT has led to considerable intermingling and dialogue between disparate interpretations of what it means to be Islamic and the politics of authenticity which inevitably ensue also serve to further fragment traditional sources of authority, such that the locus of 'real' Islam and the identity of those who are permitted to speak on its behalf become ambiguous.

One concern related to the above, is the authenticity of information received by those seekers of Islamic knowledge. Many scholars in the Islamic disciplines defend their position however, by making a clear distinction between information (about Islam) and true knowledge. In their view, "not all information in this era of globalization leads to knowledge and not all knowledge gives birth to wisdom."

To some extent their position is justified since the majority of sites on the Internet are commercial oriented, with academic and Islamic sites,

comprising a very small minority. Moreover, due to the anonymous nature of such technology, the reliability and authenticity of information must always be scrutinized. For example, while Muslims can now receive religious pronouncements via the various e-mail fatwa services which have sprung up in recent months, they can never be sure whether the authoritative advice received via these services is coming from a classically trained religious scholar or an electrical engineer moonlighting as an amateur alim.

Without knowing the source of the information, people can be easily mis-lead. Moreover, with hundreds of sites dealing with Islam, Muslims etc. it is difficult for cyber visitors to distinguish between genuine Islamic sites and those that have more sinister motives. According to Khan and Khan, there have been cases of fabricated verses of Qur'an and Hadith put on the Internet by questionable sources.

Moreover, fringe or "deviationist" Muslim organizations such as the Ahmadiyah and Rashid Khalifa's spend lots of time and money promoting their various search engines and new organizations. Shad Ahmad states that although these sites are littered with false deceptions, they are well designed and present their views in a professional manner.

Due to the difficulties in verifying information on the Internet, some Islamic scholars fear that IT will lead some Muslims away from the straight path (ie. of Islam), by exposing them to all kinds of deviationist or mis-information about Islam, as well as immoralities and obscenities, in general. In addition, it may prevent some computer addicted Muslim personalities from fulfilling their religious obligations (ie. praying on time etc.). Advocates of this view argue that IT falls into a gray area, which is better to be avoided. They support their argument with the following hadith. According to the Prophet Muhammad, Both legal and illegal things are evident but in between them there are doubtful (suspicious) things and most of the people have no knowledge about them. So whoever saves himself from these suspicious things saves his religion and his honor.... (Bukari, Vol. 1, 49).

Another concern many Muslims have about using IT, is the fact that they are passive consumers of a technology created elsewhere, which is hardly value-free. Due to a number of reasons stated above, few Muslims are on the developmental end of such technology (other than a few software programs). IT's close connection and integration with western / Japanese culture, can be threatening for some Muslim societies, who fear

another on-slaught of Westernization, under the pretext of globalization. Some such as Muzaffar argue that "the religious vision of humankind has very little in common with the motives and goals of globalization."

Others fear that by consuming such technology, Muslims are blindly imitating "a civilization whose technological power threatens the whole chain of life on earth."

One serious concern expressed by many Muslims is the Internet addiction and law violation. Today, Internet connections can be found everywhere i.e school, street, home, office, mosque, cell-phone, plane, etc... and it is here to stay. Young Muslims are preoccupied surfing the Net mainly for entertainment accessing, both halal and haram sites, at home or at cyber-cafes, at every corner in the Muslim land, at affordable rates. For example, some cyber cafes in Brunei Darussalam offer rates as low as \$1/hrs use.

The possibility for children to become addicted to the Internet is a potential problem that Muslim families and professionals such as Muslim psychologists and social workers have to deal with. Addiction might cause children's studies and relationships to suffer, and "can also lead to isolation and suicidal thoughts," some doctors say.

Recommendations

While the list of obstacles and concerns faced by Muslim societies in general and Muslim scholars in particular can go on and on, to do so would merely serve defeatism. Since IT has numerous benefits and opportunities for Islamic scholars and there is nothing in the Qur'an and sunnah which blatantly prevents Muslims from utilizing and developing such technology (other than general guidelines), this latter part of the paper will examine some of the ways the aforementioned obstacles and concerns can be alleviated, in order to assist Islamic scholars in enhancing their IT proficiency, in the 21st century.

First and foremost, it becomes clear that many of the obstacles and concerns faced by Islamic scholars, stem from the inadequacy of the educational process. One almost hesitates to recommend educational reform as the key to alleviating such obstacles and concerns however, since for the last two centuries Muslim scholars and intellectuals have been talking about such reform. Clearly, the extent of repetition directly correlates with the magnitude of the problem.

Throughout the 20th century, many scholars have argued that traditional religious schools should offer a more integrated education, including modern scientific subjects such as IT in their curriculum. In this respect, Muhammad Ishaq Zahid states that Muslims "must create institutions where the education of the Qur'an, Hadith, and Shari'ah, goes side by side with the education of mathematics, physics, chemistry, biology, computer science, engineering, economics, and other sciences."

In addition, there is a need to enhance the language abilities of students enrolled in traditional religious schools, to better equip them to access information from both Islamic and non-Islamic traditions.

At the tertiary level, there is a greater need to apply and incorporate IT into the education curriculum. Essentially, the successful integration of IT into the Islamic disciplines is dependent upon two primary factors. The first factor required is the development of the physical infrastructure (ie. purchasing hardware, relevant software etc.) to enable both academic staff and students in the Islamic fields to access and utilize such technology. While governments can play a role in financing and supporting such ventures, limited resources often means that greater efforts must be made to get the private sector to play a larger role. Wakaf (Islamic endowment funds) can also be used towards this end.

A second necessary factor for the successful integration of IT into the academic institutions in the Muslim world is the creation of greater interest and awareness among scholars in Islamic studies about the benefits and possibilities of IT and its applications. In this respect, departments should hold workshops and seminars on IT, given by experts in the field, who are able to talk in non-technical language.

In addition to generating awareness, introductory and upgrading courses in computer literacy and IT, is essential for both staff and students in the Islamic fields. There is no point talking about integrating IT into the curriculum and hailing the benefits of IT, without showing religious scholars how to use and benefit from such technology. Particularly in the early stages, it is important that IT technicians are easily accessible to trouble-shoot, thereby enabling Islamic scholars to develop confidence. With greater hands on-experience, Islamic scholars will feel more at ease about IT and consequently will be more inclined to integrate it into their teaching methodologies.

Thirdly, IT presents a fantastic opportunity for Islamic scholars to

develop a variety of programs to assist students in learning about their Islamic heritage. In this regard, scholars should be encouraged to join forces with technicians in the Departments of Information Technology to develop and design software that not only meets their own research needs, but the educational needs of their students as well. Islamic scholars that are more ambitious should be given training on how to create and develop their own Web page. In so doing, they would no longer be "passive consumers" of "foreign technology", but pro-actively shaping and adapting technology to suit the needs of their discipline and the ummah (global Muslim community) in general. Some scholars such as Abu al-Hasan al-Nadawi (<http://www.nadwi.net>), Mohammad Sa'id Ramadan al-Buri (<http://www.bouti.com>), Yusuf Qaradawi (<http://www.qaradawi.net>), Harun Yahya (<http://www.harunyahya.org>) and Muhammed Salih al-Munajjid (<http://www.islam-qa.com>), have already established sites, which cover multi-dimensional issues on Islam.

The facility and ease with which Islamic scholars can communicate using IT, will enable them to exchange ideas and information with other scholars on how to build attractive Web sites, create chat and discussion groups, question and answer sessions, etc. In fact, as more and more reputable Islamic scholars take advantage of the opportunities IT presents, greater pressure will be put on inauthentic Islamic sites devoted to disseminating mis-information or deviationist teachings on Islam, since Islamic scholars will be able to use IT to counter and refute deviationist teachings.

As far as unreliable and inauthentic Islamic sites are concerned, Khan and Khan argue that there is a greater need to monitor information on Islam so that fabricated and mis-leading information can be easily identified. They also recommend developing a mechanism of certification and authentication for Islamic sites disseminating info on Islam, particularly those which use Qur'an and dubious Hadith to support their views. Shad Ahmad suggests that such sites could obtain approval from well known Islamic organizations, in a similar manner that halal certification is required for food products.

By adopting a positive mental attitude toward the possibilities of IT and using it to serve their interests, ulama would not have to be worried about losing their traditional authority to "pop shops" disseminating advice in the name of Islam. Instead, they can use IT to enhance their own respect and legitimacy in the ummah, by widening the base of their appeal to the more technological literate youth.

Conclusion

This paper has examined IT from an Islamic perspective. It has shown that there is nothing intrinsically in the Qur'an and hadith which prohibits the development, use and adaptation of IT. On the contrary, it was argued that Islam places tremendous emphasis on the acquisition of knowledge towards noble ends. In this respect, IT is simply a means of acquiring information and ultimately knowledge. Like all technology, it can be used for both positive and negative purposes. It is up to Muslims to use revelational guidance and their own rational and sensual faculties to discern the difference between the two. Ultimately, Muslims will be judged on the basis of their intentions.

The second part of the paper examined some benefits of IT for Islamic scholars, including the ability to access knowledge in general and Islamic knowledge in particular, Islamic propagation, networking, and e-commerce. Some of the reasons why more Islamic scholars were not making use of such technology were subsequently discussed. Such reasons include illiteracy, lack of technical expertise, attitude of ulama, language, inappropriateness of the educational system and scarcity or mal-distribution of financial resources. The third part of the paper examined some of the concerns Islamic scholars have about IT. Some Islamic scholars fear that IT will serve to diminish their traditional authority over the Muslim masses. Others fear it will be used to disseminate mis-information or false information on Islam. Still others argue that IT may lead some Muslims away from the path of Islam, by exposing them to various immoralities and obscenities.

In spite of the above obstacles and concerns one thing is certain - the genie has already been let out of the bottle. As such, ulama and Islamic scholars have two choices. Either they can completely ignore IT and subsequently suffer a further loss of credibility in the eyes of the ummah or they can rise to the challenge and pro-actively use IT to obtain the pleasure of Allah, by furthering the cause of Islam and assisting the ummah. Although rising to the challenge is the more difficult of the two, it is also more rewarding in the long run.

Naturally the arduous nature of the task is not one that Islamic scholars can completely address themselves. As such the onus is on educational institutions to develop the appropriate physical infrastructure to support the use of the latest IT, create awareness of the benefits of IT, as

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well as its applications in the field of Islamic studies, in addition to offering IT training and skills up-grading courses, designed specifically for scholars in the Islamic disciplines. With the right attitude and skills, Islamic scholars will be able to rise and meet the IT challenge, and in so doing, will be able to resume their lost position as leaders of the community, rather than followers.

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