CHAPTER 1

INTRODUCTION

1.1 Overview and Definitions

Values, or particularly ethical values that provide judgement on what is 'right or wrong', 'appropriate or inappropriate', 'acceptable or unacceptable' etc., holds a very significant position in the field of information and communication technology (ICT). One only has to see the many code of conducts and code of ethics proposed by professional bodies such as the Association of Computing Machinery (http://www.acm.org/about/code-of-ethics), the British Computer Society (http://www.bcs.org/server.php?show=nav.10967), Association of Information Technology Professionals (http://www.aitp.org/organization/about/ethics/ethics.jsp) and many others as a sign of this significance. With the prevalence of networked computers and the ever increasing role of the Internet in the lives of human beings, issues like privacy (at the individual level) and information and digital divide (at the social level) are not left out of the ethics and values debate. For example, Collste (2008) proposes arguments for a universal understanding of the privacy issue which does not assume a profound difference in giving value to the right to privacy between Western and non-Western cultures. He refutes the position of Orito and Murata (2005) that suggest the right to privacy is a Western value alien to the Japanese culture. Rooksby and Weckert (2004) looked into the issue of digital divide and its relation with ethics and social inequality. Papazafeiropoulou and Pouloudi (2004) conducted a study which looked into the ethical considerations in policies related to bridging the digital divide formulated by agencies like the Organization for Economic Cooperation and Development (OECD) and the European Union (EU). Similarly,Yu (2006), in her review of research on information and digital divide from early 1990's,

noted the problems of information poverty and inequality in access to the Internet had aroused ethical concerns, in addition to economic and political interests.

In mentioning about values, several definitions can be identified. Kluckhohn (1951) states that "a value is a conception, explicit or implicit... of the desirable which influences the selection of the from available modes, means, and ends of action". According to Rokeach (1973), "a value is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence". Another definition mention values "...as normative beliefs about proper standards of conduct and preferred or desired results" (Nystrom, 1990).

Based on these definitions, in general, values relates to what are desirable and preferable. Hence Islamic values would relate to beliefs, conceptions and end-states that are desirable and preferable from the Islamic point of view. In this sense, the meaning of a person believing and doing something desirable and preferable in Islam is actually to obey the Islamic message and teachings, i.e. what is desirable and preferable in Islam is obedience to the teachings of Islam. This is what is meant when man is created to obey Allah. In this light, *Tawḥīd*, the Islamic belief of only one God, would be the belief value that is the basis that forms the conception of attaining what is good and beneficial (*jalb al-maṣlaḥah*) and rejecting what is evil and harmful (*dar'i al-mafsadah*) as the aims of the *Sharī'ah,* the guidance given to Allah for mankind in the form of Islamic teachings. The *Sharī'ah* provides several rules or *al-ḥukm al-shar'ī* as the end-states or modes of conducts that are the values of the action of a person.

The understanding of Islamic values is even more defined when it is a likened as a form of sacred values. Sacred values are values that are treated as having transcendental significance that are not comparable to secular values (Tetlock et.al., 1996). According to Atran and Axelrod (2008), sacred values are independent of any material goal or purpose, and even though the values often have a religious basis, they mention that some values that are transcendent (e.g. fairness), thus can be considered sacred, not necessarily have to be related to religious teachings, therefore becoming a 'sacred secular value' that are ahead of any material gains. Despite the differences in what is considered sacred, sacredness is seen as a purpose that is universal across societies, as established by sociologist and anthropologist by the mid 20th century (Aberle et. al., 1951; Radcliffe-Brown, 1952). Political philosophers like Aristotle, Marx and Nietzsche believed that people would more likely do something if it is based on values that goes beyond the desires of human beings (Tetlock, 2003). In this sense, Islamic values when seen as a form of sacred value that has relation to the concept of sacredness and God would be able to relate to other societies in a more universal way. This then would fall back on the universal character of the *Sharī'ah* in being suitable for mall mankind as a way of bringing the understanding of Islamic values closer to other societies.

Therefore, Islamic values can be described as the beliefs, conceptions, end-states and modes of conduct that are based on what is determined, preferred and desirable by the teachings of Islam. It a nutshell, Islamic values fundamentally constitutes belief in Allah and obedience to Him. This is related to what is mentioned in the verse from the *Qurān* 103:1-3 (translation given in Appendix A) that mentions the basic characteristics needed by man in order to avoid living a life of loss, beginning with belief followed by doing righteousness, which can be related to adhering to the teachings in the *Sharī'ah*.

Discussing values would bring in mentioning ethics and morals. According to Kramer (2009), “ethics refers to the normative standards by which human beings relate to each other and the world”. This standards normally relate to what is considered right or wrong, good or bad. Therefore, ethics relates to concepts of determining right and wrong behaviour. Ethics is also known as moral philosophy (The Internet Encyclopedia of Philosophy, University of Tennessee at Martin). Morals is thus relating to the form of the behaviour itself by an individual or society that is considered to be right or wrong, good or bad, beneficial or harmful to oneself or others (http://onlineethics.org/cms/12929.aspx).

Value is considered an ethical concept (Kramer, 2009). This can be understood when we say that what is considered good is desirable and preferable, and vice-versa. Indeed western philosophies would describe what is considered good or bad, but for this study, in discussing the Islamic perspective, the determination of good and bad is dependent on the teachings of Islam. To be morally right and having good behaviour in Islam means to follow the Islamic teachings. Islamic ethics and morality relates closely to jurisprudence, hence the strong unity between ethics, morality and the Shariah is evident (Urroz-Korori, 2009). Determining what is good or bad, right or wrong, beneficial or harmful falls back to the aims of the *Shariah*. Therefore, the *al-ḥukm al-shar'ī* establishes the Islamic values in the practical sense for man's actions and behaviour (Qaradawi, 1996; Haron Din et. al., 1990). This is discussed later in Chapter 2.

With the increasing importance of ICT in the everyday life of human beings, the importance of value consideration in ICT also increases. The discussion on values in this study rests on the understanding of what is considered ICT and ICT development. These are discussed below in forming a background understanding for this study.

1.1.1 Defining ICT

ICTs deals with computers that exist in various forms and sizes beyond the common appearance of the desktop personal computer or laptop. Essentially, computers are devices that gathers or receives input of data, processes data into information, outputs and stores the data or information (Morley and Parker, 2006). Here, data can be described “a representation of a fact or idea” (Evans, Martin and Poatsy 2007) in the form of a symbol, a number, a word, an image or a sound or video recording, for example “6035551234” or “Ahmad”. On the other hand, information as processed data would refer to data that is organised and presented in a meaningful and useful form to humans (Evans, Martin and Poatsy 2007; Laudon and Laudon, 2006). For example the same data mentioned earlier when organised and presented as 'contact information' would mean the telephone number 603-555-1234 of a person named Ahmad. Therefore, computers exist in real life as information processing systems or information systems (O'Leary and O'Leary, 2002). Technically, an information system is described as “a set of interrelated components that collect (or retrieve), process, store, and distribute information...” (Laudon and Laudon, 2006). An information system has six components or parts as shown in Table 1.1 :

Table 1.1 : Components of an Information System

1. People, which is the main reason for computers existence. In this sense, people can be categorised into two groups, the users and the practitioners or developers, which are described below.
2. Data that is input into the system by people or gathered by the system itself through automated input devices such as sensors
3. Hardware, i.e. the devices and equipment involved in processing data into information
4. Software, i.e. the computer programs, which are step-by-step instructions that tells the computer how to process the data into information
5. Procedures, which are the rules and guidelines followed when dealing with data and when using software and hardware

(Table 1.1 continued)

6. Connectivity, i.e. communication between computers and systems that allow the sharing of information through a wired or wireless medium.

(Adapted from Shelly, Cashman and Rosenblatt, 1998; O'Leary and O'Leary, 2002)

The underlying technologies concerning these parts of information systems are grouped under the term information technology (IT). This includes hardware technology, software technology, storage technology, and communications technology. Communications technology consist of the devices and software which "...links the various pieces of hardware and transfers data from one physical location to another", forming networks for sharing information and resources, for example the Internet (Laudon and Laudon, 2006).

Information technology is thus seen as "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware" (Information Technology Association of America, n.d.). Information technology normally includes computer networking and telecommunications (Howe, 2010a) that enables the organization and communication of information electronically (Information technology, n.d.). With an increasing role and function of communication and accessing information for IT, especially through the Internet, the term information and communication technology (ICT) is commonly used to refer to aspects related to computers, information technology and information systems. The BCS considers the two terms as similar, describing them as the application of technology to organize, manipulate and distribute information, which includes computing (using a computer to manipulate data or control a process), telecommunications (communication of information over a distance through

cables or electromagnetic radiation) and digital electronics (British Computer Society, 2008). The term ICT is adopted for the purpose of this study.

ICT thus can be defined as the technology that "...people use to share, distribute, gather information and to communicate, through computers and computer networks" (ESCAP, 2001). As mentioned above, different kinds of technologies are involved, hence information and communication technologies (ICTs) "are a complex and heterogeneous set of goods, applications and services used for producing, distributing, processing and transforming information", which have included "telecommunications, television and radio broadcasting, computer hardware and software, computer services and electronic media (e.g. Internet, electronic mail, electronic commerce, computer games)" (Marcell, 2000). According to the definition by the World Bank, ICTs are "the set of activities which facilitate by electronic means the processing, transmission and display of information" (Rodriguez and Wilson, 2000). Thus, the technologies that are considered as ICTs are technologies that are related to the activities of creating, processing and communicating information. Likewise, the human activities in ICT are identified as creating and processing information, communicating information, as well as developing the related technologies mentioned earlier.

1.1.2 Human beings in ICT

The previous descriptions of ICT emphasises the human activities involved in utilising the different technologies. As mentioned earlier, generally, human beings that interact with ICT can be categorised into two groups (Morley and Parker, 2006; Shelly, Cashman and Rosenblatt, 1998). The first group are the users, sometimes called 'end users', that make use of ICTs to performs tasks that fulfils their various needs such as writing documents, creating graphical presentations, conducting online commercial

transactions, communicating with other people, managing and storing data, reading electronic documents, searching for information on the Internet, playing games and many other tasks for numerous purposes. The second group are those who possesses ICT knowledge and skills and have normally gone through some form of education or training and obtained relevant qualifications. Apart from basic ICT knowledge, the practitioners may have expertise in certain areas of ICT which are reflected in the type of job they do. Some examples of ICT practitioners are application programmers, computer engineers, database administrators, multimedia designers, network administrators, security specialists, software engineers, systems analysts, webmasters, web developers, web programmers, IT managers, and chief information officer or chief technology officer.

With ICT becoming more commonplace and many user friendly applications being developed that allow the user to accomplish more with ICT, the differentiation between the two groups are becoming more unclear. However, a distinction can still be made between the people who use ICT and the people who develop the technology and make it work for the users (Morley and Parker, 2006). Within this study, the terms practitioners, developers and designers are used to distinguish those who are involved in the various aspects of developing the technology from the users who make use of ICTs at the user level.

1.1.3 ICT Development

ICT development can be seen from two perspectives. From the technical perspective, it is associated to activities concerning development of ICT related technologies and of application these technologies, such as software development (Howe, 2010b), systems

development (Laudon and Laudon, 2006), hardware development, computer networking and others. This is related to the definitions of ICT mentioned previously.

From another perspective, ICT development would be connected to the term 'ICT for development' or ICT4D. Generally this refers to using ICT for social, political, and economic development at the community, national and global level. ICT is utilised to "improve the performance of business and the efficiency of the markets, empower citizens and communities, increase their access to knowledge, and help to strengthen and redefine governance at all institutional levels" and is a multi-stakeholder approach that involves governments, the private sector, civil society and other relevant parties (The Global Alliance for Information and Communication Technologies and Development). On a slightly different note, Peña-López (2009) sees ICT4D role as mainly to use ICTs "to fight inequality and (social) exclusion" between the 'haves' and the 'have nots' in society. He uses the term 'ICT and development' or ICTD to describe the role of ICT in socio-economic development and "achieving higher stages of well being", which covers four man areas: health, economics, education and freedom. In general, he sees ICTD as efforts for future progress and improvement as compared to past situations, giving it a more encompassing position compared to ICT4D's specific focus.

This second perspective is related to the first perspective since it also involves activities of developing information and communication technologies (ICTs) to achieve the development purposes mentioned above. As an example of this perspective, the United Nations Conference on Trade and Development (UNCTAD) in coming out with ICT development indices had focused on several aspects that characterises ICT development. Those aspects are connectivity (physical infrastructure for ICT access),

access (broader factors determining connectivity, such as availability and affordability), policy (such as government policy towards allocating of resources for ICT and structuring ICT related markets) (United Nations Conference on Trade and Development, 2003). As stated by Marcelle (2000), ICTs are “a systemic, pervasive set of technologies that are associated with fundamental institutional, social and economic restructuring”.

For this study, both perspectives are adopted to give meaning to the term ICT development. Thus, ICT development is defined as the activities related to the creation and application of ICT for the purpose of meeting the needs of individuals, organisations, communities, nations and the society at large.

1.1.4 Development and Islam

Development in general concerns growth and progress (Peña-López, 2009; Development, n.d.). According to Aidit Ghazali (1990) a nation's development that is dependent on total human development is seen as “an integrated and indivisible element of both the moral and socio-economic development of the human society” (p.2). Similarly, in Islam, human beings are positioned as the focus and core driving force of development. Development is described to include not only physical, material, or economic dimensions but other forms of development as well, such as social, political, cultural, intellectual, moral, spiritual and environmental development, portraying a holistic meaning of development for human beings. Therefore, any development policy or strategy should take into consideration all these dimensions, placing man at the centre of development in connection to other elements such as physical resources, capital, labour, education and others (Aidit, 1990; Abd al-Hamid, 1998; Alhabshi, 1992). This balanced approach to development is built upon the paradigm of *Tawḥīd*, the belief that

there is only one God, Allah as the Creator and Sustainer of all and everything that exist in this world (Alhabshi, 1992). The worldview that forms the understanding of development in Islam are based on three main fundamentals: Allah as the God and sole Creator, Human beings as a creation of God, the natural resources are also creations of God, of which human beings are to benefit from the resources based on the laws and guidance given to them by God (Muhammad Syukri, 2003). As such, this approach is in line with the *Maqāṣid al-Sharī'ah* or the goals and purposes of the *Sharī'ah*, being the law that guides man in his life and actions (Alhabshi, 1988; Chapra, 1993). In fact, the *Maqāṣid al-Sharī'ah* is a proposed strategy and policy for human development in which the matters of *dī'n* (religion), *nafs* (human life/soul), *'aql* (mind/faculty of reason/intellect), *māl* (property/material wealth), *nasab* (progeny/lineage/offspring) and *'irḍ* (honor) are matters that is given priority in development. These are the essentials (*Al-Ḍarūriyyāt*) that need to be taken care of by all humans as basic 'consumptions'. Like wise for the other two levels of the *Maqāṣid al-Sharī'ah,* fulfilling the *Al-Ḥājiyāt* (complementary needs or exigencies) and *Al-Tahsīniyyāt* (embellishments and luxuries) establishes the priorities in development. In extension to this, the priorities and provisions for development is further refined by categorising them according to the rules of the *Sharī'ah*, whether it is *wājib* (obligatory), *mandūb* (recommended) *mubāḥ* (permissible), *makrūh* (discouraged) or *ḥarām* (prohibited) (Alhabshi, 1992).

Development in Islam focuses on an integrated form of human development stemming from the concept of man as a unity of spirit, intellect and body, the superiority of Allah that includes all aspects of human and social life without any exception, and obedience to Allah in all matters of society and statehood. This integration means placing *Tawḥīd* as the foundation for human development and carrying out the will of Allah in economic, political, social and cultural development, whether individually or

collectively (Alhabshi, 1992; Muhammad Kamal, 1986.). To this, scientific and technological development can also be added, in which this becomes means to make use of natural and human resources, capital and others to achieve prosperity and happiness in this world and the Hereafter (Muhammad Kamal, 1986). Thus, man will live and function with an understanding that his efforts and endeavours done in accordance with the *Sharī'ah* is also an *'ibādah* (worship) to God (Alhabshi, 1992). Therefore, development in Islam is a multidimensional perspective which is comprehensive, and acknowledges that man is created with needs in all these different dimensions (Nik Mustapha, 2007).

Wan Mohd Nor (2001) views development as as a form of improvement or *iṣlāḥ* i.e. acting upon someone or something that makes it good, right, proper, fair and suitable with all higher order values. Mansor Ahmad Saman (1993), in attempting to describe development as encompassing the physical and material with the metaphysical and spiritual, defined development as:

> "the process of unfolding and growth of the spiritual seed of humanity, wrapped in the heart of man, opening and exposing itself to the climate divine, for it to grow gradually fuller and better within the context of the greater universe" (p.22-23)

This definition not only places humanity as the core of development, but also connects man's life to the divine. He refers this definition to several verses from the *Qurān* (17:70, 40:64, 64:3). Based on these verses , Allah has provided man wit the creations as resources for him to make use, i.e. for development. The utilisation of the resources would connect man back to God when man realises the origins of these creations that enables the various forms of man's development.

Therefore, Mansor mentions the heart, i.e. the spiritual region, as the starting place for development, after which material development will follow. This can be related to man's realisation of his position as God's servant, created not only to be obedient and establish spiritual connections with Him, but also as His *khalīfah* (vicegerent, envoy, representative) that has the duty to administer and develop this earth in a responsible manner according to the laws and guidance provided by Him. Therefore, in any kind of development aspired by man, a commitment to God beginning with his belief and translated into adherence to moral and ethical values is very much required. This instills a sense of accountability not only to God but also other human beings and transforms the efforts towards development as a form of *'ibādah* (worship) and obedience to God that will hinder vices such as corruption, dishonesty, unethical practices, and others (Ghazali, 1990). Such nature of development will have within it a cause, a certainty, a meaning in which all efforts of development will aim for, which Al-Attas (2001) calls the "final objective" of development. This, according to Manzoor (1993), is what the modern civilisation lacks in its doctrine of development that is possessed by continuous progress, and becomes a civilisation of endless action, void of an ultimate and supreme value that can provide a sense of direction, guidance and meaning to development.

Therefore, in discussing ICT development and Islam, the same spirit and understanding should be in place. The focus is to be given to the human activities in ICT and how these activities should relate to man's position and responsibility in front of God. This focus on human activities is suitable for addressing issues of ICT development from an Islamic perspective since development in Islam places man at the centre of attention and as the major driving force in any form of development efforts, as previously mentioned. This position given to man provides a realistic view of development, and at the same time justifies the importance of incorporation of values for development (Aidit, 1990),

including ICT development. Only then a more holistic form of ICT development can emerge from this understanding. This is what this study will consider in the following chapters.

1.2 Statement of Problem

This research is undertaken based on the premise that a perspective or understanding is needed to describe the relation between fundamentals of Islam and practices in ICT development that adheres to good values and ethics. Islamic values and ethics for ICT related issues has been addressed by several authors. Issues like online privacy have been touched from an Islamic ethical point of view by some authors, for example Abdallah (2007) and Begg (n.d). Norazlina Zainul et.al. (2004) looks at privacy in relation to e-commerce activities. Cannataci (2009) on the other hand applies a legal and human rights approach in discussing technology related privacy and Islam. The general consensus is that Islam protects and honours privacy, whether online or offline. Other issues like cybercrime and intellectual property have attracted a more direct relation with Islamic law (*Sharī'ah*) due to the commonly legal nature of these issues (Jamar, 1992; Al-A'ali, 2007; Maghaireh, 2008). Mancuso (2007), looks at e-commerce transactions, comparing consumer protection in e-commerce between European law and Islamic law. Some attention also has been given to elaborating professional code of ethics from an Islamic perspective. Kheder (2001) analysed the code of ethics and professional practice for software engineers as proposed by ACM and IEEE Computer Society with reference to the *Qurān* and *Sunnah*. Other works on the Islamic view on ethics for ICT professionals include Rogerson and Begg (1999), Al-A'ali (2008) and Hameed (2009), as well as those undertaken by this researcher himself (Aznan Zuhid and Elistina, 2005; Shuriye and Aznan Zuhid, 2008)

Based on the previous works, a general question that the researcher personally felt can be asked here is 'what comes before that, i.e. before the ethical and good valued practices'? More specifically, how can the fundamental human activities of ICT be related to the fundamentals of Islam that will eventually form a perspective that can be a basis for understanding the incorporation of Islamic values in ICT. This is the major question in which this study wishes to address.

With regards to ICT and development, the focus of Muslims countries is similar to that of other countries, that is in the nature of ICT4D/ICTD. This can be understood since majority of the Muslim countries are still behind in socio-economic development. Issues discussed in the Conference on Information Technology for Development in the Islamic World held from 20th to 24th November 2000 in Tunisia is a testimony of this (Ergin, Doruk and Al-Zou'bi, 2002). Nevertheless, despite the enthusiasm towards using ICT to improve their socio-economic condition, the fact of being God's servant on earth and adhering to Islamic fundamentals should not be overlooked by Muslim societies.

As a Muslim country with various efforts being done to advance and make use ICT for the development of its society, Malaysia should be looking at the role of Islamic values in its ICT initiatives. This is expected since emphasis is also given to incorporate Islamic concepts and values in the development process in Malaysia. The introduction of the ‘Islam Hadhari’ approach by the government is a recent example of this. The concept outlines ten principles with the aim to generate a balanced and integrated development in creating a civilization in line with the excellence achieved by the previous Islamic civilizations (Department of Islamic Development Malaysia, 2005). In the present long term development plan, the National Mission 2006-2020, the Islam Hadhari approach is positioned as a “comprehensive and universal development

framework" for Malaysia (Ninth Malaysia Plan 2006-2010). The Ninth Malaysian Plan 2006-2010, which is the first phase of the National Mission, aims to nurture Malaysians into having a 'first class mentality' in which, among other criteria, includes possessing strong moral values. In striving for this, the Islam Hadhari approach is promoted to instil a progressive developmental outlook with moral and ethical values (Ninth Malaysia Plan 2006-2010).

Therefore, in relation to the perspective of Islamic values for ICT mentioned earlier, a question of concern is what are the underlying issues that needs to be addressed in the effort to incorporate Islamic values in Malaysia's ICT development? This is also another problem that this study will look into by looking into the views of people responsible for ICT development in Malaysia.

1.3 Objectives of the Research and Methodology

As mentioned above, the major question in which this study wishes to address is how can the fundamentals of ICT be related to the fundamentals of Islam that will eventually form a perspective that can be a basis for understanding the incorporation of Islamic values in ICT. The 'how' in this sense is more conceptual than methodological. Thus, the broad aim of this study, borrowing the words of Fuchs (2008), is to contribute to the "clarification of concepts that arise in the context of the relation" of Islam and ICT through an approach "grounded in a multitude of other theories and concepts" that proposes avenues for practising Islamic values in ICT development. Specifically, the main purpose of this study is to develop an understanding on the incorporation of Islamic values in ICT development, and their related issues in the Malaysian ICT development context as an example. In addressing the questions mentioned previously, this study approaches ICT through the communication process, information content

creation, and technology shaping. By referring to the definitions of ICT, these three activities are seen to represent the human involvement in ICT, i.e. communicating through ICT, creating information content, and developing new ICTs and their applications.

Thus, the specific objectives of this study are:

1. to examine current perspectives on the communication process and propose opportunities for introducing Islamic values for communication in ICT
2. to investigate current perspectives on the concept of information and their relation to the concept of *āyat* (sign) in the *Qurān* as a way for establishing Islamic values for information content in ICT
3. to examine current perspectives on the shaping of technology and propose an Islamic perspective in shaping technology and ICT
4. to identify the issues related to Islamic values for Malaysian ICT development through the views of the people involved in ICT development in Malaysia

This study would employ textual research and qualitative interview as the methodology. In order to achieve these objectives, existing literature on communication, information and technology will be reviewed and analysed to highlight positions that would relate to the introduction of Islamic values. For the fourth objective, a qualitative study will be conducted by interviewing the relevant officials from government agencies related to ICT development in Malaysia. With regards to Islamic discussions, verses from the *Qurān* as well as traditions of Prophet Muhammad or the *Sunnah* will be referred to. *Sunnah* as the Prophet's traditions refers to his sayings, actions and tacit approvals. In this study, the term *hadīth*, which normally refers to the Prophet's sayings, is considered part of the *Sunnah*. For purposes of standardisation, the translation of the Quranic

verses quoted in the study would solely rely on that given by Abdullah Yusuf Ali. The translations are provided in Appendix A and listed according to their order of appearance in each chapter. Translations of the *Sunnah* would be based on that given by the sources in English language that are referred to. The Islamic discussions are also supported by points from contemporary Muslim scholars that are relevant to this study.

1.4 Significance of the Research

This research is significant in filling a main void in discussing ICT in relation to Islam by providing an understanding on the incorporation of Islamic values in ICT and ICT development. As previously mentioned, previous work on Islamic values in ICT emphasises on certain issues or professional practices without in depth discussion on how the Islamic values came about to be connected to the issues or professional practices. This understanding is needed as a fundamental reference for Muslim ICT researchers, academics, practitioners and users alike in practising Islamic values in the ICT related activities. As God's servants, the responsibility to practice an Islamic way of life covers all aspects of life, including those that are technology related. According to Islamic belief, God accepts only Islam as the way of life, and has stressed this matter in verse 3:19 of the *Qurān* which means: The religion before Allah is Islam (submission to His Will).

The significance of this research is also underscored as it attempts to answer some fundamental development issues of the present Muslim society. Manzoor (1993, p.43), in proposing research themes on Islam and development, suggests for studies to be done on the western understanding of science and technology and provide an Islamic perspective for it as an epistemological and sociological alternative for the Muslims. From a Muslim technologist perspective, Tengku Mohd Azzman Shariffadeen (1998),

former CEO of MIMOS Berhad, an agency under the Malaysian Ministry of Science, Technology and Innovation for ICT research and development and national ICT policy development, mentions that :

> "..while we aspire to attain the same levels of so-called 'development' in the western mould, we should reaffirm the basis of development for Muslims, which is inextricably linked to the purpose of man's creation and our moral duty to build a better world for all mankind".

He continues to mention that there is a great opportunity for Muslims to demonstrate their model of development in a world that is propelled by ICT into becoming a unified, shared and borderless social, cultural, economic and political entity.

The fieldwork conducted as part of this study serves as an avenue for discovering the pertinent issues related to Islamic values in Malaysian ICT development activities, policies and programmes. This is as identified by the government ICT officials who are interviewed in the study. These issues can further assist policy makers in Malaysia in providing for Islamic values in their ICT policies and programmes. The policy makers here do not only refer to those in the government but also in the corporate sector of Malaysia, since the issues identified would also be related to the situation of Malaysia's society in general. Similarly, the findings of the study can be used as a reference by policy makers of other Muslims countries in their efforts to promote Islamic concepts in ICT development in their respective societies.

1.5 Organisation of Thesis

The organisation of chapters for this study is as follows. Chapter Two looks into the fundamental principles of Islam that forms the basis for Islamic values. *Tawḥīd* (the belief in one God), man's position as God's creations, the *Sharī'ah* (Islamic Law) and its

purposes, and *Niyyah* (intention of man's actions) are presented and discussed in relation with ICT in this chapter. An initial framework in proposed at the end of the chapter.

Chapter Three focuses on the process of communication. This chapter puts forward through various communication models the notion that communication is a process, therefore communication carried out by humans through various means, particularly ICT, is a human activity that entails consideration of values in it. Perspectives on Islamic communication are also presented. This communication process is then related to the *niyyah* of the parties involved in the communication process, the aims of communication in Islam, and practical values that should be present when practising communication using ICT.

Chapter Four concentrates on the nature of information. The relation between meaning, context and values in connection with the existence of information is discussed. This is then extended to the concept of *āyāt* (signs) in the *Qurān* as to form an understanding on the meaning and context as proposed in the verses of the *Qurān*. This entails on how Islamic values are to be incorporated into information content for ICT

Chapter Five looks into the relation between humans and technology in the shaping of technology as an activity in ICT development. Issues on non-neutrality and effects of technology and ICT on man is discussed. Different perspectives on technology shaping are also presented. The relation between society, culture, meaning with technology and ICT is also explained. Islam is then positioned to take the place of social influences in the shaping of technology.

Chapter Six presents a qualitative fieldwork study that aims to identify issues concerning the introduction of Islamic values in ICT development in Malaysia. Guided by the framework and points highlighted in the previous chapters, government officials that are involved in the planning and implementation of ICT policies and programmes in Malaysia are interviewed. Following the analysis of their responses, the findings are presented which points to the kind of issues that needs to be taken into consideration in order for Islamic values to be incorporated in Malaysian ICT development initiatives.

Chapter Seven concludes the thesis by summarizing the main findings of the study. From these findings, a final conceptual framework for the incorporation of Islamic values in ICT is recommended. Recommendation on how the framework can be extended to other fields of technology development is also mentioned, with the findings from the study mentioned in Chapter Six as an example. Finally, suggestions for future research is given at the end.

CHAPTER 2

FUNDAMENTALS OF ISLAMIC VALUES FOR ICT

2.1 Introduction

This chapter looks into fundamental elements of Islam as the source of Islamic values for ICT development. The chapter begins by looking at the importance of Islamic values, particularly relating to development of science and technology. The chapter continues by describing *Tawḥīd*, the belief in one God as the basis of everything Islam, including values. From this belief comes the *Sharī'ah*, rules that guide all forms of human actions. The purpose or objective of the *Sharī'ah* is to bring about the attainment of *maṣlaḥah* (benefit) and prevent *mafsadah* (harm) for all mankind. This would then relate to the rules of the *Sharī'ah* (*al-ḥukm al-shar'ī*) that become the values espoused by Islam for human actions. This purpose, the *Maqāṣid al-Sharī'ah*, is discussed in light of ICT development, together with *niyyah* (intention) as the process that leads to the realisation of the *Maqāṣid al-Sharī'ah*. Finally a framework is proposed that portrays the flow of values from *Tawḥīd* to ICT development as an initial illustration of the incorporation of Islamic values in ICT development.

2.2 The Importance of Islamic values in development of science and technology

Values can be defined as a "broad tendency to to prefer certain state of affairs over others" (Hofstede, 1984, p. 18). Schwartz describes values as "desirable states, objects, goals, or behaviors, transcending specific situations and applied as normative standards to judge and to choose among alternative moods of behaviour" (1992, p.2). Values would play a role in determining one' s course of action, as well as influence one's evaluation of his surroundings (Norhayati et.al. 2003, p.52). This notion is much relevant to the creating, sending and receiving of information.

Values cannot be separated from man, since it concerns his actions, behaviour and the things around him. With values, man is able to differentiate between right and wrong, good and evil, resulting in purity in thought and morality (Muhammad Abd Rauf, 1991). Previous Muslim civilizations had demonstrated the importance given to values in producing advancement in science and technology that are not only functionally beneficial but also ethical and of high stature (Mohd Azraai, 2003). In the development of technology, what emerge are the inherent values that influence its development, as well as potential values that could affect the society receiving the technology (Unus, 1985). This two way relation is explored in Chapter 5 on technology shaping. Nevertheless, such a situation requires man to realise the importance of values in technology development and play an active role in determining the kind of values that would exist in the society as a result of technology development. Indeed for Muslims, they would aspire for Islamic values to be prevalent in society, bringing humanity closer to his Creator. This form of morality originates for the sound belief in God and flows to other aspects of life such as economics, politics, laws, as well as science and technology development. Therefore, Islam is established as not just a religion but a complete system for life, a culture, a civilisation, all rolled into one that is Islam with Islamic values imbued in all human activities (Sadr, 1984). In this sense, values become the link that bonds together the belief in God and all human activities, creating what Ansari (1973) termed as an 'integrated ideology' for society.

In identifying Islamic values, Ziauddin Sardar (1982), which is also mentioned in Ford (1984), proposes several core values that would guide the development of science. These values include *tawḥīd* (unity), *khalīfah* (trusteeship), *'ibādah* (worship), *'ilm* (knowledge), as well as some values in opposing pairs: *ḥalāl* (praiseworthy) v *ḥarām*

(blameworthy), *'adl* (social justice) v *ẓulm* (tyranny), and *istiṣlaḥ* (public interest) v *dhiya* (waste). As Ford mentions:

"Questions can be asked as to whether the results of a particular programme; will lead to a higher measure of social justice or reinforce tyranny; will respect or not the position of trusteeship of man with respect to the world of nature; will promote public interest rather than waste." (p.36). Unus categorises these values as primary values, which lead to some secondary values that relates to "the process and content of scientific and technological development" (1985, p.42). These secondary values are as mentioned by Ali Kettani (1984), the five values being universalism and unity of the *ummah* (Muslim society), tolerance, respect for knowledge i.e. science and scientists, freedom of movement of scientist, technologist and their products within the *ummah*, and the unity i.e. Islamic nature of both the ends and means of science (Kettani, 1984; Unus, 1985). All these values are seen as principles that are to be adhered to by Muslims in their endeavours of developing science and technology, as shown in the table below:

Table 2.1 : Primary and Secondary Values for the Development of Science

Primary / Core Values (by Sardar): *tawḥīd* (unity) *khalīfah* (trusteeship) *'ibādah* (worship) *'ilm* (knowledge) *ḥalāl* (praiseworthy) v *ḥarām* (blameworthy) *'adl* (social justice) v *ẓulm* (tyranny) *istiṣlaḥ* (public interest) v *dhaya'* (waste)
Secondary Values (by Kettani and Unus): • universalism and unity of the *ummah* • respect for knowledge • freedom of movement • unity i.e. Islamic nature of both the ends and means

(Adapted from Sardar, 1982; Kettani, 1984; Unus 1985)

Khalijah Mohd Salleh (1985), in discussing Islamic values for development based on science and technology, associated values with the goals, the principles and the standards that the Muslims need to follow prior to any action. Goals are those that which to be achieved in development, like conservation and sustainability of what has been created in nature by Allah. Principles are based on what is beneficial (*ḥalāl*) or harmful (*ḥarām*) for the individual, the society and the environment. Based on the goals and principles, standards are established to determine whether what is being done is *ḥalāl* or *ḥarām*. She mentions of three basic standards: goodness (improvements for man and society without effecting nature), beauty (being in harmony with the nature of man and the laws of nature as determined by Allah) and truth (in harmony with the laws of Allah). These standards are seen as the manifestation of *Tawḥīd*, the fundamental belief in one God that is Allah. She reiterates the importance of *Tawḥīd* in a later work (Khalijah, 2004) as the paradigm for an Islamic solution in addressing issues of science and technology development in Malaysia. Her basic standards are mention below:

Table 2.2 : Basic Standards for Science and Technology Development

Goodness (improvements for man and society without effecting nature)
Beauty (being in harmony with the nature of man and the laws of nature as determined by Allah)
Truth (in harmony with the laws of Allah)

(Source: Khalijah, 1985)

Shaharir Mohd Zain (1992) mentioned some Islamic concepts that are related to development of science and technology in light of Malaysia's long-term development plan. They are *īmān* (Islamic belief), *'ilm* (knowledge), *jihād* (struggle, striving and putting a great effort for something), *taqwa* (God fearing), righteous deeds and *'ibādah* (worship). These concepts according to this researcher can be seen as foundations for values or values in their own right, summarised in the following table:

Table 2.3 : Islamic Concepts Related to Science and Technology Development

Īmān (Islamic belief)
'Ilm (knowledge)
Jihād (struggle, striving and putting a great effort for something)
Taqwa (God fearing)
Righteous deeds
'Ibādah (worship)

(Source: Shaharir, 1992)

Regarding the points mentioned above, regardless of whether they are seen as values, principles, standards or concepts, they are all grounded in fundamentals of Islam, which are discussed after this. These fundamentals are mentioned here as beginning with the basic belief of Islamic monotheism called *Tawḥīd* as the foundation of all that is Islam, including Islamic values. From this comes the *Sharī'ah*, the Islamic system that is normally perceived as laws that guide human actions. The *Sharī'ah* is positioned as the entity that brings about the actualisation of Islamic values through the attainment of objectives of the *Sharī'ah*. By presenting these fundamentals, a grounded understanding of Islamic values is rendered for the purpose of this study.

2.3 *Tawḥīd* (Islamic Belief) and the Position of Man as Foundations of Values in Islam

2.3.1 Meaning of *Tawḥīd*

The word *tawḥīd* means unification or asserting oneness, and comes from the verb *waḥḥada* meaning to unite (Bilal Philips, 1989/2003). The word *waḥid* means one, of which all these three words are of the same root letters (*w-ḥ-d*). *Tawḥīd* when referring to Allah means that God is One, "...without partner in His dominion and His actions....without similitude in His essence and attributes...without rival in His divinity and in worship..." (p.1)

Al Fārūqī (1992) describes *Tawḥīd* as “the conviction and witnessing that “there is no god but God”...[which] carries the greatest and richest meanings in the whole of Islam” (p.9), in which “all the diversity, wealth and history, culture and learning, wisdom and civilisation of Islam is compressed in this shortest of sentences – *lā ilāha illā Allāh* (There is no god but God). *Al Tawḥīd* is a general view of reality, of truth, of the world, of space and time, of human history and destiny” (p.10) and “occupies the central position in every Muslim, place, every Muslim action, every Muslim thought” (p.1). It is the essence, the first determining principle of Islam, Islamic culture and Islamic civilisation. In short, everything Islamic begins with *Tawḥīd*.

Therefore, everything that is Islam is based upon *Tawḥīd*, the belief that there is only one God, Allah as the Creator and Sustainer of all and everything that exist in this world. This is the message that all the Prophets, ever since Adam as the first man, preach to humanity. This is enshrined in several verses of the *Qurān*, for example 112:1-4, 2:163 and 2:255. Allah as the sole God means He is the sole Creator of man and all other creations on earth. It also means that He is the sole provider of guidance for life or as the Lawgiver for all mankind. Thus He is the sole target for obedience. Some verses of the *Qurān* that mentions this are 6:1-2, 1:1-7 and 45:18.

2.3.2 Man as Servant and *Khalīfah*

As a creation of God, man is given two responsibilities. These responsibilities are the purpose of his creation. The first purpose is to be a servant to God, to obey and worship him as the Almighty Creator. This is clearly stated in the verse 51:56 from the *Qurān.* Servitude towards God is the purpose for man's existence and marks the beginning of

ethics and values in his actions (Al Fārūqī, 1992). It is also the beginning for the second purpose of man's creation.

The second purpose of man's creation is to be His *khalīfah*, God's envoy, representative, His vicegerent on earth. This in actual sense is an extension to man's position as God's servant. Al Attas (2001) states: "...just as every Muslim is a *khalīfah* of God on earth, so is every Muslim also His slave, His *'abd*, striving by himself to perfect his service and devotion, his *'ibādah*, in the manner approved by God, his Absolute Master." (p.56). Thus, this purpose is the duty for man as individuals and society of the human race to live in accordance with the guidance given to him by God. Man is to live his life together with other fellow men, prosper the earth and take care of it as in the way Allah has taught him through the Prophets. The way is Islam, and the performance of this duty is also an obedience to Him. Man's role as God's *khalīfah* answers the ever profound question on the purpose of life, 'why are we brought here on this earth?'. Amongst the creations, man is chosen to bear the trust as God's *khalīfah.* As His *khalīfah*, man establishes the relationship with his Creator and as well as other creations (fellow men, creatures, plants, the environment etc.) based on the belief of *Tawḥīd*. The creation of man as His *khalīfah* is mentioned in verses 2:30, 6:165, 7:10 from the *Qurān.* This verses serves as a reminder for man in carrying out his duties in this world and not forget his responsibilities. As the *khalīfah*, man is responsible for the well-being of not only himself, but also of others by promoting what is good and preventing wrongdoings as a form of manifestation of his belief, as mentioned in verse 3:110.

As a society, the role is to populate and develop the earth, and for this, Allah has created the heavens and the earth, and all the other creations for man to make use of in a proper and just way. This is mentioned in several verses of the *Qurān*, for example 45:13, 11:

61, 14:32-34, 44:38-39. With these verses, man is also reminded that in developing his life on earth, man will be prone to forget Allah and all that He has created for man. Therefore, man should be aware of this in carrying put his duties as the *khalīfah*. Attia, (2001/2007) mentions that for today's society, among the duties are environmental protection, fighting crime, agricultural, industrial and service-related development and scientific research. For this, we can include as well technology and ICT development.

As God's servant and *khalīfah*, man wishes for nothing except submission to God and seeking His approval for what he does, as mentioned in verse 6:162 . This is the will of Allah for mankind to realise their position as His creation with a duty bestowed upon them. This duty and responsibility is termed *taklīf*. Al Fārūqī (1992) describes *taklīf* as "the basis of man's humanity, its meaning and content" (p.62) For this, Allah does not leave man to do as he likes but has provided the divine law, the *Sharī'ah*, through the revelation of the *Qurān* and the message brought by the Prophets, as the guide for man in living all aspects of his temporal life. For this, reference to verse 57:25 and 23:71 is made that states the provision of this guidance to man in order for them to know right from wrong, truth from falsehood. Man is also reminded here that the guidance may not be in conformity with their desires in order to prevent chaos and injustice in this world, but not many heed to this reminder. By adhering to the *Sharī'ah* and fulfilling its purposes (*Maqāṣid al-Sharī'ah*), man is actually fulfilling the purpose of his creation as God's servant and vicegerents on earth (Attia 2001/2007). Attia mentions that the *Maqāṣid al-Sharī'ah* "...are embodied in the worship of God, [with man] acting as His vicegerents on earth, and populating and developing the earth through faith and its requirements"(p. 105). This is reflected in the verses 23:115 and 44:38-39. Just as man is created with a purpose, the other creations are created for the purpose to be benefited by man is the manner guided by the *Sharī'ah* and its *Maqāṣid*.

2.3.3 *Tawḥīd* and the development of science and technology

Tawḥīd is the essence that gives Islamic civilisation its identity, as compared to other civilisations. It brings together various elements of civilisation and transforms their character into one that places service and obedience to God at the highest pinnacle. This transformation not only involves the form of the elements but more significantly their function which makes them pertinent to the essence of Islamic civilisation (Al Fārūqī, 1992).

Tawḥīd gives direction and purpose to all matters of life, including activities of development, whether physical development or, more centrally, human development (Ramli, 2003; Nik Mustapha, 2007). *Tawḥīd* is thus seen as a paradigm for development, whereby man will perform the transformation mentioned above to all that is around him and not create mischief or destruction on earth through his actions. What God has created for him are resources to be used wisely in his efforts to build and prosper this earth. All this signifies man's commitment to the paradigm in his actions. (Alhabshi, 1988).

In this sense, *Tawḥīd* is seen as the "all-embracing value" from which man will perform his duty as the *khalīfah* in all his actions, including scientific and technological activities. The paradigm of *Tawḥīd* promotes God-consciousness and instills both social as well as spiritual accountability for those involved in the development of science and technology. It also creates a harmony between the means and ends related to such activities (Sardar, 1984).

Khalijah (2004) mentions of *Tawḥīd* as the basis to address issues of science and technology development among Muslims in facing economic, political, socio-cultural challenges as a result of globalisation. It creates a balance between physical, material and technical issues with spiritual and sociocultural concerns. This is the basic connection between science and technology with Islam. As God's servants and *khalīfah*, those involved in the development of science and technology are to adhere to the guidance given by Allah in the *Sharī'ah* so that whatever that emerges from the development will bring one closer to Allah.

Ismawi Zen (2002) had emphasised the need for the 'tawhidic' paradigm to the areas of environmental design, architecture and urban planning, whereby activities of those nature are to be manifestations of man's devotion to God, and cities are built to become "a place where man is expected to function as a servant of God in establishing goodness" (p.39).

For the case of Muslim ICT developers, they too need to play their role as the *khalīfah*, whereby they are responsible to place the tawhidic paradigm as the first-rate choice in ICT development for humankind (Tengku Mohd Azzman Shariffadeen, 1998). This researcher, in looking at the position of man in ICT from an Islamic perspective, mentions that man should make use of ICT as a means for fulfilling his duty as servant and *khalīfah*, while keeping in mind that this should be done in ways that are in accordance with the values of Islam (Aznan Zuhid & Amran, 2006). The Islamic values are related to *Sharī'ah* which is mentioned in the following section.

2.4 *Sharī'ah* (Islamic Law) as the Source of Value

2.4.1 Meaning of *Sharī'ah*

Sharī'ah literally means beginning, source of flowing water for drinking, clear path or way, straight path to be followed, while its root verb *sha-ra-'a* gives the meaning to explain, to make clear, to show the way, to establish (Al-Ashqar, 1982; Zaydan, 1985; Al-Qaradawi, 1990; Mohamad Akram, 2006). Variations of the root word appear in the *Qurān* five times (Abdul Baqi, 1992). The word *sharī'ah* per se appears in verse 45:18. Other verses that have variations of its root word related to the technical meaning of *Sharī'ah* are 5:48, 42:13 and 42:21. The other verse (7:163) mentions about the non-observance of the Sabbath by the Jews.

Technically, *Sharī'ah* refers to what that has been explained by Allah to His servants about *al-dīn* (the way of Islam) in terms of the different commandments concerning belief (*i'tiqād*), moral and ethics (*akhlāq*) and actions (*'amal*) (Al-Ashqar, 1982; Zaydan, 1985; Al-Qaradawi, 1990). Essentially, *sharī'ah* and *dīn* are considered synonymous, with *sharī'ah* also refers to the rules that has been established by Allah through revelation to Prophet Muhammad, either in the form of the *Qurān* or the *Sunnah* of the Prophet, i.e. his sayings or actions or approvals (Zaydan, 1985). Mohamad Akram (2006) explains the *Sharī'ah* as "the sum total of Islamic teachings and system, which was revealed to Prophet Muhammad recorded in the *Qurān* as well as deducible from the Prophet's divinely guided lifestyle called the *Sunnah*" (p.3). The relation between the literal and technical meaning is apparent when the *Sharī'ah* is seen as the clear and straight path coming from Allah and established by Him for man's complete individual and social sustenance just like pure and clear drinking water would nourish the body (Al-Ashqar, 1982).

Sharī'ah is normally translated as Islamic law. However in its true sense, it is not the same as 'law' as in the usual understanding of the term "...as it contains a comprehensive set of dogmas, legal and ethical doctrines" (Mohamad Akram, 2006, p.3). Ziauddin Sardar, as mentioned in Asyraf Wajdi & Nurdianawati Irwani (2007), defines *Sharī'ah* as "a system of ethics and values covering all aspects of life (e.g. personal, social, political, economic and intellectual)".They continue to elaborate that *Sharī'ah* "reflects the holistic view of Islam, which is a complete and integrated code of life encompassing all aspects of life, be they individual or social, both in this world and the Hereafter" (Asyraf Wajdi & Nurdianawati Irwani, 2007, p. 30). Within this study, at instances when *Sharī'ah* is mentioned as Islamic Law, they would refer to *Sharī'ah* as defined in this section and not 'law', as described previously by Mohamad Akram.

Sharī'ah is provided to man in the message brought by Prophet Muhammad for all mankind as the ultimate guidance from God as mentioned in verse 5:15-16. *Sharī'ah* as the guidance from Allah not only supersedes all other forms of teachings that existed before it, but also any other teachings that may come after it. This can be understood when looking at the characteristics of the *Sharī'ah.*

2.4.2 Characteristics of the *Sharī'ah*

Contemporary scholars have outlined several characteristics of the *Sharī'ah* that portrays the nature of God's guidance given to man. These characteristics are based on what is mentioned in the *Qurān* that shows distinctive features of God's message that is brought to practical existence in the form of the *Sharī'ah.* The major characteristics are described as follow:

Table 2.4 : Major Characteristics of the *Sharī'ah*

Characteristics	Example of verses from the *Qurān*
Rabbāniyyah (Divine origin)	67:14, 8:71, 33:36
'Ālamiyyah (Universal)	7:158, 34:28, 25:1, 33:40, 4:1, 49:13
Shumūliyyah (Comprehensive) with Balance between the Material and Spiritual	6:38, 16:89, 4:58, 5:8, 28:77, 62:10
Akhlāqiyyah (Ethics)	6:151, 17:32, 24:30, 24:31

2.4.2.1 *Rabbāniyyah* (Divine origin)

This is the ultimate characteristic which is the basis for other all characteristics (Al-Ashqar, 1982; Ulwan, 1984; Zaydan, 1985; Attia, 1988; Al-Qaradawi, 1990). The guidance of the *Sharī'ah* and rules that emerge from it are of divine origin, unlike other conventional principles, rules or values practised by man. The source of the *Sharī'ah* is from Allah, the creator of man and all other creations. As the sole Creator, He possesses the total knowledge of man's needs and requirements to live on this earth. Thus, He provides the guidance on this matter for man in the form of the *Sharī'ah* and it is plainly logical for man to heed to this guidance, given to him by God that has created him and all the other things that he needs. Since the *Sharī'ah* comes from God, it is free from any deficiencies or defects as it would be a sign of weakness if God were to provide a guidance that is inaccurate and unsuitable for man to follow.

2.4.2.2 *'Ālamiyyah* (Universal)

The message of Islam brought by Prophet Muhammad is for all mankind everywhere and for all times (Al-Ashqar,1982; Ulwan, 1984; Zaydan, 1985; Attia, 1988; Al-Qaradawi, 1990). It is the last revelation from Allah for man to embrace until the end of time. This characteristic is also related to the creation of man from a single soul and the

brotherhood of mankind as the basis for universality of the *Sharī'ah*, of which constitutes servitude to God and obedience to His guidance as the reason for man existence (Al-Ashqar, 1982; Al-Qaradawi, 1990). Therefore, the *Sharī'ah*, its aims and values are for all humanity. This establishes the universal position of Islam and its teachings.

2.4.2.3 *Shumūliyyah* (Comprehensive) with Balance between the Material and Spiritual

Guidance of the *Sharī'ah* covers all aspects of human life, since it comes from Allah, the Creator of man (Al-Ashqar, 1982; Ulwan, 1984; Al-Qaradawi, 1990). Affairs of the material, physical, spiritual, intellectual, individual, social and all that constitutes man's life at all times are all included, whether the guidance is in the form of detail rules or general principles. Examples of detail rules in *Sharī'ah* include matters related to marriage, inheritance, prohibition of usury, and punishments for theft, adultery and murder. An example for general principles is the principle of justice (*al-'adālah*) in human relations which is applicable in various situations (Zaydan, 1985) as stated in verses 4:58 and 5:8 of the *Qurān*. The comprehensiveness of the *Sharī'ah* also means that it does not separate between the material and spiritual aspects of human life (Ulwan, 1984; Attia, 1988), rather it includes both and considers the two as complementing each other and as part of a single 'unit' that is the life of man. Man is asked to seek their livelihood and wealth without forgetting Allah and His guidance after which man should be thankful to Him for what He has given to them.

2.4.2.4 *Akhlāqiyyah* (Ethics)

The *Sharī'ah* strives as realising exemplary character in human life, therefore, it emphasizes on the preservation of morality and ethical values in all aspects (Al-Ashqar,

1982; Ulwan, 1984). This is seen especially since the *Sharī'ah* focuses on *taklīf*, that is the duties and responsibilities of man as God's servant and *khalīfah* (Al-Qaradawi, 1990). In other words, focus is on man's actions. For this purpose, the *Sharī'ah* makes matters of ethics as rules that are to be adhered to. For example, verse 6:151 mentions some of these ethical rules :

Table 2.5 : Rules based on verse 6:151 of the *Qurān*

Not to associate any thing as another god other than Allah
Being good to ones parents
Not to kill one's child out of fear of poverty
No to come close to performing shameful deeds, either openly or in secrecy
Not to take life except in ways permitted by law

Another example is the case of adultery. In preventing the vices of adultery and other vices related to it, Islam prohibits Muslims from being involved in it and anything that may lead to it as a way of preserving good behaviour and ethics. This involves preserving one's modesty in appearance and behaviour.

As seen from these major characteristics, the *Sharī'ah* aims for the good of mankind in all aspects of life. This is further understood when looking a the purposes and objectives of the *Sharī'ah.*

2.4.3 Aims of Sharī'ah

The general aim of the *Sharī'ah* is attaining what is good and beneficial (*jalb al-maṣlaḥah*) and rejecting what is evil and harmful harm (*dar'i al-mafsadah*). The sections that follow elaborates this aim by discussing what is *maṣlaḥah* and *Maqāṣid al-Sharī'ah*, that is the objectives and purposes of the *Sharī'ah*.

2.4.3.1 Meaning and Types of *Maṣlaḥah*

Maṣlaḥah in general refers to anything that in essence can be considered as something that is of interest, useful or beneficial for man and at the same time prevents harm from befalling upon him. The opposite of *maṣlaḥah* is called *mafsadah*. Al-Sharnabasi et. al. (2002) literally defines *maṣlaḥah* as anything that prevents harm and brings benefit, holding onto an understanding of looking at *maṣlaḥah* that gives priority to the prevention of harm over promoting benefit.

Imam Al-Shāṭibī (d.790AH/1388CE) defines *maṣlaḥah* in volume two of his famous work *Al-Muwāfaqāt.* Masud (1995) provides a translation of the definition, whereby Al-Shāṭibī states:

> "I mean by *maṣlaḥah* that which concerns the subsistence of human life, the completion of man's livelihood, and the acquisition of what his emotional and intellectual qualities require of him, in an absolute sense."

Ibn Ashur (d.1393AH/1973CE) defined *maṣlaḥah* as "the utmost righteousness and goodness (*ṣalāḥ)*", also as "an attribute of the act (*fi'l*)whereby righteousness and goodness (*ṣalāḥ*) takes place, that is to say utility and benefit (*naf'*), always or mostly for the public or individual" (translation). (1946/2001; 1946/2006).

Maṣlaḥah according to the *Sharī'ah* is one that develops goodness in this world for the sake of the eternal afterlife. The *maṣlaḥah* also caters for the development and advancement of human life (Mohd Noor, 1995). From the legal perspective of *Sharī'ah* (Islamic law), the scholars and jurist have stated that *maṣlaḥah* is of three types (e.g. Abu Zahrah 1958/1997; Al-Sharnabasi et. al. ,2002) as mentioned in the Table 2.6:

Table 2.6 : Types of *Maṣlaḥah*

Maṣlaḥah Mu'tabarah
Maṣlaḥah Mulghāh
Maṣlaḥah Mursalah

2.4.3.1.1 *Maṣlaḥah Mu'tabarah*.

It refers to the *maṣlaḥah* that is directly based on the Islamic legal sources or *al-dalīl al-shar'iyy* , i.e. the *Qurān* and *Sunnah* (traditions of Prophet Muhammad) as the revealed sources, or by *Ijmā'* (consensus of the jurist) or *Qiyās* (analogy) that are based on the sources of revelation. This type of *maṣlaḥah* is what the objectives and purposes of Islamic Law (*Maqāṣid al-Sharī'ah*) directly aims to achieve and preserve, which is described in the next section.

2.4.3.1.2 *Maṣlaḥah Mulghāh.*

It is the *maṣlaḥah* that is nullified by any *al-dalīl al-shar'iyy.* An example is the consumption of alcoholic energy drinks that, despite its benefits, is prohibited in Islam due to the excessive harm of consuming alcoholic drinks. Another example is on interest taking or *riba'* (usury) for the benefit of generating financial income which is prohibited due to its unfair elements, especially on the person bearing the burden of paying the interest.

2.4.3.3 *Maṣlaḥah Mursalah*.

In general it refers to a *maṣlaḥah* that meets the objectives and intents of Islamic law but there is no specific source or *dalīl* that either allows or prohibits it. Such *maṣlaḥah* would emerge due to the changing of times and living circumstances that create

situations that are different from before. Scholars would need to examine situations at hand to determine and justify whether a certain issue can be considered as a *maṣlaḥah*.

In doing so, some conditions have been identified by scholars like Imam Mālik bin Anas (d.179 AH/795 CE), Imam al-Ghāzalī (d.505 AH/1111 CE) and Imam al-Shāṭibī (d.709 AH/1388 C.E.) that needs to be fulfilled . It is noted here that although scholars from the Shāfi'i school like al-Ghāzalī, as well as from the Ḥanafi school do not accept what is said to be *maṣlaḥah mursalah* as a reference for legislation, it can be said that the concept of *maṣlaḥah* in general is accepted since these two schools consider *maṣlaḥah mursalah* as part of *qiyās.* For the Māliki and Ḥanbali schools, a *maṣlaḥah* can be accepted even though there is no specific *dalīl* on it as long as it fulfills certain conditions. These conditions are laid down to evaluate and determine any given situation whether it can be considered as a *maṣlaḥah* or not (Abu Zahrah, 1997/1958; Kamali, 1989; Masud, 1995; Al-Sharnabasi et. al., 2002). In sum, the conditions are as follows:

Table 2.7 : Conditions for Determining a *Maṣlaḥah*

The *maṣlaḥah* is an interest that is universal and general in nature, not for a specific or particular matter
The *maṣlaḥah* is an interest that is genuine and absolute, not one that is based on assumption or individual interests
The *maṣlaḥah* does not contradict with existing sources (i.e. *al-dalīl al-shar'iyy*), at the same time fulfills the *Maqāṣid al-Sharī'ah*
The *maṣlaḥah* is something that can be accepted by rational persons with a sound mind or *ma'qūl*
The *maṣlaḥah* alleviates common difficulties, i.e. without it man will face problems and difficulties

(Adapted from Abu Zahrah, 1997/1958; Kamali, 1989; Masud, 1995; Al-Sharnabasi et. al., 2002)

2.4.3.2 Determining *Maṣlaḥah* and *Mafsadah*

It is clear that the first and third *maṣlaḥah* are the ones that are accepted and rejected respectively in Islam. In preserving the *maṣlaḥah*, harmful destructive elements and mischief or *mafsadah* are at the same time prevented. Al-Ghāzalī mentioned in his work, *Al-Mustaṣfā min 'ilm al-uṣūl*, quoted in Masud (1995), that *maṣlaḥah* means the preservation of the *Maqāṣid al-Sharī'ah* and whatever that fails to preserve the *Maqāṣid al-Sharī'ah* is *mafsadah*, and the removal of *mafsadah* is also a *maṣlaḥah.* Rules of the *Sharī'ah* in categorising human actions, i.e. the rules of *ḥarām* (actions prohibited by God) and *makrūḥ* (actions discouraged by God) can be used to determine whether something is a *mafsadah* . This is according to Imam 'Izz al-Dīn bin 'Abd al-Salām (d.660 AH/1262 CE) in the first volume of his work *Qawā'id al-Aḥkām*, as quoted in Abu Zahrah (1997/1958). Whatever that is stated as *ḥarām* (e.g. murder, gambling, consuming alcohol, adultery etc.) has a higher negative degree that what is *makrūḥ* (e.g. appearing at congregational prayers or social gatherings with a bad odour). For new and contemporary issues, the view of Al-Ghāzalī mentioned above can be applied. Further discussion on this is mentioned in the following section on values. The understanding of *maṣlaḥah* and *Maqāṣid al-Sharī'ah* provide guidance, i.e. negative actions that goes against *maṣlaḥah* and *Maqāṣid al-Sharī'ah* can be considered as *mafsadah* in varying degrees depending on the particular issue at hand.

In this light, Ibn Ashur (1946/2001;1946/2006) provides five criteria according to which an action can be considered as a *maṣlaḥah* (benefit) or *mafsadah* (harm). The five criteria are translated as follows:

Table 2.8 : Ibn Ashur's Criteria on *Maṣlaḥah* and *Mafsadah*

The benefit or harm must be definite and regular
The benefit or harm must be so prevalent and evident that rational and wise people would readily acknowledge it, so that they are not challenged by its

(Table 2.8, continued) opposite when subjected to careful consideration
The characteristics of the action must be of a type that cannot be replaced with something else, either in creating a benefit or incurring harm
One of the two aspects of benefit and harm, though equivalent to its opposite, must be corroborated by something of its genus that makes it outweigh the other aspect
One of the two aspects of benefit and harm must be definite and certain, whereas the other is indefinite and uncertain

(Source : Ibn Ashur, 1946/2001;1946/2006)

The elaboration is as follows:

1. "The benefit or harm must be definite and regular". This means the benefit or harm is something that is clear, absolute and common. He gives examples of swimming in the cold sea on a hot day as a benefit and setting fire to agriculture crops for the sake of destroying them as a harm.
2. "The benefit or harm must be so prevalent and evident that rational and wise people would readily acknowledge it, so that they are not challenged by its opposite when subjected to careful consideration". He gives the example of rescuing a drowning person as a benefit despite the possible harm that the rescuer might suffer, like exhaustion or even illness. In other words, in the case of this example, the benefit is acceptable and outweighs the harm.
3. "The characteristics of the action must be of a type that cannot be replaced with something else, either in creating a benefit or incurring harm". The example given is regarding the consumption of intoxicants. The harms from it are obvious and irreversible, such as drunkenness, inability to think properly, wasting money and others. On the other hand, benefits one may get from it, like alleviating stress, can be achieved through other unharmful means. Therefore, consuming intoxicants is considered a harm.

4. “One of the two aspects of benefit and harm, though equivalent to its opposite, must be corroborated by something of its genus that makes it outweigh the other aspect”. Ibn Ashur gives the following example to explain this criterion:

   > “For example, fining a vandal the value of the property that he has intentionally destroyed produces both benefit for the owner of that property and harm for the vandal, and thus there is equivalence between them. However, the aspect of benefit is further supported by the notion of justice and equity, whose priority is acknowledged by every person of wisdom and sound reason”.

5. “One of the two aspects of benefit and harm must be definite and certain, whereas the other is indefinite and uncertain”. An example given is the harm resulting from bidding against another person in a sale. The harm is definite and real when the seller has already agreed to the price offered by the first buyer and other people are aware about the sellers acceptance. If a second buyer enters into the scene and bids for a different price, this would result in dissatisfaction and animosity amongst the parties involved. Therefore, any possible benefit that may emerge from bidding against others in this case is considered uncertain and ambiguous. On the other hand, if the seller is not inclined with the offer from the first buyer and no form of mutual agreement have been achieved, then the harm of bidding by a second buyer is considered indefinite and uncertain, whereas the benefit resulting from completing the sale is definite for the seller and the successful buyer. If bidding is not allowed in the second scenario, then it would result in a greater harm for the seller who may be reluctant to sell to the first buyer, as well as for other people who might be interested to purchase the item from the seller.

In relation to this criterion, 'Izz al-Dīn bin 'Abd al-Salām provides the following explanation in the first volume of his *Qawā'id al-Aḥkām*, under the heading 'A chapter for knowing what is the goods (*maṣāliḥ*) and evils (*mafāsid*) of both worlds', subtitle 'A rule for knowing what is good (*ṣāliḥ*) and what is evil (*fāsid*). This is quoted in Ibn Ashur (1946/2001;1946/2006). The translation of 'Izz al-Dīn's explanation is as follows:

> "The goods (*maṣāliḥ*) and evils (*mafāsid*) of this world and their means are known by necessity, experience, custom, and careful conjecture. If any of that is ambiguous, its meaning should be sought from its proper proofs. Anyone seeking to know how to distinguish between the *maṣāliḥ* and *mafāsid* and which outweighs the other, must submit it to the test of reason on the assumption that the *Sharī'ah* has not mentioned it. Let him then build the *aḥkām* on it; he will discover that almost none of them violates the rules of the *Sharī'ah* except the prescriptions and proscriptions that God imposed on His servants as merely devotional matters without revealing to them the relevant aspects of *maṣlaḥah* or *mafsadah*"

The position of *Sharī'ah* in explaining what becomes *maṣlaḥah* or *mafsadah* shows how Islamic law plays an important role in determining the values of human actions. It is clear that for any contemporary issue to be considered a *maṣlaḥah* for man, it should not fundamentally contradict with the *Sharī'ah*, and at the same time fulfill the *Maqāṣid al-Sharī'ah.*

2.4.4 *Maqāṣid al-Sharī'ah* (Purposes of Sharī'ah) and Values

Maqāṣid al-Sharī'ah refers to the objectives and purposes of which the *Sharī'ah* (Islamic law) aims to achieve and fulfill, based on the general objective of the *Sharī'ah* of attaining what is good and beneficial (*jalb al-maṣlaḥah*) and rejecting what is evil

and harmful (*dar'i al-mafsadah*). Scholars like Al-Ghāzalī in his *Al-Mustaṣfā min 'ilm al-uṣūl* and Al-Shāṭibī in his *Al-Muwāfaqāt* have identified three levels of the *Maqāṣid al-Sharī'ah*, as mentioned below (Ibn Ashur, 1946/2001; 1946/2006; Abu Zahrah, 1958/1997; Al-Sharnabasi et. al., 2002; Al-Raysuni, 1991/2006; Auda, 2008) :

Table 2.9 : Three Levels of the *Maqāṣid al-Sharī'ah*

Al-Ḍarūriyyāt - essentials, necessities
Al-Ḥājiyyāt - complementary needs or exigencies
Al-Tahsīniyyāt - enhancements, embellishments and luxuries

(Source : Ibn Ashur, 1946/2001; 1946/2006; Abu Zahrah, 1958/1997; Al-Sharnabasi et. al., 2002; Al-Raysuni, 1991/2006; Auda, 2008)

2.4.4.1 *Al-Ḍarūriyyāt*

These are the essentials, necessities, the indispensable and vital matters needed for the fulfillment of life in this world and the Hereafter. By preserving and safeguarding these matters from any form of corruption or decay, the *Sharī'ah* aims for the material and spiritual well being of humans, either individuals or the society as a whole. These essential matters are *dī'n* (religion as a way of life), *nafs* (human life/soul), *'aql* (mind/faculty of reason/intellect), *māl* (property/material wealth), *nasl* or *nasab* (progeny/lineage/offspring) and *'irḍ* (honour/dignity/chastity). For example, theft and robbery are prohibited in order to safeguard property, in addition to protect human lives in the case of armed robbery. Likewise, honour and progeny are preserved by prohibiting adultery. Protection of these essentials are strengthened by making these prohibitions punishable under the *Sharī'ah.*

2.4.4.2 *Al-Ḥājiyyāt*

The complementary needs or exigencies that can provide ease and comfort and at the same time remove hardship, sufferings and adversities that may be faced by humans. However, neglecting them will not result in overall disruption of normal life but may

affect its functioning. Their fulfillment are given second priority but nevertheless still important. An example is the provision for travelers to break fast during the day in the month of *Ramaḍan* instead of fasting until dusk. Announcement of marriage through a public reception is another example, whereby this will avoid any wrong perceptions by the public on the relation between the man and the woman. The need towards matters like these are considered as *Al-Ḥājiyyāt.*

2.4.4.3 *Al-Tahsīniyyāt*

The enhancements, embellishments and luxuries that are considered 'beautifiers' in life. Fulfilling them will lead to improvement and perfection in life, either individually or collectively while neglecting them, even though might not interrupt normal life, could lead to being unable to have a comfortable and enjoyable life. Good morals and manners in relations, and refined wealth and physical appearance are among the examples.

2.4.4.4 Contemporary Views on the Levels of the *Maqāṣid al-Sharī'ah*

These three levels of the *Maqāṣid al-Sharī'ah* portrays the levels of *maṣlaḥah* in human life. More contemporary scholars have sought to expand the scope of *Maqāṣid al-Sharī'ah*. Ibn Ashur had expounded that the *Maqāṣid al-Sharī'ah* should not only concern personal matters but also the well being of the society in order "to preserve the social order of the community and insure its healthy progress by promoting the well-being and righteousness (*ṣalāḥ*) of...the human species", which involves their intellect, their deeds, as well as whatever that is in this world that they live in that they make use of (1946/2001;1946/2006). Attia (2001/2007) includes in the scope of *ḍarūriyyāt* the individual, family, the *ummah* (Muslim society) and humanity at large. So, basically, the *Sharī'ah* aims for a comprehensive state of well-being and righteousness for man in this

world and leading to the Hereafter. Auda (2008) mentions views of contemporary scholars on this matter, which looks at expanding the purposes and objectives of the *Sharī'ah* to include other principles. For example Al-Qaradawi (1999) proposed some universal *maqāṣid* such as preserving true faith, maintaining human dignity and rights, calling people to worship God, purifying the soul, restoring moral values, building good families, treating women fairly, building a strong Islamic nation and calling for a cooperative world. Al-Alwani (2001) provides *maqāṣid* that can seen as more general, higher order and all-encompassing, which are *tawḥī'd* (believing in the oneness of God), *tazkiyyah* (purification of the soul) and '*umrān* (developing civilization on earth). Similarly, Kamali (2008) proposes economic development and strengthening of research and development efforts in technology and science to be added to the maqasid due to their significance in improving the present state of the Muslims. All these principles are in accordance with the general objective of the *Sharī'ah* and can be applied collectively with what the previous scholars have outlined. In sum, the *Maqāṣid* or purposes of the *Sharī'ah* plays an important role in guiding human affairs according to what the message of Islam wants for mankind. As mentioned by Al-Shāṭibī in his *Al-Muwāfaqāt*, as translated by Auda (2008, p.11), "...consideration of purposes is the default methodology in the area of worldly dealings (mu'amalaat)". The process of achieving the purposes or *Maqāṣid* entails one to adhere to certain values in his actions, in which these values exist as guidance originating from the *Sharī'ah.*

2.4.4.5 *Sharī'ah* and Values

In Islam, matters of ethics and values that guide human actions cannot be divorced from the *Sharī'ah* (Reinhart, 1983, Attia, 2001/2007; Osman, 2003; Sardar, 2003; Kamali, 2006). One of the reasons Al-Shāṭibī proposed that the *Maqāṣid* is ethical in nature, is to make people sensitive to the purposes of the *Sharī'ah* so that they would be motivated to

implement the *Sharī'ah* and practice its values (Kamali, 2009). Even in contemporary fields like bioethics, the *Sharī'ah* and its related aspects provide guidance for the actions of human beings, as mentioned by Bouzenita (2010). This is because any human action is to be guided by the *Sharī'ah*, be it in common daily matters like consumption of food, or in matters concerning scientific research and technological development.

The *Sharī'ah* manifests its guidance in the form of legal rules (*al-ḥukm al-shar'ī*) which are based on evidence from the Islamic legal sources or *al-dalīl al-shar'iyy* mentioned earlier. The rules are described as a "communication from the Lawgiver", i.e. God in demanding man "to do something or forbids him from doing something" or giving him "an option between the two" (Kamali, 1989). Thus, these rules are the values emanating from the *Sharī'ah* that guide actions of humans as God's servant entrusted with the duty to administer and prosper this world. Based on these rules, any human action is valued as either *wājib* (obligatory), *mandūb* (recommended) *mubāḥ* (permissible), *makrūh* (discouraged) or *ḥarām* (prohibited). The value of an action is ascribed to fundamentally achieve the objectives and purposes of the *Sharī'ah*, thus an action can be *wājib* because it is a requisite in achieving benefit or in preventing harm. Therefore, the *Maqāṣid al-Sharī'ah* is the point of reference for values in Islam. According to Al-Qaradawi (1996), the values of *wājib*, *mandūb*, and *mubāḥ* are considered types of *maṣlaḥah*, whereas *makrūh* and *ḥarām* are types of *mafsadah.* This highlights the main aim of *Sharī'ah* that is attaining what is good and beneficial (*jalb al-maṣlaḥah*) and rejecting what is evil and harmful (*dar'i al-mafsadah*) as a principle value for human actions. Thus, in relating the *al-ḥukm al-shar'ī* with the concept of values, *wājib*, *mandūb*, and *mubāḥ* are the states that are preferred to be attained and *makrūh* and *ḥarām* are states that are to be rejected and avoided. Osman (2003) mentions that these values of the *Sharī'ah* are relevant for contemporary applications of science and

technology from the Islamic perspective. In this light, these values are extendable to ICT and should be incorporated in ICT development. The values are mentioned below:

Table 2.10 : Islamic Values Based on the *Maqāṣid al-Sharī'ah*

Wājib (obligatory)
Mandūb (recommended)
Mubāḥ (permissible)
Makrūh (discouraged)
Ḥarām (prohibited)

Ascribing the value of any action requires careful and detailed studies into the Islamic legal sources that concerns that particular action. This is especially the case for contemporary issues related to science and technology which needs scholars of very high calibre (*mujtahidūn*) that are able to explain the Islamic legal sources pertaining to the issue at hand, following various procedures and meeting variety of conditions to finally come out with the ascribed rule (Bouzenita, 2010, p. 76). With regards to matters of ICT, it is not the intention of this research to go into such extent as to the numerous issues of ICT that can be studied in the light of the *Sharī'ah* such as privacy, e-commerce, cybercrimes and many others. Rather, as mentioned earlier, this study looks into placing the *Sharī'ah* as the source of values for ICT development, as per earlier definition, as an all encompassing concept of ICT.

Another point that needs to be mentioned is that, when referring to the objectives and purposes of the *Sharī'ah* in determining what is beneficial or harmful for ascribing the values to issues of scientific and technological concern, one should take into consideration the holistic social context related to the issue, thus being in line with the characteristic of the *Sharī'ah* mentioned earlier. This is to avoid the *Maqāṣid al-Sharī'ah* from being abused within a vacuum and in a utilitarian manner for the sake of justifying benefits or harms. In addition, understanding of the context will allow one to

properly understand any underlying matters that concerns the issue, given the fact that contemporary issues of science and technology have been developed within “a mainly secular capitalist model”, and any value consideration from an Islamic perspective has to bear in mind the influence of such a model on the issue being looked into (Bouzenita, 2010). This again will assist in determining the benefits or harms of a particular issue. Therefore, examining the context will allow the *Sharī'ah* to properly guide the provision of values for scientific and technological issues. The discussion on context and values is further examined in Chapter 3.

2.4.5 *Niyyah* (Intention) and *Sharī'ah*

In the process of achieving the *maqāṣid*, intention or *niyyah* would come into play. Hameed (2009) had mentioned *niyyah* as a general Islamic principle for computer and software professionals. Intention is the purpose of doing an action, it answers the question 'what is this action trying to achieve?' (Seebauer and Barry, 2001). According to Imam Al-Nawawi (d.676H/1278CE), *niyyah* means *qaṣd* (the root word of *maqāṣid*, meaning purpose or objective), which is the *'azīmah* (determination) of the *qalb* (literally means 'heart') (Al-Salih, 1970; Hashim, 2005).

Niyyah is an internal conviction of performing an action for the sake of Allah, a determination to realise the position as God's servant and *khalīfah*. This determination lies within the *qalb* which is “understood to be the locus of the 'mind' or 'rational faculty' (*'aql*)” (Powers, 2006). Reference is made to the word *al-nawā*, another noun derived from the same root word of *niyyah*, i.e. *n-w-y* (vocalised as *nawaya* or *nawā*). *Al-nawā* means pit or stone from fruits, particularly dates, giving the connotation of something that is internal, central or at the core (Powers, 2006). This word is mentioned in the *Qurān* in verse 6:95. *Niyyah* is not beyond the knowledge of Allah as He knows

all that is visible and hidden, thus the intentions of man is also within His knowledge, be it a pure intention or otherwise, and in despite of the overt action displayed, of this the *Qurān* has stated in verse 87:7.

Discussions on *niyyah* is commonly referred to the well known *ḥadith* (sayings of Prophet Muhammad pbuh., which is one form of his tradition or *Sunnah*) narrated by Imam Muhammad ibn Ismā'il Al-Bukāhri (d.256H/870CE) and Imam Muslim ibn al-Ḥajjaj (d.261H/875CE), two major scholars of *ḥadith.* This *ḥadith* was reported by 'Umar ibn Al-Khaṭṭāb, one of the main *ṣaḥābah* (companion) of Prophet Muhammad and the second caliph in Islam. The translation of the *ḥadith* is as follows (Ibrahim & Johnson-Davies,1976):

> Actions are but by intention and every man shall have but that which he intended. Thus he whose migration was for Allah and His Messenger, his migration was for Allah and His Messenger, and he whose migration was to achieve some worldly benefit or to take some woman in marriage, his migration was for that for which he migrated

This *ḥadith* was related by Imam Al-Bukāhri in his *Ṣaḥīḥ* under the book of *Bada'u Al-Waḥi*, chapter *Kaifa Bada'a Al-Waḥi.* Imam Muslim, also in his *Ṣaḥīḥ*, mentioned this *ḥadith* under the book of *Al-Imārah*, chapter *Innama Al-A'mālu Binniyyah,* naming the chapter after the *ḥadith* itself. Imam Al-Nawawi mentioned that Imam Al-Shafie, as well as other scholars, considers this *ḥadith* as explaining one third of Islam since endeavours of a person is either with what he says, performs or intends (Mustafa, 1989; Al-Shin, 2002). The migration mentioned in this *ḥadith* refers to the migration from Mecca to Medina that happened about thirteen years after Prophet Muhammad received the first revelation. Nevertheless *niyyah* in the *ḥadith* also includes other matters

including worldly matters because what the migrants intended included worldly matters, as mentioned in the *ḥadith* (Al-'Asqalāni, 1428/2002; Al-Shin, 2002).

From the *ḥadith*, it is understood that *niyyah* drives all actions of humans, it is the reason an actions exist and performed by man. *Niyyah* concerns pure and sincere feelings towards doing an action for the sake of Allah, submitting to Him by obeying His commands and adhering to His guidance that He has provided for man (Al-'Asqalāni, 1428/2002). Thus, a persons action is judged by his intention (Masud, 1995). It differentiates the actions of sincere believers (*al-mu'minīn al-mukhliṣīn*), and hypocrites (*al-munafiqīn*) who appear to be good and faithful but are actually the opposite (Al-Shin, 2002). In one's intentions, sincerity to Allah is a condition for an action to be accepted by Allah. Therefore scholars of Islam like Al-Shāṭibī and others agree that *niyyah* is needed for an action to be considered an act of worship and rewarded by Allah, provided the action is not one that is prohibited or discouraged by the *Sharī'ah* and goes against its *maqāṣid* (Al-Khin, 1985; Al-Muhsin, 1990; Masud, 1995; Hashim, 2005). This is a fundamental aspect in the concept of *niyyah*. For example, actions like eating and drinking and sleeping which are normally not considered as acts that can make one closer to Allah except if it is preceded by *niyyah* (Al-Shin, 2002). As stated by Al-Shāṭibī, having an intention makes actions of man an *'ibādah* (worship) even though it is a common action (*al-'ādāt*) (Salih, 1988) Salih also mentioned that Al-Fuḍail ibn 'Iyāḍ (d.187H/803CE) said : “an action is not accepted until it is pure and correct, pure means done for the sake of Allah, and correct means it it in line with the *Sharī'ah* and *Sunnah*”. So, man has to ensure that all his actions are done with the right and proper intention, including actions related to ICT development. Any action of ICT development should both be done with the right intention and done in the right way as guided by the *Sharī'ah.*

Actions that are accepted by Allah will be rewarded by Him accordingly. In fact, the *niyyah* itself would bring about rewards from Allah. This is mentioned in the following *ḥadith* also narrated by Imam Bukāhri and Imam Muslim in their *Ṣaḥīḥ*s. Imam Bukāhri relates it in the book of *Al-Riqāq* while Imam Muslim mentions it in the book of *Al-Īmān*. This *ḥadith* is reported by the *ṣaḥābah* Ibn 'Abbās whereby Prophet Muhammad had related the words of Allah in the *ḥadith*. A *ḥadith* of this kind, i.e. that has the words of Allah in it, is known as *ḥadith qudsi.* The translation is as follows (Ibrahim & Johnson-Davies,1976, p. 116):

> Allah has written down the good deeds and the bad ones. The He explained it [by saying that] he who has intended a good deed and has not done it, Allah writes it down with Himself as a full good deed, but if he has intended it and has done it, Allah writes down with Himself as from ten good deeds to seven hundred times, or many times over. But if he has intended a bad deed and has not done it, Allah writes it down with Himself as a full good deed, but if he has intended it and has done it, Allah writes down as one bad deed.

This *ḥadith* is related to verse 6:160 from the *Qurān* that mentions about those who do good shall be rewarded ten fold while those that do evil shall be punished only based on what he has done.

With regards to the *Qurān*, the verse 17: 84 touches on intention and actions. In the verse, the phrase *'alā shākilatihi* (according to his own disposition) means *alā niyyatihi* (according to his own intention), as according to several scholars like Al-Hasan Al-Baṣri and Qatādah (Al-'Asqalāni, 1428/2002). Based on the verse, every person would act based on his own intention, whether good or bad. Abdullah Yusuf Ali in explaining this

verse says: “If the wicked go their own ways, there is nothing to discourage us. It is their nature. We must seek and hold fast to true guidance” (p.804). In a way, this verse summarises the whole meaning of *niyyah*, in which actions are done based on one's intention whether pure or otherwise. However, those with pure and sincere intentions will act based on the guidance found in the *Sharī'ah*, and Allah will reward accordingly because all intentions are within His knowledge. With this, reference is made to verse 6:3 from the *Qurān* that describes Allah's knowledge of all that is apparent and all that is hidden. Abdullah Yusuf Ali explains this verse as follows:

> “It is folly to suppose that Allah only reigns in the heavens. He also reigns on earth. He knows all our secret thoughts and motives, and the real worth of all that is behind what we care to show. It is by our deeds that He judges us; for our deeds, whether good or evil, we shall get due recompense in due time.” (p.338).

Whatever that man intends and does on this world are all within the knowledge of Allah and He will reward man for his deeds. Therefore, *niyyah* indeed holds a significant position in Islam in driving the actions of humans, including that related to ICT as mentioned by Yousif (2001).

According to Al-Baiḍāwi (d.685/1286), *niyyah* is the awakwning of the *qalb* towards what is seen as in accordance to the purpose of attaining benefit and preventing harm (Al-Shin, 2002, p. 566). In other words, *niyyah* itself involves attaining benefit (*jalb al-maṣlaḥah*) as according to the *Sharī'ah* (Masud, 1995). Therefore, one who wishes to guide his actions according to the purposes of the *Sharī'ah* would consciously set his intention towards achieving them. This can be seen as a innate process or activity that aims for the realisation of the *Maqāṣid al-Sharī'ah* and consequently the ascription of values for the actions. As mentioned earlier that one of the meaning of *niyyah* is *qaṣd*

(plural : *maqāṣid*). Therefore, the process of *niyyah* signifies sincerity of the person to conduct his actions in obedience to Allah and in line with the guidelines found in the *Sharī'ah*, thus *niyyah* transforms any common action into a form of *'ibādah* or act of worship. This sincerity and determination towards fulfilling the will of Allah are the fruits of the *Tawḥīd* belief that is the foundational paradigm of the *Sharī'ah* and values in Islam. *Niyyah* becomes the internal process that initiates the operationalisation of *Maqāṣid al-Sharī'ah* and values in all human actions, including ICT development.

2.4.6 *Maqāṣid al-Sharī'ah* and ICT

In dealing with human activities, *Maqāṣid al-Sharī'ah* is the main consideration as mentioned by Al-Shāṭibī. With the prevalence of ICT in human's life today, it can be positioned as an important means (*wasā'il*) to fulfill the *maṣlaḥah*s and bring about the realisation of the *Maqāṣid*. ICT systems and software can be developed for addressing matters concerning the *ḍarūriyyāt*s. For example, in addressing matters of *dī'n* , information systems can be developed for the management of *zakāt* and *hajj*. Security systems are needed for either protecting financial information or bank vaults, which relates to *māl*. Likewise, database systems can be developed for keeping records of marriage and births, which concerns *'irḍ* and *nasab*. Another example is computer support systems for handling medical emergencies in hospitals that addresses the preservation of *nafs*. On matters of *ḥājiyyāt*, ICT can be used to assist in teaching young children about letters, numbers, colours, animals and other preschool topics, even though education at this level can still be preformed without ICT. An example of *tahsīniyyāt* would be creating attractive computer graphics and user-friendly interface for a website for *da'wah* purposes, i.e. disseminating information on Islam for the public. The position of ICT as means of achieving the *Maqāṣid* can either be direct means, e.g. security systems for bank vaults in protecting *māl*, or means for other means

(*wasā'il al-wasā'il*), e.g database systems for marriage records, whereby marriage is related to preserving *'irḍ* and *nasab.*

However, as a widely used technology, Muslims should not only see ICT as a mere tool that that is used to bring about the realisation of the different dimensions of the *Maqāṣid al-Sharī'ah*, but also take into consideration the *Maqāṣid* and values of the *Sharī'ah* in its overall development planning and process, in order to produce applications of ICT that are in accordance with the purposes of the *Sharī'ah* in terms of both the ends and the means. The feeling of God-consciousness, awareness of the *Maqāṣid*, and adherence to the Islamic values should be present within the activities of the ICT practitioners. For example, developing systems for managing information of *zakat* (tithe) transactions should not be funded by *ḥarām* sources like gambling. Likewise, the system analysts and programmers should perform duties with a feeling of sincerity and commitment to achieve high levels of excellence in order to produce a quality and beneficial system. Just as people of authority in Islamic legal agencies should understand clearly the objectives and purposes that they wish to achieve as guided by the *Sharī'ah* (Kamali, 2009), the same goes for Muslim professionals involved in the planning and implementation of ICT development.

When looking into contemporary matters like technology, a point that needs mentioning is the evaluation of various *maṣlaḥah* that may exist in the effort of achieving the purposes of the *Sharī'ah*. On this, Al-Qaradawi (1996) mentions the following priorities that ought to be adhered to when facing different possible kinds of *maṣlaḥah*, as shown in Table 2.11 :

Table 2.11 : Priorities in Evaluating a *Maṣlaḥah*

Priority for a *maṣlaḥah* that is ascertained in occurrence over a *maṣlaḥah* that is still unsure to happen
Priority for a *maṣlaḥah* that is major over a *maṣlaḥah* that is minor.
Priority for a *maṣlaḥah* of the public over a *maṣlaḥah* of an individual
Priority for a *maṣlaḥah* of the majority over a *maṣlaḥah* of the minority
Priority for a *maṣlaḥah* that is more permanent over a *maṣlaḥah* that is temporary
Priority for a *maṣlaḥah* that is more primary and fundamental over a *maṣlaḥah* that is secondary and peripheral
Priority for a strong *maṣlaḥah* of the future over a weaker *maṣlaḥah* of the present

(Source: Al-Qaradawi, 1996)

The priorities mentioned above can be applied in determining the position and value of a technology being developed and used, based on the *maṣlaḥah* addressed by the technology. For example, when developing information systems within constrains of time, money and other resources, the systems developer can investigate what kind of *maṣlaḥah* would the system address and determine the priorities based not only on purely economical or material reasons, but also including considerations of other aspects as guided by the *Maqāṣid al-Sharī'ah*.

Another point that can be mentioned is that one cannot totally rule out the possibility of harmful 'side effects' occurring in the process of achieving the intended benefits from technology, for example excessive pollution, loss of jobs and others. In addition, looking at the nature of technology, especially ICT, humans are in the position to develop and use it for both beneficial and harmful purposes, as can be seen in the many ways humans make use of ICT. This does not mean that neutrality of technology is suggested here, rather the responsibility of man in creating technology as well as using technology vis-à-vis values, puts man in a position to choose the direction of his relationship with technology and establishing its values. Therefore, a question to be

raised is what would be the status of ICT, and technology in general, that has the potential for both benefit and harm? Are they accepted or rejected? In a situation like this, the benefits and harms are compared and the prevailing majority determines the value. Any potential harm that might occur has to be contained and rectified. This is the method used by scholars in applying the *Sharī'ah* on matters of this nature (Al-Qaradawi, 1996), with reference is made to verse 2:219 from the *Qurān* which rules wine and gambling as prohibited (*ḥarām*) because the harm of the two outweighs any possible benefit gained from them.

With regards to technology in general, and ICT in particular, it is without doubt that they provide various benefits for the human life in varying degrees. ICT has important roles with regards to human development (Tengku Ibrahim, 1992), which is the focus of development in Islam as mentioned earlier. The technological aspect of ICT enables the communication of information, improving its availability and accessibility, thus improving its usefulness. In addition, the cognitive aspect of ICT which is represented by the information content itself assists humans in their thinking and analysis for learning and development purposes. Some benefits of ICT with regards to development of the society can be mentioned (Tengku Mohd Azzman Shariffadeen, 1992). First, it can improve the ability to gain knowledge and skills. Second, new forms of social and economic activities can be created, as well as improving the form of conventional operations. Third, direct forms of social participation and communication can be supported and expanded. Fourth, better products, services and processes can be developed with ICT facilitating in human creativity and innovation. Fifth, various human activities can be integrated to improve efficiency and effectiveness. The benefits of ICT is not only in the material or physical form, but can also be in the spiritual form as well (Tengku Mohd Azzman Shariffadeen, 1992). This can happen when technology

is developed and used based on the right fundamentals, facilitating man to carry out his duties as God's servant and *khalī'fah*. This is in addition to, as mentioned earlier, ICT being a tool that brings about the fulfillment of the *Maqāṣid al-Sharī'ah.* Therefore, ICT development, as like scientific and technological development in general, from the Islamic perspective aims for a balanced form of development involving both physical and spiritual aspects.

The prevalence and importance of ICT for the present times would give an idea of ICT being a need, an end that must be pursued, or in other words a *maṣlaḥah* in its own right and not just a means for fulfilling it. According to Kamali (2008), the *maṣlaḥah* addressed by the *maqāṣid* "is basically a rational construct that applies to customary, social, political, economic and cultural affairs and so forth" (p.4). Thus, he had proposed that scientific and technological development become part of the present day *Maqāṣid* due to its importance for the Muslims. This would also includes other contemporary matters like ICT development. On this issue, reference can be made to the well known maxim proposed by Islamic jurist whereby a means can become an end based on the principle of "those things without which obligations cannot be fulfilled are themselves obligatory", as mentioned in Attia (2007) and explained in Ibn Ashur (1946/2001;1946/2006). In this light, ICT can be considered as an end as long as it does not lose its connection with its original purpose, that is fulfilling the *Maqāṣid*. This condition is following what has been mentioned by Attia.

It is interesting to note here another argument by Attia that the categories of *ḍarūriyyāt*, *ḥājiyyāt* and *tahsīniyyāt* is actually applicable to the *wasā'il* (means) leading towards the fulfillment of the *maqāṣid*. On the other hand, these three categories normally related to the *maqāṣid* are considered as a "single unit" with three different levels in which the

ḍarūriyyāt "represents the minimum level of the *maqāṣid* concerned [whereby] ...Islamic law does not stop at seeking to ensure this minimum level; rather, it goes beyond this to seek its completion to every possible extent" (p.38). This means that a means can be considered as either an essential means, an exigent means or an enhance means in fulfilling a certain *maqṣid*. He explains this in the following example:

> Food is one of the means by virtue of which the *maqṣid* of preserving human life is fulfilled. Obtaining an amount of food which is sufficient to keep one alive, however unpalatable or unrefined it happens to be, and without which one would perish, belongs to the category of essentials. Obtaining food in a form which allows for a variety of dishes and balanced meals prepared in an appetising way belongs tot he category of exigencies. The category of enhancements is represented by the way in which the food is served, the observance of table etiquette, etc. And as for what goes beyond this by way of extravagance and surfeit, it is forbidden. (p.38-39)

In light of this argument, ICT as a means can be considered to belong to any of the three categories depending on which *Maqāṣid* it is addressing. Depending on the type of application, generally ICT stands a good chance to be placed in the higher categories of means since many critical aspects of human life nowadays rely on ICT for its proper performance and management.

It is noted here that it is not the purpose of this study to give a final decision on whether ICT is a mean or an end or both. The discussions above aims to point out the importance of ICT in relation to the *Sharī'ah* and its purposes. Therefore due attention should be given in ensuring the development of ICT is done with consideration of Islamic values and principles. Muslim scholars of the past gave importance to the Islamic nature of both the ends and means in scientific and technological development. This is one of the

reasons cited as a characteristic of the Islamic value system that contributed to the golden age of Islamic civilisation (Kettani, 1984), which any Muslim of today would like to see it happen again. Therefore, it can be said that ICT is generally acceptable and permissible in Islam. However due to its pervasive and multi-use nature, it would require some considerations as well as references to the *Sharī'ah* in term of benefits, harms and values with regards to the purpose of development and applications of ICT (Yousif, 2001). This again highlights the position of humans in ICT, especially their role in shaping and directing values for the technology guided by the *Sharī'ah* and its *Maqāṣid*.

2.5 Islamic Principles for ICT

Whether it is in the form of 'technological globalization onslaught' on a Muslim's country's social and economic development or the technological ease of spreading of vice such as false information and pornography, concerns have been raised regarding the potential for Muslims to be influenced by the values that can be found in the ICT applications and related technologies developed by non-Muslims (Yousif, 2001). So, Muslim ICT practitioners and developers are required to play their role in incorporating Islamic values in ICT development in order to provide an alternative nature of ICT development.

The value propositions made at the beginning of this chapter for science and technology development are also applicable for ICT development. Specifically, some works have been done regarding discussing certain issues in ICT from an Islamic perspective. A common example is work focused on commenting existing professional code of ethics with reference to the *Qurān* and *Sunnah*. For example Kheder (2001) and Al-A'ali (2008) looked at the code of ethics and professional practice for software engineers as

proposed by ACM and IEEE Computer Society. This researcher also did the similar, with added attention given to the the principle of public interest mentioned in the code (Aznan Zuhid and Elistina, 2005).

On a slightly similar note, Hameed (2009) has proposed some principles for software engineers mentioned in the table below :

Table 2.12 : General Principles for Software Engineers

Work as vicegerent of Allah
Spend your age in performing goodness and collect your wealth in ethically legal ways
No secret act and each act associate with intention
Performing duty is a worship
Understand and follow the standard ethics, specially Islamic ethics
Remember the Judgment day

(Source : Hameed, 2009)

In another work involving this researcher (Shuriye and Aznan Zuhid, 2008), code of ethics of several professional ICT-related bodies were surveyed and common principles were evaluated from an Islamic perspective. The common principles and their evaluation are as follows:

Table 2.13 : Common Principles of Professional ICT Codes of Ethics

Professionalism: striving for excellence in work and character
Self: overcoming self-interests, behaving righteously, improving ones knowledge and skills
Law: obedience to higher authorities and fulfilling promises
Public welfare and consciousness: giving priority to life over property, society over individual
Client and Employer: relation with other humans concerning trust
Judgment and Decision Making: having integrity in making decisions

(Source : Shuriye and Saidin, 2008)

The principles mentioned in these studies were outlined with direct reference to the verses of Qur'an and some *hadith*, but no form of framework specifically referring to fundamentals of Islam was presented.

Other issues related to ICT include privacy, for example works by Abdallah (2007) and Begg (n.d) which highlights the protection given to privacy in Islam, whether online or offline. With regards to specific mention of the *Sharī'ah* in a legal sense, it has been referred to in discussing issues of intellectual property (Jamar, 1992), e-commerce (Norazlina et.al., 2004), and cybercrime (Al-A'ali, 2007; Maghaireh, 2008). Discussions on these issues are more directly concerning their position from an Islamic legal standpoint with suggestions of values more on the implied side.

All these previous works focus their discussions on specific forms of principles or certain issues or practices in ICT. Unfortunately, there is no direct reference to *Sharī'ah* and the *Maqāṣid* as the established framework referred to by Muslim scholars in governing the values of human activities in terms of benefits and harm. Therefore there is a need to have a description on Islamic values for ICT development that depicts the connection with *Tawḥīd*, *Sharī'ah* and the *Maqāṣid*.

2.5.1 Bringing the Paradigm of *Tawḥīd* and Spirit of *Maqāṣid al-Sharī'ah* to ICT

The relation between technology, *Tawḥīd* and *Maqāṣid al-Sharī'ah* has been discussed in the previous sections. The degree of benefit or harm is very much dependent on the human being responsible in developing and using the technology. This is eventually related to the values that are embodied in the technology, and likewise values that will have effect on humans and the society. With a universal and all-encompassing technology like ICT, the role of the human being in this situation is increased manifold.

Thus, man is in need of a paradigm that sets the guidance for developing ICT with the required values. *Tawḥīd*, *Maqāṣid al-Sharī'ah* and values of the *Sharī'ah* are proposed as the strategy for a balanced form of human development (Alhabshi, 1992). Similarly, this are the entities that should be part of a framework for ICT in Islam since human beings are the only living elements in ICT development.

Mohd Nor and Siti Fatahiyah (2004) had proposed a principle of ethics based on *Tawḥīd* as the standard for resolving any inconsistencies in determining values for the application of ICT. According to them, ethics based on *Tawḥīd* should not require extensive supervision from other persons or professional bodies because it relates directly to the relation of the person with God. Therefore it is both inter-personal as well as intra-personal. They called this principle as 'tawhidic ethics' (*etika tawhidik*). 'Tawhidic ethics' is based on revelation from God as the permanent core principle. It is universal in nature and moderate to all other ethical principles that does not go against the revelation. The 'tawhidic ethics' is applied though 'juristic principles' that are the principles that formulate code of ethics that are applied in ICT. It can be seen that despite the terms used by them, they are clearly referring to *Tawḥīd* as the foundation and *Sharī'ah* as the guide for determining values in ICT.

Tengku Mohd Azzman Shariffadeen (2009), on the other hand, had proposed the five essentials of the *Maqāṣid al-Sharī'ah* as a guide for developing a knowledge society, based on the position of the *maqāṣid* as "a well-established framework for human development" (p.7). Even though no specific mention of values for ICT development was made, the fact that the *Maqāṣid al-Sharī'ah* was positioned as the guiding rules for developing a knowledge society implies value propositions based on the *maqāṣid* for ICT development, since ICT is the primary enabling technology for social

transformation towards the knowledge society. In an earlier work (1998), he has also stressed that man as God's *khalīfah* is responsible for establishing the paradigm of *tawḥīd* as the "superior alternative", especially in ICT development. His summary on the relation between belief, purpose and values can be seen in his statement: "Values flowing from our belief system render our plans and strategies with meaning and purpose that will generate even greater personal commitment and resolve" (2009, p. 9). It is interesting to note here that a similar expression is mentioned by the renowned scholar of Islam and science, Osman Bakar, when describing *Tawḥīd* as the source of scientific spirit and development in Islam. He states: "the scientific spirit of Muslim scientists and scholars flow, in fact, from their consciousness of *Tawḥīd*" (1991, p.2).

In comparison to another field in technology, i.e. biotechnology, Bouzenita (2010) mentions of a descriptive Islamic bioethical model which provides values for actions in biotechnology based on the five rules of the *sharī'ah* (*al-ḥukm al-shar'ī*). The model is essentially based on the revelation, the Qu'ran and Sunnah, as the source of reference for the values. Since ethics in Islam originates from the same sources, therefore abiding by these rules will bring about the realisation of ethical values.

Based on the point raised here and in the earlier sections, an initial conceptual framework is proposed by this researcher to represent the incorporation of Islamic values in ICT development as shown in Figure 2.1:

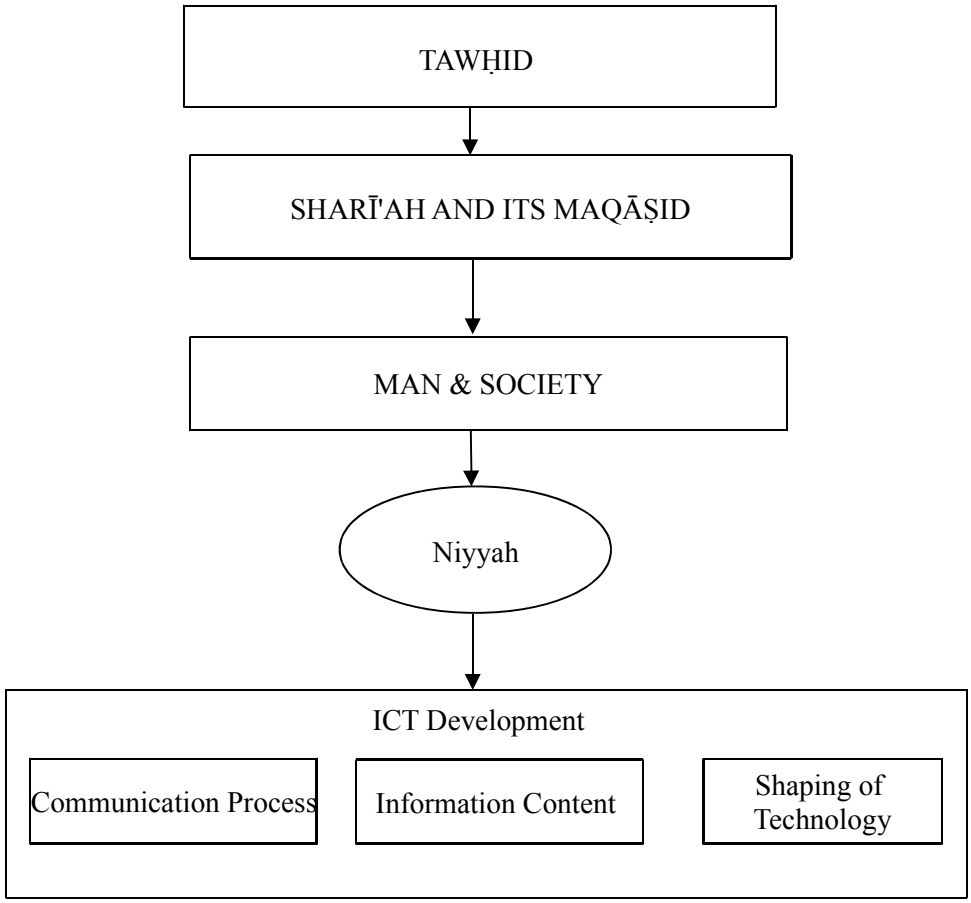

Figure 2.1 : Initial Framework for Islamic Values in ICT Development

Borrowing from the words of Osman Bakar and Tengku Mohd Azzman Shariffadeen, the values are depicted as flowing from *Tawḥīd* into the *Sharī'ah* as the guidance referred to by man. The values are manifested in the *Maqāṣid al-Sharī'ah* which, initiated by *niyyah* as an internal process, are operationalised by man in ICT development in the form of the *al-ḥukm al-shar'ī* (legal rules). *Tawḥīd* is positioned as the foundation from which values emerge. *Sharī'ah* is considered as the source that guide value propositions through the *Maqāṣid*, whereas *niyyah* is the process carried out by man in order to initiate value incorporation.

The Islamic values depicted in the framework can be seen as comprising of two parts. The first part consist of the conceptual values which are :

1. value of the realisation of *Tawḥīd*, i.e. establishing Allah as the one and only God
2. value of obedience as God's servant and *khalīfah* with duties and responsibilities to be undertaken
3. value of accepting *Sharī'ah* as the guidance by realising the *Maqāṣid al-Sharī'ah*

The second part involves instilling the conceptual values to actions according to *al-ḥukm al-shar'ī*, so any action of ICT development is either *wājib* (obligatory), *mandūb* (recommended) *mubāḥ* (permissible), *makrūh* (discouraged) or *ḥarām* (prohibited), therefore becoming operational values of ICT development activities. The parts and sub-parts mentioned here do not suggest division or separation, rather they are presented as such for the purpose of clarification and elaboration of what is meant as Islamic values. In essence, the parts are united and integrated with one another to form the holistic meaning of what is termed as 'Islamic values'. This meaning is the perspective adopted for this study. Table 2.14 summarises this:

Table 2.14 : Holistic Perspective of Islamic Values for ICT Development

Conceptual Values: – Value of the realisation of *Tawḥīd* – Value of obedience as God's servant and *khalīfah* – Value of accepting *Sharī'ah* as the guidance by realising the *Maqāṣid al-Sharī'ah*
Operational Values: – *wājib* (obligatory) – *mandūb* (recommended) – *mubāḥ* (permissible) – *makrūh* (discouraged) – *ḥarām* (prohibited)

On a practical level, the operational values would relate directly to the various human activities in ICT, identified in the framework as involving the communication process, information content and technology shaping. It is beyond the scope and capacity of this research to go into each and every detailed activity under these three categories. Rather, as mentioned in the previous chapter, the purpose of this study is to conceptually look at how the fundamental human activities of ICT can be related to Islam that will form a perspective which becomes a basis for understanding the incorporation of Islamic values in ICT development. This is achieved by examining the existing perspectives on these activities and propose avenues in which Islamic values can be practised.

2.6 Conclusion

This chapter looked into the fundamental principles related to Islamic values and their relation with ICT development. This relation is shown in a framework which depicts the flow of Islamic values into ICT. The incorporation of Islamic values into ICT is further investigated in the following chapters. As outlined in the objectives of this study, aspects of communication process, information content and technology shaping are discussed as avenues for incorporating Islamic values in ICT development. These are treated in the following three chapters, beginning with the communication process since this has a significant amount of existing Islamic-related works that can be looked into.

CHAPTER 3

THE COMMUNICATION PROCESS AND PERSPECTIVES ON ISLAMIC COMMUNICATION

3.1 Introduction

Communication is inseparable from humans. The conviction exists that people cannot help from not communicating since any form of behaviour or action will transmit some kind of meaning to those conscious of the behaviour or action (Watzlawick, Beavin, and Jackson, 1967). Communication is commonly regraded by scholars in the field as a process. The communication process has two types of orientation; sender-oriented and receiver-oriented. In sender-oriented communication, the sender sets a purpose for initiating the communication process and sending the message. In receiver-oriented communication, the receiver plays the active role in scanning and accepting messages that are made available by a more passive source. Here, the needs of the receiver drives the communication process (McQuail, 1984). Muslim scholars of communication have discussed the position and role of communication in Islam. References are made to the Islamic fundamental sources in order to develop understandings and guidance for Muslims when involving in the communication process. Since communication is part of ICT, what has been proposed by these scholars can be referred to in formulating an understanding of Islamic values for ICT development.

This chapter seeks to propose an approach to relate Islam with ICT through the communicative aspect of ICT. This is to be achieved by looking at the concept of *niyyah* in the communication process and the aims and values of Islamic communication. The chapter begins with reviewing the communication process by looking at the major communication models in order to establish communication as a

process. Models are used because they have the purpose of assisting in the conceptualization of the communication process (Campbell and Level, 1985). Since Islam is a central theme of this research, perspectives and efforts of Muslim communication scholars are presented and discussed in order to provide a representation of the existing discourses of Islamic communication. This includes the relation between communication and *da'wah* (propagation of Islam) and attempts at Islamic models in describing the communication process. The role of intention in the communication process is later highlighted and related to the Islamic concept of *niyyah*. Essentially, the aims and values of Islamic communication is described as direction for setting the intention on what is to be achieved and the values that goes along in achieving it. This is similarly applicable when the communication process takes place in the realm of ICT.

3.2 The Communication Process Models

The sender-channel-receiver model is often seen as the basic communication model. Any part of this model can be expanded or refined depending on which aspect of the communication process needs to be emphasized (Casstevens, 1979). Several communication models are mentioned below, some depicted in diagrams, in order to describe communication as a process which initially occurs with some form of purpose.

3.2.1 The Mathematical Model of Communication

The communication model by the mathematician and electrical engineer Claude E. Shannon, shown in Figure 3.1, can be considered the most influential in the field of communication. The model is mentioned in his renowned communication theory, "The Mathematical Theory of Communication", which looks at information in a statistical sense and based on signal transmission. His theory is also commonly referred to as information theory. (Severin and Tankard, 2001; Rogers and Valente, 1993). The theory

was first published in the July and October 1948 issues of the Bell System Technical Journal (Rogers and Valente, 1993). It was later published together with an article by Warren Weaver, also an engineer and mathematician, titled “Recent contributions to the Mathematical Theory of Communication” in 1949 to become the celebrated book similarly entitled “The Mathematical Theory of Communication” (Shannon and Weaver, 1949).

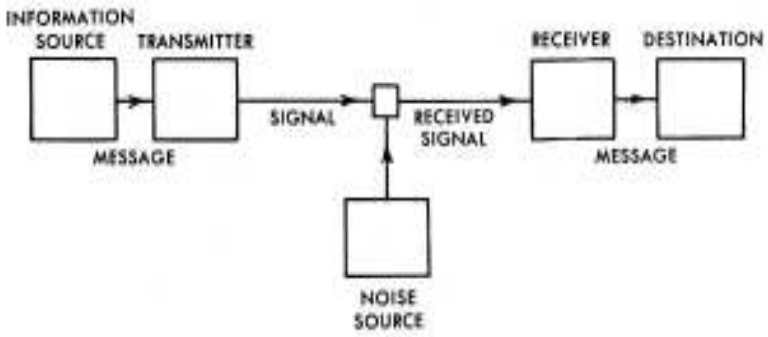

Figure 3.1 : The Mathematical Model of Communication.

Adapted from Shannon, Claude E., and Warren Weaver. (1949).

The act of communication can be seen in this model when Shannon describes the components of the model of a communication system as follows: “

1. An *information source* which produces a message or sequence of messages to be communicated to the receiving terminal.
2. A *transmitter* which operates on the message in some way to produce a signal suitable for transmission over a channel.
3. The *channel* is merely the medium used to transmit the signal from transmitter to receiver.

4. The *receiver* ordinarily performs the inverse operation of that done by the transmitter, reconstructing the message from the signal.
5. The *destination* is the person (or thing) for whom the message is intended." (p.33)

Shannon described that the theory addresses what he and Weaver had called the technical or engineering problem of communication, or Level A problem ("How accurately can the symbols of communication be transmitted?"). However, Weaver further stated that the theory is "helpful and suggestive" of the other two levels of the communication problem (p.24-25), i.e. Level B : "How precisely do the transmitted symbols convey the desired meaning?" (the semantic problem) and Level C : "How effectively does the received meaning affect conduct in the desired way?" (the effectiveness problem). Even though Shannon mentioned that the "...semantic aspects of communication are irrelevant to the engineering problem." (p.31), Weaver stated that "...this does not mean that the engineering aspects are necessarily irrelevant to the semantic aspects." (p.8). He also suggested that levels B and C are dependent of accurate signals that have been analysed at Level A, therefore "..the theory of Level A is, at least to a significant degree, also a theory of levels B and C." (p.6).

Shannon's theory is seen as marking the passage for society from an industrial one to become an information society (Krippendorff, 1988). It is without doubt a major contribution to the development of modern telecommunication and computer technology (Krippendorff, 1986; Severin and Tankard, 2001). However, in line with Weaver's proposition, the communication model is also seen applicable in other domains of communication and information processing, for example in a chain of command or within a single organism (Krippendorff, 1986).

Therefore it is not strange that the theory became the major driving force for other models of communication (Severin and Tankard, 2001) and provided a fundamental perspective for communication theory and research (Rogers and Valante, 1993). This is despite the warnings by Shannon on applying the theory to human communication (Shannon, 1949; Rogers and Valante, 1993). Subsequent communication models that emerged had shown the influence of his model when describing the communication process. A common example is the early model by Wilbur Schramm (1954) with components similar to Shannon's model. Schramm's other models later depict communication as interactive with messages sent and received by both the source and the destination. Another example is David K. Berlo's SMCR model (1960), which stands for sender-message-channel-receiver, whereby he added the concept of feedback from the receiver back to the sender. Here, in addition to the similarities, the modifications made to Shannon's original model is seen as moving away from the one-way act of communication to representing communication as a process (Rogers and Valente, 1993).

3.2.2 Schramm's Communication Model

Wilbur Scharmm (1954) views on communication bears some similarity with Shannon's model. However, Schramm does not differentiate between technical and non-technical communication. From a model similar to Shannon's, Schramm later came up with a model that considers the past experiences of the two parties in the communication process. Here, only the shared experience of both the source and destination (sender and receiver) is communicated. A consequent model by him proposes communication as a form of interaction that incorporates feedback in which both sides are encoding, sending, decoding, and interpreting messages continuously. The three models are shown in Figure 3.2:

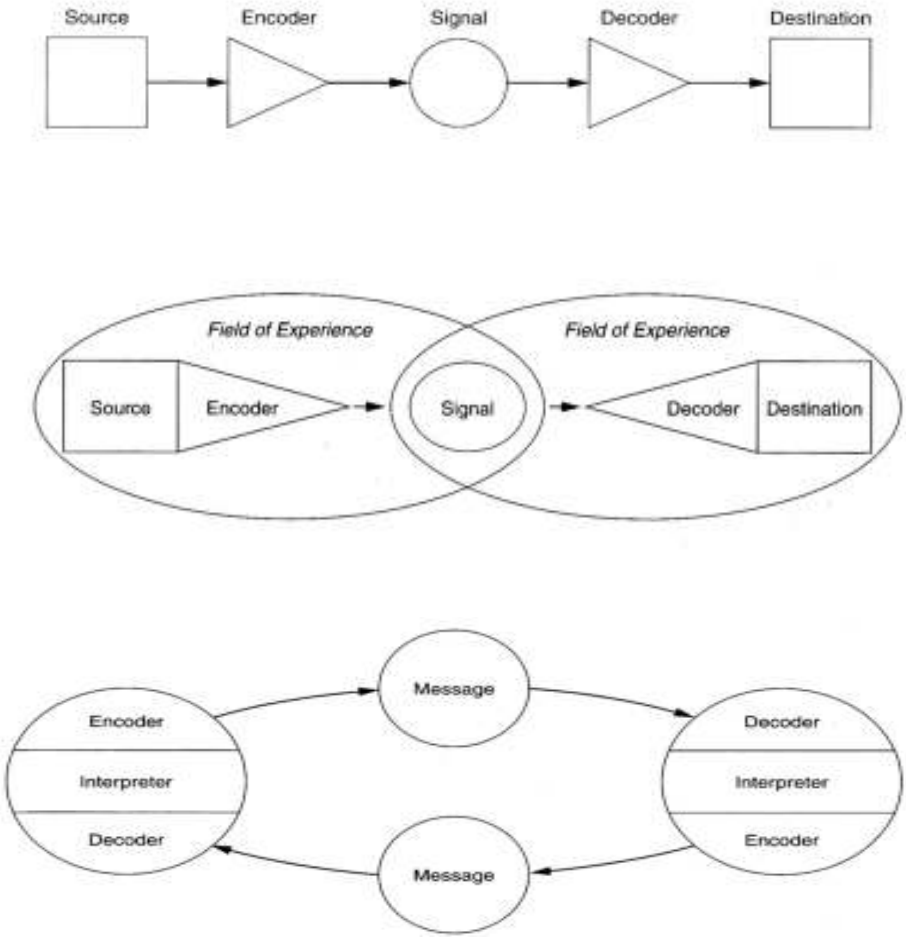

Figure 3.2 : Schramm's Communication Models

Adapted from Severin, Werner J. and James W. Tankard Jr. (2001)

3.2.3 The Transactional Model of Communication

Barnlund (1970) sees communication as a transaction between an individual and the many forms of 'cues' that exist with the aim of reducing uncertainty. Here, he uses the term cue instead of signs or symbols which are more common. These cues are either existing in the environment, perceived privately, or expressed verbally or non-verbally by the parties involved in the communication process.

According to him, by receiving all the available cues and assigning meaning to them, one would be able to construct a coherent understanding of his environment and the people in it. Communication involves the process of assigning meaning to the cues as well as the process of expressing meaning to others in the form of verbal and non-verbal cues. He places the assumption that these processes are closely related and interdependent.

3.2.4 The Helical Model of Communication

Dance (1970) proposed a model of communication different from the linear and circular models. He kept to the general notion that communication is a process but seeks to find a more precise and proper "geometrical-spatial visualization" of the communication process. For him, even though the circular model describes the effect of feedback on future communications, it also "suggests the communication comes back, full circle, to exactly the same point from which it started". To him, this is as erroneous understanding of the communication process and mind render inaccurate the anticipation of constraints on a communicative event. The linear model, on the other hand, highlights the forward and irreversible direction of a communicative action, especially in the verbal form. However, it defies the reality of being able to alter future communicative behaviour based on feedback received.

Based on these circumstances, Dance proposed the helix as alternative geometric figure to model the communication process. He admits that it may not be a perfect figure for that purpose, but he sees the helix as a more appropriate visualisation since, according to him, it "combines the desirable features of the straight line and of the circle while avoiding the weakness of either". Here, Dance considers the helix and the spiral as synonymous, as commonly practised in the scientific community, even though some

differentiate the two on the fact that a helix is three-dimensional whereas a spiral is two-dimensional.

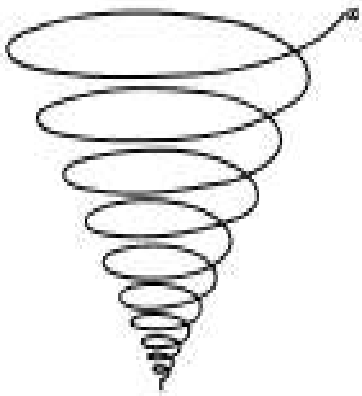

Figure 3.3 : The Helical Model of Communication

Adapted from Dance, Frank E.X., in Kenneth K. Sereno and C. David Mortensen (1970).

He explains the helical model of communication as follows: ".....the helix gives geometrical testimony to the concept that communication while moving forward is at the same moment coming back upon itself and being affected by its past behaviour, for the coming curve of the helix is fundamentally affected by the curve from which it emerges.....The communication process, like the helix, is constantly moving forward and yet is always to some degree dependent upon the past, which informs the present and the future. The helical communication model offers a flexible and useful geometrical image for considering the communication process". Here we can detect some connection with Schramm's idea of communication when previous behaviour and experience is related to present and future communications. He further suggests that an individual's communication helix begins to develop from the moment of his/her conception and continues to expand and progress while at the same time turning and

moving upon itself. Interaction with others is portrayed in the intertwining of two or more helices. Therefore, even though Dance's model is very much unique in its visual representation, it still describes communication as a process.

3.2.5 The Network Model

A different, and more recent, model of communication relates to Manuel Castell's description of the network society. Compared to linear models, the network model sees communication happening not as transmission beginning with the sender and ending at the receiver, but as exchanges between multiple nodes in the network with multiple roles. There is no clear differentiation between senders and receivers. This model is seen as closer to the interactive and convergent nature of present day communication that is highly dependent on ICT, in which the networking of communication processes takes place (Rantanen, 2005). Even so, the process of communication does take place, and hence would invite the involvement of purposeful actions, whether the nodes are individuals or institutions.

In sum, all these models are presented here to highlight the description of communication as a process. This is despite the different ways the models portray communication. Communication is a process that the parties involved take action in order for it to happen. Thus, as with any other form of action, communication is something that occurs with intention, which will be discussed in a later section. This is related to the concept of *niyyah* in Islam mentioned in the previous chapter. For this, present perspectives on Islamic communication will be looked into first.

3.3 Perspectives on Islamic Communication

3.3.1 Background

In Islam, communication, as with other aspects of life, has its roots in the belief in the oneness of God, i.e *Tawḥīd*. From here, the Islamic worldview of obedience to Allah and performance of duty as His *khalīfah* (vicegerent) in administering this world emerges in the practice of communication. In carrying out this practice, the fundamental Sources of Islam, the *Qurān* and *Sunnah*, through the *Sharī'ah*, provide the needed guidance, just as they have for matters concerning morality, politics, economy and society. Hence, communication is Islam shares the comprehensiveness of the Islamic message itself (Imam, 1985).

Islamic communication as an area of study have been defined by a number of scholars. A definition from Mohd Yusof Hussain's (1990) "Dua puluh lima soal jawab mengenai komunikasi Islam" (Twenty five questions and answers about Islamic communication), describes it as the process of conveying or exchanging messages and information using the principles and methods of communication found in the *Qurān* and *Sunnah*. This is a rather general definition, emphasizing on the principle and method of communication, and does not specifically mention the message or information conveyed to be Islamic in nature although it is implicitly understood.

An often quoted definition by Abdul Halim (1984), provides a more detailed description of Islamic communication. He defines it as providing the public in general, directly or indirectly, with the Islamic facts, based on the *Qurān* and the *Sunnah*, though the use of specific religious media or general media by persons with wide and deep background in the subject of the message being conveyed, with the aim of shaping a right opinion of the public that understands and realizes the religious facts, and is influenced by them in

its belief (*'Aqīdah*), worship (*'Ibādah*) and social relations (*Mu'amalah*). These three are considered the basic components of Islam. According to Imam (1983), Islamic communication is not confined to conveying religious information in the media but relates to all areas of communication. He sees that the Islamic perspective of communication developed from the law of social relations (*fiqh mu'amalāt*). Thus, Islamic communication can be understood to be all forms of communications as guided by the *Sharī'ah*. In his definition, Abdul Halim mentions the kind of message, channel, sender and effect in the communication process. The public is stated as the target of the communication, which gives the impression that other levels of communication (interpersonal and group) is not included. However, the view of other scholars, like Al-Shinqiti (1986) and Najib (1980), includes all of the levels in Islamic communication.

Essentially, Islamic communication involves communicative relations in Islam exist in two forms (Zulkiple, 2001); relation between man and God (*habl min Allah*) and relation between man and man (*habl min al-nās*). When God communicates with man, which is in the form of revelation (*waḥy*), it is considered a form of divine communication or divine-human interaction happening between God and the Prophets or chosen individuals in the past (Ibrahim, 2005). For the normal human, communication with God is in the form of prayers and supplication, which is difficult to detect the response through mere physical observation. In light of this, Islamic communication in this study focuses on the inter-human communication from an Islamic perspective, and the terms 'Islamic communication' and 'communication in Islam' would refer to the same idea.

3.3.2 Importance of Islamic Communication and its Technology

Communication is with no doubt a fundamental issue in Islam, as mentioned by Galander (2006) in discussing the position of communication in the Islamic context. He reiterates Islam as the message of God that has to be communicated and delivered. This is the duty of the Prophets, and the *Qurān* is filled with verses referring to the importance of communication for the call to Islam. In addition, the *Qurān*, as well as the *Sunnah* provide guidance in proper conduct and behavior when communicating and interacting with others. Therefore, he concludes that communication in Islam can be seen as both a tool and a goal.

Since such a place communication has in Islam, studies which focus on the Islamization of communication should be given prominence by Muslims. It is even more important in this age of high technologies being applied to and affecting the whole idea and process of human communication. Various modern technologies and artistic means are abused by greedy and unethical communicators which result in the widespread of immorality, depicting them in a delusive decorated manner (Al-Rakabi, 1979). Therefore, Muslim communicators should make use of these technologies in opposing such wrongdoings and upholding the truth, as long as the practice of the technologies is in line with Islamic teachings (Imam,1985). This would enable Muslims to increase the reach and impact with lesser time and effort (Al-Shinqiti, 1986; Hatim, 1985; Imam 1985). Hatim also mentions the need for Muslim communicators to prepare themselves with understandings of communication concepts mentioned in the *Qurān*, together with modern theories and approaches in communication. A common example previously given for audio and visual communication is satellite technology for television broadcast (Hatim 1985; Imam, 1985). Similarly, ICT would be the current technology to

be mastered. With this, the passion for righteousness in the Muslim communicator will be well supported and equipped for present day communication.

Given that most of these technologies, and the norms and values that would come with them, emanate from the West and other non-Muslims communities, Galander (2006) suggests that Muslims should reconsider and re-evaluate the present role of communication in their society, as a means to prepare themselves to face what he calls the "communication revolution" that would "reshape the world power structure and create a new global reality that threatens to undermine the existing social, economic and political order". His concern is shared by Zulkiple (2001), when he suggests that the study of communication be given a 'fresh' perspective, especially from the Islamic point of view. He sees that the approach of secular Western doctrine of communication has caused the weak to be manipulated by those with capital and power to control technology. With the help of technology, they are able to reach far and wide in this borderless world in pursuit of material gains and other forms of domination. This has resulted in a situation of dichotomy between the 'haves' and the 'have nots' or the 'winners' and the 'losers'. This dichotomy adds a perspective to the common understanding of digital divide that normally seem to concern unequal distribution of ICT infrastructure and access to information. The divide has the potential to become an avenue for social and cultural domination through the use of technology in communication. Therefore, for Muslims, it is not just a matter of religious fulfilment but also a matter of social and cultural survival, as when balance between material and spiritual development is emphasised as one of the characteristics of the *Sharī'ah* as mentioned in Chapter 2. This is important since many Muslim nations at present are in the position of being the victims of the Western doctrine of communication. Muslims should look into the Islamic teachings that promote justice and equality in the society.

The Islamic perspective of communication should take into consideration the position of technology, particularly ICT, in communication. This awareness of technology in communication is to be related to the present perspectives of Islamic communication, which is presented in the next section.

3.3.3 Observations on Present Perspectives of Islamic Communication

Islamization in general would involve knowing what needs to be 'isolated ' from (what is normally said to be as) the 'mainstream', what needs to be 'infused', what are acceptable, the alternatives that are acceptable and not acceptable and the reasons for it. The understanding of Islamic concepts of God, man, society, and cosmic order are prerequisites for Islamisation (Aslam, 2005). Similarly, any works on Islamisation of communication would also consider all these, which can be seen in the discussion that follows on the present perspectives and models of Islamic communication.

Two major reviews on the present perspectives of Islamic communication have been made, one by Galander (2006) and another earlier by Seini (1997) on the perspectives of what represents as Islamic communication and its related discussions. Galander looks at works both in Arabic and English while Seini focuses on literature in Arabic.

In his review of selected literature, Galander (2006) identifies three different perspectives held by scholars in describing the Islamization of communication. The first perspective uses Islamic text, verses from the *Qurān*, *hadith* and famous sayings and utterances of Caliphs to explain Islamic communication behaviour. This perspective gives a historical and social description of the role and position of communication in Islam. It focuses on identifying and examining communication behaviour, styles and techniques of the early Muslim communities. Communicative aspects of the *Qurān* and

the *hadith*, as well as communication activities in the form of oral expressions such as poetry and oration are also given attention.

The second perspective analyses and explains current and past Muslim communication institutions and organizations within a Western framework that adopts Western concepts and terms. Examples include those concerning broadcasting like radio and television, as well as cinema, theater, journalism, news and the press. Majority of the literature reviewed by Galander falls under this perspective. The communication institutions or organizations of a certain Muslim country or group of countries are studied using Western models or by applying Western criteria.

The third perspective identified by Galander involves offering a foundation for building, formulating and/or testing communication theories and models in the Muslim context. He labels studies of this kind as 'theory-oriented', which he came upon the least. However, those studies did not manage to provide definite Islamic theories or theoretical models, rather they applied Western concepts to certain situations and behaviour.

Galander made the following commentaries. Most of the literature reviewed was found to be descriptive and historical in nature. In the historical work, selected themes concerning communication in the Muslim society were investigated and analysed, for example the changes in communication in Muslim society from oral to written. Muslim communication institutions that were studied here were explained and analysed from the Western perspective.

Another point raised was that some of the literature in Arabic tends to discredit non-Islamic or Western communication. Communication is distinguished as only to what is mentioned in the *Qurān* and *Sunnah*, and all other methods, styles and techniques, for example looking at modern broadcasting among non-Muslims, are rejected. Such a view, however, does not reflect the regularity among Arabic communication scholars, as some do encourage the use of modern media and methods for Islamic communication.

Some of the literature made an effort to provide theoretical models for Islamic communication. However, they were more of reproductions of Western models, particularly the model of human communication with the sender, message, channel, and receiver identified from the Islamic viewpoint. Attempts to provide genuine communication models, like Imam (1986), demonstrated problems in definitions of fundamental concepts in the proposed ideas as well as establishment of the level of analysis. With regards to the theory of communication in particular, some of the literature that criticized the Western theories, for example Najib (1980), however, does not provide alternatives that amount to a proper theoretical alternative but rather more of an "Islamic style" of the theories.

In his review, Seini (1997) provided the following insights on what he sees as hurried attempts to Islamise communication. Some literature sees communication activities as focusing on divine communication as the centre of discussion, and sometimes the whole discussion. This is as if the universal view of communication as a human activity is destroyed, in which it should not be limited to members of a particular faith. There are some literature that puts the condition that Islamic communication is based on the fundamental sources of Islam, i.e. the divine sources, and that Islamic communication is only the divine revelation. What is understood from this is that the features of Islamic

communication (activities, methods and skill of communication) are by itself features of Islamic teachings, which in fact are features of the *Qurān* and *Sunnah*. He states that this contradicts with the fact that communication is a form of human activity that adhere to the conditions and rules that are both divine and non-divine. Seini goes to the extent in saying that 'Islamic communication' is something that is dreamt up by its proponents in the light of the understanding of the fundamental sources of Islam, without detail information of the reality that humans are living in, and without enough understanding on what humanity has reached in the communication field. Communication is not a set of regulations that can be divine or mortal. However, this does not prevent the fact that there are some apparent general concepts of communication mentioned in the *Qurān* and *Sunnah*, or that can be extracted from the two. These general concepts are discovered through analysis and study of the *Qurān* and *Sunnah*, which is something common among Muslim communication scholars. Discussions on this is presented in this study as aims of Islamic communication mentioned in a later section.

Second, there are some scholars that puts the condition that in communication there is *da'wah* (propagating Islam) in a direct form most of the time, therefore communication becomes Islamic due to this. In relation to this, there is a consensus on the importance of the adherence of communication practices to Islamic teachings, so that it deserves to be called Islamic communication.

Third, Seini sees that most of the discussions on what is labelled as 'Islamic communication' are limited to practices of interpersonal and group communication, and most of the time only gives secondary importance to mass communication. However there are some literature that gives good mention of mass communication, for example Abdul Halim (1984).

Seini continues his observation in which 'Islamic communication' is compared and considered to be better compared to 'non-Islamic communication' especially in comparing from the ethical aspect. However the comparison is always made based on exemplary and perfect intellectual forms, which require the existence of communication happening in a society in which its members frequently learn the *Qurān* and *Sunnah*, and strive against the evils of existing social conditions, implying an unrealistic comparison. Nevertheless, the existence of such idealistic state is always something striven for in Islam.

Another view states that 'Islamic communication' is seen to be more superior, and communication is originally Islamic in any way, even if it requires changing the word *da'wah* with communication. Such a view exist is likely due to the view many Muslim communication scholars have on the relation between communication and *da'wah.* This relation is discussed in the following section. Therefore, responding to this, Seini mentions that it is sufficient to say that the *Qurān* and *Sunnah* do not neglect communicative activities, and that the previous Muslim generations have preserved the heritage of human communication and developed it and later transferred it to others. Therefore, the question of superiority is irrelevant.

From the discussions above, it can be said that observations made by Seini tends to look at the reality of the Muslim society in relation to the attempts made by its scholars in creating an understanding of Islamic communication. Even though what has emerged so far may have its shortcomings, either intellectually or practically, these efforts do provide fundamental underpinnings which can be further researched and developed to face the upcoming challenges in communication, especially concerning technological

advancement, as highlighted by Zulkiple (2001), Galander (2006) and Hatim (1985). In this aspect, Seini agrees that general guidance is available in the fundamental Islamic sources and Islamic heritage, which does requires further study.

3.3.4 Communication and *Da'wah*

Communication has been related to *da'wah* by Muslim scholars, as mentioned earlier. *Da'wah* generally refers to the act of propagating Islam to others, either to Muslims or non-Muslims. *Da'wah* can be defined in two ways (Ghalwash,1987; Imam ,1985; Hijab, 1981). The first definitions refers *da'wah* as the discipline of spreading and reaching the message of Islam to mankind in terms of its belief (*Aqīdah*), laws (*Sharī'ah*) and ethical behaviour (*Akhlāq*). The other definition mentions *da'wah* as religion itself, when it associates the meaning of obedience to Allah as the God, following His teachings revealed to the Prophet Muhammad, and *da'wah* as the comprehensive rules and laws covering all affairs of life. In other words, it refers to the Islamic message. In short, the first meaning would refer to *da'wah* as the process while the second meaning as the content. Prophet Muhammad has brought *da'wah* as a religion, in which from it he has established the approaches and methods of *da'wah* (Ghalwash,1987). Therefore, an understanding of *da'wah* would require understanding both the content and the process that is derived from the message brought by Prophet Muhammad. In this study, the aspect of content is treated in the next chapter.

Islam is a mission-oriented religion that urges its believers to spread the message of Islam to others (Imam, 1983; Mohd Yusof, 1986; Zulkiple, 2001). The *Qurān* urges every Muslim to become a religious communicator (*da'i*) (*Qurān*, 3:104) and every Muslim is considered a communicator of the religion and is obligated to deliver the message of Islam according to his capability. Such a deed continues the efforts of the

Prophets and has a high position in Islam (*Qurān*, 41:33). However, there is no compulsion for the non-believers in accepting the Islamic message (*Qurān*, 2:256).

Abdul Halim (1984) sees *da'wah* as a communicative endeavour, especially in mass communication. The meaning of mass communication is in line with the understanding of *da'wah* in its original sense, in view of the fact that mass communication is the process of providing people with news and information with the aim of forming the public opinion on a particular situation, incident or issue. He outlines some realities that support the importance of communicative endeavours in Islam, which further highlight the connection between *da'wah* and communication: Firstly, the Prophet Muhammad himself gave high importance to communication for the purpose of *da'wah*. Secondly, communication is important to all Muslims, as mentioned by the verse of the *Qurān* above, whether they specialize in *da'wah* work or not, since *da'wah* is the responsibility of all Muslims. Communication is also essential for the process of enjoining good deeds (*amar ma'ruf*) and prohibiting evil conduct (*nahy munkar*). Hasnain (1988) describes oration (*al-khitabah*) and letter writing (*al-risalah*) as "forms of persuasive communication used by the Prophet....for the propagation and dissemination of the faith of Islam through speeches delivered to various congregations and through letters written to different kings and Arab chiefs".

In the review done by Seini (1987), he mentions several perspectives taken by the scholars with regards to the relationship between Islamic communication and *da'wah*. The first view states that *da'wah* is equivalent to communication, with communication being a more recent term introduced to refer to what was commonly called *da'wah* (Hamzah,1987;Abdul Halim,1984; Fatayani, 1987). On the other hand some scholars see *da'wah* and communication to be of different positions. Communication is seen as

more comprehensive than *da'wah* whereby *da'wah* is viewed as a communicative practice limited by its religious principles (Hijab, 1981). Some scholars perceive the opposite and say that *da'wah* is more extensive than communication. For example, Najib (1980) and Imam (1985) refer to the literal meaning of the *i'lam*, the term they use to refer to communication. The meaning implies that communication is relaying information in an instantaneous manner, therefore it is considered a certain method of *da'wah*. Communication is also placed as one of the stages of *da'wah* (Hatim, 1985; Imam, 1985) which will lead to the subsequent stages which is behavior change and then extension of the message to others. This includes interpersonal and group communication. On the other hand, communication is also viewed as a 'tool' that serves *da'wah* and supports Islam, more essentially when referring to mass communication and the use of technology in the media. This is the second opinion of Imam (1985) and also Hijab (1981). Yet another point of view puts *da'wah* as the content, while communication is the process. This is the third opinion of Imam (1985) and Hijab (1981), originating from the notion of *da'wah* as content, and not a process, as mentioned earlier.

Commenting on this situation, Seini states that communication activities, particularly mass communication, is not the same as *da'wah*. Mass communication relates to activities of communicating and distribution for various purposes, whereas *da'wah* activities are limited to communication for the purpose satisfying the public with the content of the message, i.e. the Islamic message. Therefore, the mass media does not necessarily serve the purpose of *da'wah*, although it involves the activities of informing, teaching, and enriching. With regards to the meaning of *da'wah*, if it refers to the process, then it can be considered as part of communication and a manifestation of it. Otherwise, if, *da'wah* is referred to as the content being communicated, then mass

communication, within a limited context, would be seen as serving *da'wah* purposes. Seini concludes that the differing opinions of the scholars shows that there is no clear form of connection between *da'wah* and communication, adding to this is the fact that the same scholar may have more than one view. Galander (2006) sees this inconsistency in the understanding of the relation between *da'wah* and communication as an intellectual problem resulting in the scholars using the terms according to their own judgement.

Nevertheless, based on what is mentioned by the scholars, to a certain extent, it can be said that the various perspectives reflect a symbiotic, if not similar, nature between the two whereby communication and *da'wah* are closely related and in need of each other. Referring to the points raised by Galander and Seini in their observations on Islamic communication, if a certain distinction between communication and Islamic communication can be made and accepted, then it can be concurred that *da'wah* is similar to Islamic communication. This is the stand taken by Hijab (2002) in his more recent work and the understanding of scholars such as Fatayani (1987), Hatim (1985), Imam (1985), and Najib (1980) in their discussions on communication and Islam. Therefore, these positions should be given consideration when Muslims are involved in using information technology for communicative purposes.

In relation to the models presented by western communication scholars, Islamic communication can be observed also as a process, although the process here has an element of connection with God and obedience to Him. It is also seen as a process of *da'wah* and spreading the message and values of Islam. These can be understood from the descriptions of Islamic communications given by the scholars. Although some Muslim scholars may give emphasis on the divine communication between God and

man, communication as a human activity as described by western communication scholars is also part of Islamic communication, since it is through this understanding that the *da'wah* aspect of Islamic communication can be realised. This is indeed in line with the ever important duty of spreading the Islamic message as mentioned in the *Qurān* and *Sunnah* and as practiced by the early generations of Muslims.

Despite any form of distinction between communication, Islamic communication and *da'wah* mentioned by Muslim communication scholars, some form connection with the western perspectives of communication in Islamic communication is evident. This can be seen in the influence of the western models to those proposed by Muslim communication scholars.

3.4 Islamic Communication Models: Attempts by Muslim scholars

Several Muslim scholars have attempted to propose what can be viewed as Islamic theoretical models of communication in explaining the communication process from an Islamic point of view. However, most of the models follow closely the 'sender-message-channel-receiver' model developed by Western scholars.

Seini (1997) had mentioned some of the models in his review. One model is by Abdul Baqi, mentioned in this work, *Wasail wa asalib al-ittisal fi al-majalat al-ijtima'iyyah wa al-tarbawiyyah wa al-idariyyah wa al-i'lamiyyah*. The model is one which emulates the Western models. In his model, Abdul Baqi places Allah as the source, the angel Gabriel as the channel, the *Qurān* as the message (although not explicitly mentioned), the Prophet Muhammad as another channel and people in general as the receivers of the message. Feedback in this model is considered when the people supplicate to Allah. As shown in Abdul Baqi's model, the communication process would involve both the

divine and the humans. This feature can also be found in most other Islamic models. Therefore, according to Abdul Baqi's and other similar models, the communication process is not confined to the human level, but involves transcendental activities as well. His model is shown in Figure 3.4:

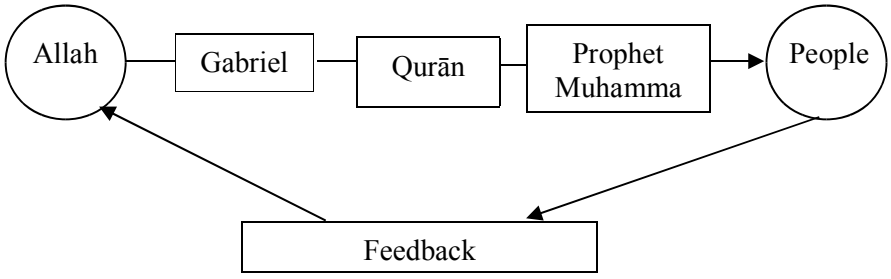

Figure 3.4 : Abdul Baqi's Communication Model

translated from Seini (1997) p.106

One of the other models that falls in this category is by Al-Rakabi. In his model mentioned in *An-nazrah al-Islamiyyah fi al-i'lam wa al-'alaqat al-insaniyyah,* Al-Rakabi mentions Allah as the source or sender of the message and man as the receiver. The channel or bearer of the message is Prophet Muhammad. Al-Rakabi does not state directly what is the message, rather he mentions that the content of the message is *al-haq* (the truth), which refers to the message carried by all the prophets from Allah. Al-Rakabi referred to the *Qurān* when identifying the elements of his model, where by Allah as the source is referred to verse 2:199, man as the receiver in verse 34:28, bearer of the message in verse 5:67 and content of the message in verse 17: 105. Nevertheless, the form which his model takes is again similar to the Western models, despite his reference to Quranic verses.

Yet another similar model is by Hijab (2002) in *al-I'lam al-Islami : al-mabadi', al-nazariyah, al-tatbiq*, also in an earlier work (1981) *Nazariyyat al-i'lam al-Islami*. The

model is shown in Figure 3.5. Again, Allah is designated as the source and the *Qurān* is the message. However, revelation (*wahy*) is considered as the channel for the message, therefore the Prophet Muhammad is deemed the receiver. The aim of the communication process is to invite mankind to believe in Allah. Hijab's concept of communication in Islam appears to have two levels, when he provides a diagram that puts the Prophet as the sender and the public as the receiver. At this level, the Prophet sends the message through the channel to the public in order to achieve the aim, and there is feedback from the public concerning the aim to the Prophet. Therefore the first level of communication is between Allah and the Prophet and the second level is between the Prophet and the public. The message delivered is obviously the same, however the channel at the second level would refer to the various methods applied by the Prophet in delivering the message, e.g. oration and letter writing. The public as the receiver are those contemporary to the Prophet, termed is Islamic literature as the Companions (*Sahabah*), given they are the only ones capable to provide feedback to the Prophet. This gives an impression of period limitation when viewing Hijab's model of Islamic communication. The other models, even though putting the public as receivers of the message from the Prophet, would not imply this limitation since they do not provide for feedback to the Prophet to happen.

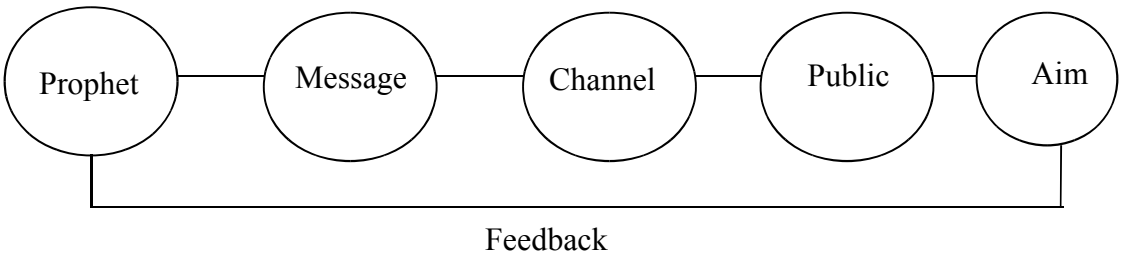

Figure 3.5 : Hijab's Communication Model,

translated from Seini (1997) p. 109 and Hijab (2002) p.153

Another model that is claimed to be based on Abdul Baqi's model is by Shihab (Figure 3.6). Seini mentions this model as described by Shihab in his article *Wasail al-ittisal al-jamahiri fi al-Islam* published in *Ummah Magazine*, Qatar. Shihab's model is similar to Abdul Baqi's interms of the sender (Allah), channel (the angel Gabriel and Prophet Muhammad) and the message (Islam). However, the receiver in this model is the Prophet at one level and the public at another level, thus expanding Abdul Baqi's model, and at the same time having similarities with Hijab's model. The effect from the communication process would bring one either to paradise or hell.

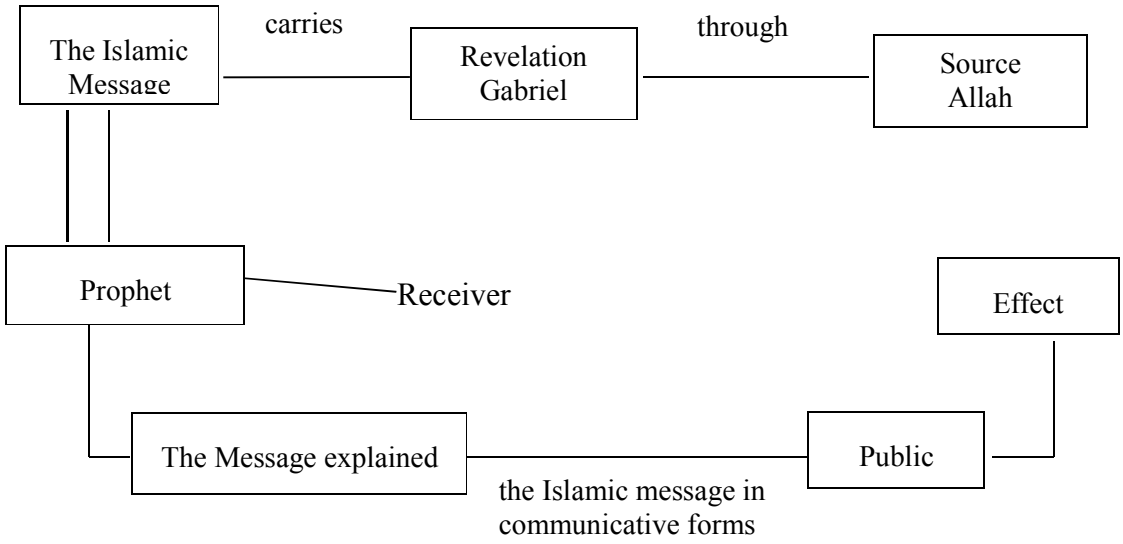

Figure 3.6 : Shihab's Communication Model

translated from Seini (1997) p. 111

In another model concerning divine-human communication between Allah (source) and the Prophet (receiver), Ibrahim (2005) referred to verse 42:51 from the *Qurān*, identifying three different channels for this form of communication and proposed a general model followed by three different derivative models. The three different channels are inspiration, messenger (the angel Gabriel) and what is termed as 'behind a

veil' (*min wara' hijab*). In this article in English, despite the reference to the Quranic verses, the models proposed to describe the divine-human communication between Allah and the Prophets and other chosen mortals consists of elements that are still the same as the Western models, even though the linear orientation has been changed from horizontal to vertical. The model is as follows:

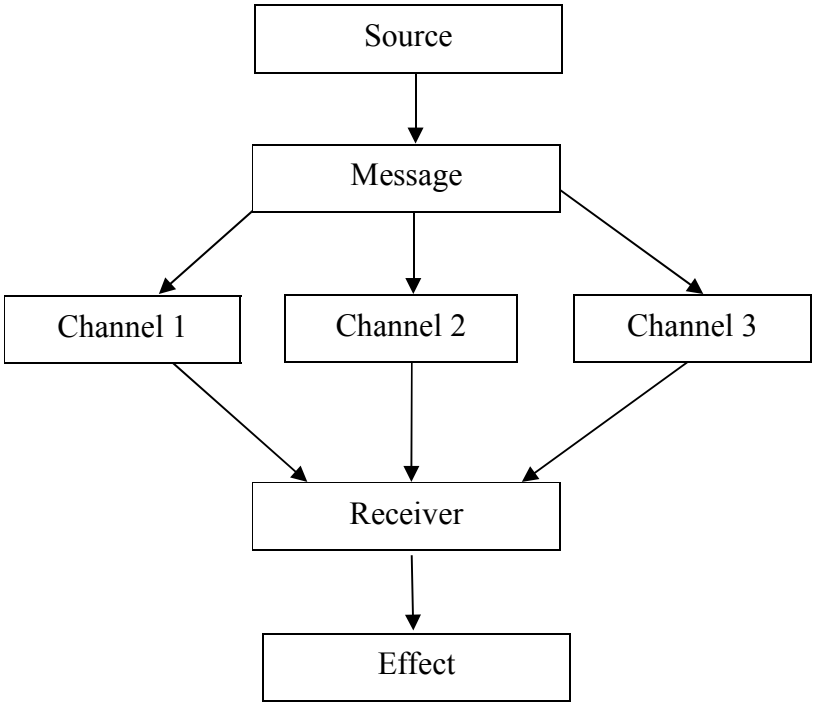

Figure 3.7 : Ibrahim's General Model of Divine-Human Communication

from Ibrahim (2005) p. 74

A different kind of model to explain the Islamic communication process quoted by Seini in his review is proposed by Imam in *Al-i'lam al-Islami: al-marhalah al-shafahiyyah*. Instead of a linear-like model, Imam's model consist of a series of concentric circles, depicting a hierarchy of different levels of communication; intercultural, mass, group, interpersonal and intrapersonal (Figure 3.8). His model has seven layers in total, with

Allah placed above all the layers. The first outer layer is the *Qurān*, followed by the *Sunnah*, the two major sources of Islamic teachings. This shows that these two are the highest level of communication and would govern the other practices of communication at the other levels. In a way, it can be seen that Imam's model incorporates elements from the models by other Muslim scholars. The level of the *Qurān* would represent the divine-human communication, whereby it involves the transmission of the revelation from Allah to the Prophet. The level of the *Sunnah* would be the communication from the Prophet to mankind. The circle after the *Sunnah* is the level of intercultural communication, which Iman sees as corresponding to elements of Islamic civilization, which are universal and unites people from various cultural backgrounds. The next level is mass communication, which Imam puts as comparable to carrying out the rituals of Hajj. Following this is group communication, deemed equivalent to large congregational prayers, e.g Friday prayers and the two '*Eid* prayers of '*Eid al-Fitr* and '*Eid al-Adha*. Interpersonal communication in the subsequent level is given the equivalent of what Imam calls *al-jama'ah al-awaliyyah* (literally, the first or primary group). In the view of Seini, this refers to daily congregational prayers (*salat al-jama'ah*). However, Galander (2006) sees this as more appropriately meaning the basic social units, for example the family. The centre circle, which relates to intrapersonal communication, is divided into three parts, referring the three types of *nafs* (self or soul) : *al-nafs al-'aaqilah* (also called *al-nafs al-mutma'innah*) which is the most noble, *al-nafs al-lawwamah,* and lastly *al-nafs al-ammarah*, which is the lowest level of the *nafs* that is inclined towards evil desires. Imam sees the different levels of communication to correspond with different kinds of communicative situations in the Islamic tradition.

Comparing to other models, Imam's model considers other forms of human-human communication in its different levels, besides just the Prophet-people communication type of communication. It also incorporates divine-human communication found in the

other models. However, this model does not explicitly state the elements normally mentioned in the linear 'sender-message-channel-receiver' model, even though they may be impliedly understood. This could probably be his intention to depart from the Western linear model, but his model still refers to the Western construct of the different levels of communication. Therefore, his model still warrants further refinement and elaboration on whether the different levels of communication refer only to the specific activities and contexts mentioned in the model or are they applicable to other communicative context of the Muslim society and individual, and how. The model is shown as follows:

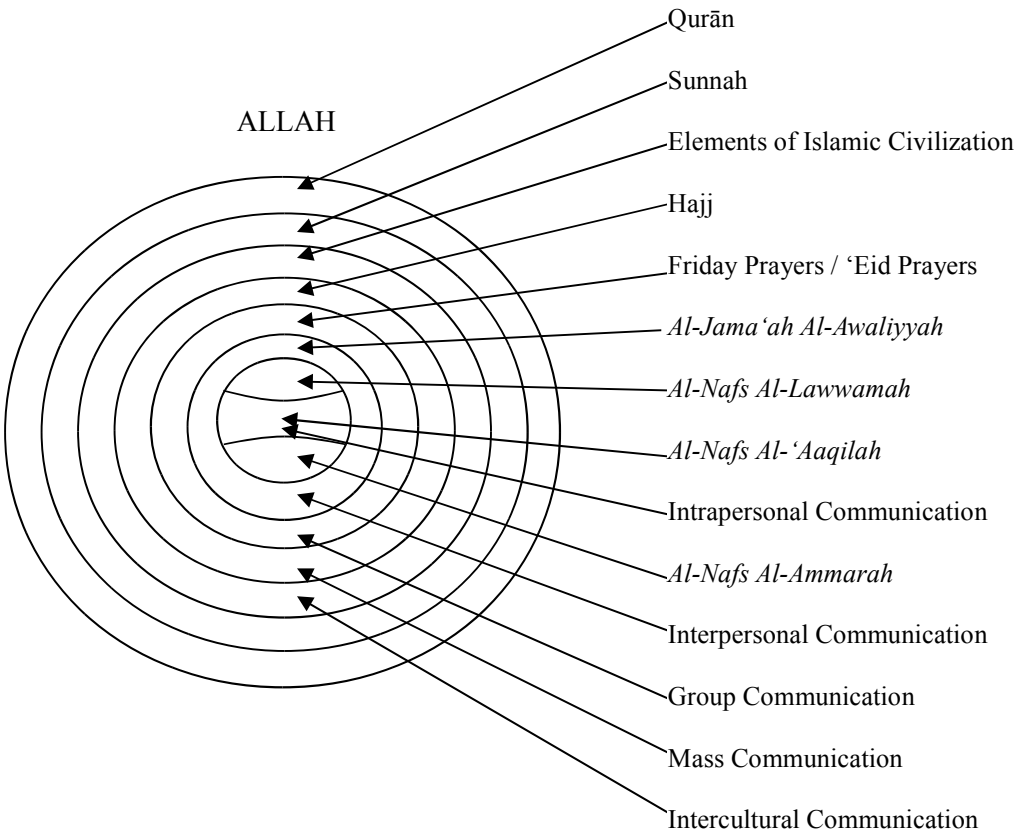

Figure 3.8 : Imam's Communication Model

translated from Seini (1997) p. 110

Abdul Halim (1984) provides his description of the different elements in the Western communication model from the Islamic perspective. Here, he focuses only on the human-human communication, discounting the divine-human and Prophet-people communication. In Islamic communication, the sender or source is a person with wide experience in the topic being conveyed. Abdul Halim defines the sender as a Muslim with a sound mind, possessing religious knowledge, performing public opinion communication with his knowledge, and working towards creating an effect and obtaining a response. The message conveyed can be religious or general in nature, with the general matters being explained from a religious perspective. This is in line the comprehensive view of Islam that covers all aspects of life. The channel employed according to Abdul Halim can be specific religious channels (e.g. sermons during Friday prayers, religious magazines, Quranic radio programs) or general channels that contains religious topics (e.g. general radio programs, national newspapers, television programs). What can be understood from his description of the message and channel here is conveying the message in Islamic communication can be through specific channels with programs on religious topics or in other general channels with content that discusses religious issues or general matters from a religious perspective. The receivers of the messages are perceived by Abdul Halim as those who has the intention to receive the message by exposing themselves to the message (e.g. the congregation during Friday prayers, readers of religious newspapers, listeners of Quranic programs), or those who come across the message through the general channels. Therefore, in order for Islamic communication to be successful, a bigger audience and scope of receivers can be reached by proliferating the message and not confining it to specific programs. This should be considered in the development of content for ICT related channels. According to Abdul Halim, the expected effect from the Islamic communication process concerns effects related to specific religious topics like better understanding of *hajj*,

fasting and *zakah*, and also concerning 'worldly' affairs with a change in viewing these issues from a religious perspective.

3.4.1 Observations on the Models

Some observations can be made from the models mentioned here. The Prophet is placed either as the channel, the secondary source or the receiver. However, the message of Islam emanates not only from the *Qurān*, but also from the *Sunnah*, i.e. the words, actions and tacit approvals of the Prophet. Therefore, the Prophet has the potential to be the message as well.

As it can be noticed from the models described, the Muslim scholars tend to follow the Western constructs in viewing the communication process. A possible explanation is that such constructs provide a common explanation of the communication process. In this light, Seini takes the position of the universality of mankind with the same basic needs and inclination for spirituality. Communication is practised by all, Muslims and non-Muslims. Therefore, he stresses the need to look at the reality that man is living in and what society has achieved in the field of communication. In shorts, Seini celebrates the commonness that exist between Muslims and non-Muslims.

However, according to Galander (2006), this tendency is because there is a scarcity of proper research on Islamic communication, and in turn, a scarcity in genuine Islamic communication theories and models. Therefore, he poses some issues that needs to be addressed, among others the likelihood of a common theory of Islamic communication, the possibility in finding the suitable Islamic community to test the theory, and the suitable research design to follow. He also poses the question on determining the 'Islamicness' of the theory, whether it would relate to its constructs, methods or the environment in which it is applied. Galander sees that issues of this kind need to be

dealt with in order to build a well-defined perspective of Islamic communication. In relation to this, this researcher adds the need to look at the position of technology in communication, as mentioned earlier.

In relation to the models mentioned, it can be said that the descriptive model provided by Abdul Halim seems to be a suitable and rather comprehensive description of communication within the present modern context. It mentions of communication activities that is to be carried out by Muslims in relation to conveying the message of Islam in the society. Without disregarding the divine-human element of Islamic communication, Abdul Halim's model provides an understanding of Islamic communication which is practical from the human activity aspect and this is indeed relevant to what this study is looking into when focusing on ICT for communication.

Nevertheless, despite the diversity of models, and any of their shortcomings, a common understanding that can be derived from the various models is the centrality of conveying the Islamic message that emanates from Allah and taught to mankind by the Prophet, which is contained in the *Qurān* and the *Sunnah*. This understanding is an element for what can be said as Islamic communication. The Islamic message should not be confused with and confined to what is sometimes referred to as 'religious information' that touches on topics like prayer, fasting and others. For the Muslims of today, a central issue in Islamic communication would be investigating on how the human-to-human communication process in its various forms is capable to convey the divine message, and in particular looking into how this happens through the mediation of ICT. An even more important issue is not just the question about form, but of the purpose of the communication act itself, i.e the intention of the communication process and what is to be achieved by it. For this purpose, the concept of *niyyah* in governing human actions, including communication, can be explored.

3.5 Communication, Intention and *Niyyah*

As a human activity, communication would involve some form of intention and this has been acknowledged by communication scholars. Mokros (1993) mentions that views of some communication scholars, including those from the non-verbal communication area, lead to the idea that "…communicative actions are purposefully encoded with the intent of saying something to someone..."(p.64). He further states that "...communication involves intentional and efficient message exchange....."(p.65).

Communication is viewed as an intentional act when it is related to influencing and affecting others. This is what Weaver (1949) mentions as the "effectiveness problem" in communication. He states that the purpose of all forms of communication is "to influence the conduct of the receiver" in a broad sense of meaning of conduct. (p. 5). Berlo (1960) also is of a similar view. He clearly asks the question of the intention of the communicator in communicating the message. He states that "we communicate to influence – to affect with intent". He also adds that the purpose of all communication is to produce a response and the source be in control of the communication process. Therefore, communication is conducted with a purpose, whereby normally the initiating party (source, sender) intends to induce a response from the receiving party (Berlo, 1960, p.12; Nilsen, 1970, p.22) or even to exert influence affecting the behaviour of the receiving party (Weaver, 1949).

However, in the communication process, intention can lie more within the domain of the party that plays the more active role. The sender is active when transmitting messages. The receiver is considered active when seeking for messages made available by more passive sources (McQuail, 1984). He would normally seek out messages that would

fulfil predetermined intentions. However, the passive sources may also originally have their own intentions in place. In the case of the active sender, the receiver would only be aware of the intentions if it is made known to him. The receiver may have assumptions about it but it may not always be true (Radford, 2005). Having such assumptions might distort the actual intended meaning that is trying to be communicated. To overcome this problem, Barnlund (1970) refers to the "Law of Total Situation" by Henry Harris that considers "the totality of time, place, personality and circumstance" to construct a picture of the intended meaning of the communicated message (p.101). Nevertheless, it is still the perception of the receiver. The difference between actually knowing the intention and just assuming it would have bearing on the kind of response produces by the receiver (Nilsen, 1970). On the part of the sender, it is up to him whether or not to make explicit his intention in communicating. What is more important for him is having the intention and attempting to fulfil it through the communication process.

Having intention when communicating means that communication is purposive. Purpose can be divided into two (McQuail, 1984; Mohan et.al., 2002). Consummatory purpose is the 'actual' purpose that is to be achieved, an end in itself. Instrumental purpose, on the other hand is attained to achieve another purpose, i.e. as a means to an end. A certain message may be produced with both consummatory and instrumental purpose. An example that can be given here is the creation of 'edutainment' ICT content that educates and at the same time entertains the receiver. Here educating is the consummatory purpose while entertaining is the instrumental purpose. As mentioned above, in the communication process, it is not only the sender who has a purpose. The receiver may also be purposive in looking for messages in line with his needs and interest. Depending on which party plays the more active role in the communication process, both types of purposes are applicable to the sender and as well as the receiver.

Failure in communication may happen when the two parties possess different types of purpose when involved in the communication process, meaning there is a clash of intentions, needs and interest. In the example of the ‘edutainment’ ICT content, the developer (sender) may want the receiver to gain educational benefit from the content. The user of the content (receiver) however, may only seek out the content merely for entertainment purposes and might not be aware of its educational purpose, hence may evaluate the content based on that purpose which may result in continued or just occasional use of the material.

Radford (2005) has a different view regarding intention in communication. Referring to Wilhelm Dilthey, Hans-Georg Gadamer, Edmund Husserl and Umberto Eco, he opposes the conventional 'transmission regime of communication'. Based on his arguments, it can be said that communication happens between the 'receiver' and the 'message', although he refuses to use these common terms. Communication in this view is dependent on the 'receiver's' interpretation of the 'message', i.e. the meaning of the 'message' is created by the 'receiver'. Knowing the intention of the 'sender' is not important, in fact it is beyond the knowledge of the 'receiver' because it is not detectable in the 'message'. Communication is about understanding messages, not intentions. However, Radford does state that to fully understand a 'message', the 'receiver' has to have thoughts similar to the one that motivates the 'sender'. This possibility of the receiver having a different meaning of the message from that intended by the sender had also been mentioned by Campbell and Level (1985).

For Muslims, participation in the communication process, whether as a sender or as a receiver, is guided by the concept of *niyyah*. All is done with sincerity for the sake of attaining the pleasure of Allah. Whether communication is for spreading the message of

Islam to non-Muslims or for development of the Muslim society, that ultimate aim is always present. Under the concept of *niyyah*, the obligation is on the active party, be it the sender or the receiver, to have in place the pure and proper kind of intention that is to be attained in the communication process. These understandings should always be in place, especially when ICT is utilized for communication.

The position of *niyyah* can also be viewed from the perspective of conventional models of communication. The transmission model of communication (e.g. Shannon, Schramm, Berlo) emphasizes on the elements of the communication, one of which the role of the senders or sources. They should put into consideration the effect they wish to achieve (Mohan et.al. 2002). This is where Muslims should set the proper *niyyah* when sending or receiving messages in the communication process. The transaction model of communication (e.g Barnlund) looks into the creation and assignment of meaning of the message either by the sender or the receiver. Meaning is dynamic and changes from one situation to another even though the message might be identical (Mohan et.al. 2002). Here, the process of creation and assignment of meaning also requires the Muslim to have the appropriate *niyyah*. Thus, in whatever kind of activity in the communication process, *niyyah* has its significance for Muslims

In the situation where the sender plays an active role in communicating, it is the sender that should have pure intentions in communicating, and he will be rewarded accordingly. The responsibility from this point of view is on the sender, not the receiver. The receiver will not know the actual intention unless he is informed by the sender, which can still be questionable. Whether the sender is successful or not in conveying his intention to the receiver after putting in the best effort is indeed beyond his control. Here Islam releases this responsibility from the sender and Allah rewards man for what

he has striven for. This is clearly stated in verse 2:286 from the *Qurān*, which releases man of burdens beyond his normal capacity.

Similarly in the case of the receiver, his intention in seeking out messages should be pure and include the evaluation of the messages to ascertain its status and authenticity and avoid any form of suspicion, even though the messages may fulfil his intended purposes. Verifying the status of the message is discussed as part of value of truthfulness in communication in the later section. At the same time the receiver should not involve any form of evilness and wrongdoings in his intentions of seeking out messages. The *Qurān* reminds this in verse 49:12. The act of spying mentioned in the verse can be seen as a form of seeking out information with wrong intentions. According to Abdullah Yusuf Ali, spying is "enquiring too curiously into other people's affairs", which can either be a idle form of curiosity which is a useless act, or an act almost amounting to a sin when the seeking of information is added with bad suspicion against the other party.

Ahmad Murad Merican (1989), in borrowing Ibn Khaldun's (d.808H/1406CE) explanation on errors of historians mentioned in his '*Muqaddimah*', states that one of the problems of the communicator (whether the sender or the receiver) is being unaware of the purpose and significance of things that he has observed or learned. This would result in further transmitting messages based on his own assumed significance, which would later result in falsehood. This problem originates form the bigger issue of being uncritical in the sending and receiving of messages. He mentions Ibn Khaldun's assertion that critical insight would uncover hidden truth. The importance of purpose is highlighted in this case in order to preserve the continuation in transmitting truth in the

communication process. Accordingly, the communicator should also establish his purpose and intention when communicating with others.

3.6 Aims of Islamic Communication

Communication in Islam is not without purpose, as described earlier. The aims of communication in Islam represent the purpose, i.e. what is to be achieved through communication. They correspond with the *niyyah*, the intention of being involved in the communication process (Seini, 1997).

The underlying motive of communication in Islam, as in any action of the Muslim, is to obtain the blessings of the Almighty Creator, Allah s.w.t (Yusof, 1989, p.19). Based on this motive, Islamic communication aims at spreading and upholding the Islamic teachings, especially belief in the oneness of God, i.e. *Tawḥīd* (Hijab, 2002; Imam, 1985) This is a show of obedience and gratefulness to everything that He has bestowed upon mankind. It also relates to man's duty as His *khalīfah* (vicegerent) in administering this world to ensure that all that is done is performed in obedience to God. By instilling this kind of obedience, Islamic communication seeks to free mankind from other forms of submissions, either to cruel oppressors in the form of other mortals or to man's own internal evil desires (Imam, 1985). Therefore, when Muslim communication scholars attempt to Islamise communication, the aim is to make man closer to the Creator (Mohd Yusof, 1986)

At the strategic level, two aims of communication in Islam can be identified. The first aim is to sustain and defend Islam, which means to provide the clear and right understanding and perspective of Islam (Imam 1983, 1985; Radhi, 1997). This is needed because Islam constantly endures countless assaults that try to weaken the Muslims and

narrows the understanding of Islam that causes both the Muslims and non-Muslims to get a wrong perception about Islam. Related to this strategic aim, Islamic communication strives to purify the belief of Muslims and eradicate any form of teaching and ideology that deviates Muslims from the Islamic teachings. It seeks to unite the Muslims by bringing them back to the *Qurān* and *Sunnah* as the fundamental sources of Islam (Imam, 1985). This first strategic aim can be said to be reactive in nature. The second strategic aim, which is more proactive and going beyond the first one, is to expand Islamic understanding in the society (Imam 1983; Radhi, 1997). The message of Islam brought by Prophet Muhammad s.a.w. as the religion for all mankind necessitates the propagation of Islam (*da'wah*) to be ongoing and Muslims of all times uphold this responsibility. This is a continuation of the works of the Prophet, of which is described clearly in the *Qurān* in verses 7:158 and 34:28 the Prophet as God's messenger to all mankind to bring them to believe in Allah and follow His guidance.

In order to achieve these strategic aims, two requisites are identified. First is the ongoing *da'wah* in all forms of existing communications. Muslims should make use of the available modern media channels and techniques in order to improve the effect and coverage. However, this does not guarantee any substantial advancement unless it done with the proper direction and guidance (Imam,1983; Hatim, 1985). The second requisite is the need for leadership and exemplary figures that can generate widespread impact on the society (Imam,1983). In this light, information and communication technologies would fall under the first requisite as the ultimate form of present day communication. In relating this to the second requisite, the policies and programs for ICT development put in place by the relevant authorities can be seen as a form of 'leadership' that provide guidance and subsequently have far reaching effects on the society. This issue is among

others that will be investigated in Chapter 6. Hence, the need for the Islamic perspective for these two matters is indeed significant for Islamic communication.

At a more operational level, Islamic communication promotes righteousness and prevent immorality and destruction based on the principles and *Sharī'ah* of Islam (Jarishah, 1409H, Al-Shinqiti, 1986). This is closely related to *Sharī'ah*'s aim of *jalb al-maṣlaḥah* and *dar'i al-mafsadah*. It also aims to fulfil human needs and improve his intellect, emotion and behavior through the propagation of Islamic values (Imam, 1985). In other words, Islamic communication strives for fulfilling the aims of the *Sharī'ah* and the *Maqāṣid*. Expanding from this point, Islamic communication intends to convey solutions for contemporary issues in economy, politics and society from the Islamic perspective, i.e. guided by the aims of the *Sharī'ah* and the *Maqāṣid al-Sharī'ah*. Therefore, Islamic communication seeks to affect the environment and not be influenced by it (Imam,1983; Hatim,1985). Mohd Yusof (2006) mentions that the role of the Prophets, which is to be emulated by Muslims in general, is to "achieve specific purposes of communication, which are mentioned in the *Qurān*" (p.42-43). These specific purposes are referred to the verses in the *Qurān* that mention various acts of communication related to the Prophets, summarised in Table 3.1:

Table 3.1 : Specific Purposes of Communication Mentioned in the *Qurān*

To call mankind to believe in the oneness of Allah (41:33)
To inform (15: 49)
To teach or educate (62:2)
To warn (22:49)
To command (20:132)
To convey glad tidings (2:155)
To invite mankind to what is good & to enjoin mankind to do what is right & to forbid mankind from doing what is wrong (3:104)

(Source : Mohd Yusof, 2006)

These verses also represent the different forms of communication mentioned in the *Qurān*, which guide Muslims on how to communicate the message of Islam. In developing ICT content, Muslims should set the aim to make use of the guidance provided and emulate these different forms so that communication of the content would follow the efforts of the Prophets. Hatim (1985, p. 428) has stressed on this matter with regard to Islamic communication, as a way to better confront challenges of the present times.

3.7 Values in Islamic Communication

The aims of communication in Islam are achieved through the practice of righteous values, and not through any form of dishonesty or subjugation. In Islam the end does not justify the means of attaining it. The concept of *niyyah* mentioned in Chapter 2 adheres to this principle. Hence, the Islamic perspective of communication places great importance on religious values, as well as social and cultural values that are in line with Islam. Emphasis on values is important to establish and maintain social order, which is part of civilization building (Hasnain, 1988).

Values of Islamic communication mentioned in this section are in the form of practical values that have their basis in the fundamental Islamic principles. As discussed in Chapter 2, noble values in Islam are the fruits of adherence to the *Sharī'ah* that originates from the belief of *Tawḥīd*. Practices that are noble can either be *wājib* or *mandūb*, depending on the actual situation of the particular communication. Likewise, opposite of such practices can be *ḥarām* or *makrūh*. Evaluation of particular practices requires proper and detail study, as highlighted in Chapter 2. Nevertheless, the practical

values that are discussed in this section are noble values that would be seen generally as either *wājib* or *mandūb*.

The practical values can be described from the perspective of the message and the communicators (sender and receiver) with truthfulness as a major value. The message that is communicated should itself be truthful in the first place. This relates back to fact that communication is conducted with a purpose and the communicators should in the first place have the right and sincere intention when getting involved in the communication process (Hasnain, 1988). In relation to this, the communicators should have integrity in communicating. In this sense, reference can be made to the efforts of Muslim scholars of *hadith* that has established a discipline of personality criticism known as *al-jarḥ wa at-ta'dil* (disparagement and authentication) in evaluating the *ruwāt* (narrators), i.e. the communicators who receive and transmit the *hadith*. The evaluation considers the narrators probity, accuracy, thoroughness and lack of carelessness (*al-'adālah, al-ḍabṭ, al-itqān, al-barā'a, al-ghaflah*) (Ahmad, 2003). The outcome of the evaluation would have bearing on the position of the *hadith*. This discipline should be adopted in all forms of Islamic communication in order to establish the integrity of the communicators as well as the status of the message. Such qualities should be present in Muslim communicators since it would have effect on the status of the message communicated.

Muslim scholars in communication has thus stressed the importance of honesty and truthfulness in communication (Radhi, 1997; Imam, 1983; Al-Shinqiti, 1986; Fatayani, 1987). Honesty is required whether for the sender or the receiver in order to avoid distortion of facts, reduction, misrepresentation or concealment of information. Honesty on the part of the sender is rather obvious, but the receiver also needs to be honest in

judging the accuracy of the information and whether to accept or reject it. Any form of unwarranted discrimination or favouritism in making such judgements is to be avoided (Imam, 1983, p. 160). Therefore, honesty is very much an issue of practice rather than just mere proclamation. Hasnain (1988, p.185) identifies verses 61:2-3 of the *Qurān* as a reminder on this issue in communication. From the verses, honesty is both in what is communicated (the example given in the verses are in the form of oral communication) and what is done in actual practice. With the increasing challenges of present day communication, Muslim communicators are strongly required to possess love for truth and righteousness, and have hatred towards falsehood and evilness (Fatayani, 1987; Radhi, 1997). These challenges are more apparent when involving ICT in communication.

The emphasis on these values has reference to verse 49:6 that reminds Muslims to verify news that has been conveyed by a person known to be of immoral character, since the bearer of the news with such disposition will have a high likeliness to spread untrue words. Therefore the news is questionable until its status is substantiated. Thus, the act of authenticating and being critical of the communicators and the message is indeed integral in Islamic communication (Imam, 1985). Najib (1980) emphasizes on being critical of the sender. Extending from this point, Merican (1989) implies that the essence of ethical communication lies in the interconnection of the virtues and truthful nature of the sender, the receiver, and the message itself. He accentuates the role of both the sender in critically transmitting messages and the receiver in critically receiving them. Lacking of this critical element in ascertaining the truth of the message may lead to confusion and conflict in communication, which he sees not as communication but as 'contra-communication'. Nevertheless, critical assessment should be done with truth and honesty and free from any ulterior motives or personal interest (Imam, 1983). On this

matter, Seini (1988) makes reference to a *hadith* by Prophet Muhammad that disapproves "uncritical dissemination of everything that one comes to hear or know". The *hadith* as reported by Abu 'Isa al-Mughirah bin Shu`bah and narrated by Al-Bukhari and Muslim, mentions Allah forbidding several vices, among others which also includes disobedience to parents, parsimony, usurping the property of others and burying alive female infants (An-Nawawi, 1983). Subhi as-Salih (1970), in explaining the same part of the *hadith* referred by Seini, describes that Allah disapproves of saying everything that one hears without assuredly knowing, or even strongly presuming, its authenticity. A person who commits such an act is enough to be considered as a liar. Thus, the *hadith* further underscores the importance of being critical and verifying the truth in Islamic communication.

Freedom in communication is highly regarded in society as another important value and Islam sanctions this but in a different way form the conventional understanding of freedom in communication (Imam, 1985). It is practised not without control or guidance. Unrestricted or absolute freedom of expression goes against the very nature of man's creation as God's obedient servant and *khalīfah*. Freedom is not to be abused to the extent that is may cause harm to the physical, personal and social freedom of others. Thus, in verse 6:108, Allah forbids Muslims from reviling what non-Muslims worship. This is because they are not forced by Islam to belief in Allah, as stated in verse 2:256. From this verses, it can be said that religious freedom and freedom of communication go hand in hand whereby communicating and inviting people to Islam without any compulsion is inclusive of such freedoms and eventually people will be able to see the truth in the Islamic message by the grace of Allah.

Islam also forbids spying on the personal lives of others as well as the spreading of other people's personal flaws and imperfections that are kept secret on the pretext of freedom, except when it involves injustice to other parties. This is clearly mentioned in verses 49:12, 4:148 and 24:19. The verses provide further guidance on the limits of freedom in communication. Those who breach the guidance are alikened to eating dead human flesh and will be punished by Allah in this life and the Hereafter. Therefore, in general, freedom of communication in Islam does not permit the explicit expression and proliferation of vice.

Therefore, freedom of communication in Islam refers back to the belief of *Tawḥīd* with the meaning of obeying Allah as the Creator of man, thus, freeing him from subjugation to other humans. This will install the honour and dignity of man as absolute obedience is reserved only for God the Almighty.

In sum, this discussion on values in Islamic communication highlights two main values with their derivatives as shown :

Table 3.2 : Values of Communication in Islam

1. Truthfulness - truthful message communicated - integrity and honesty in the conduct of communication - being cautious and critical of the communicator and the message
2. Freedom guided by respect to others - not spying on matters of others that are not publicly known - not spreading the flaws of others - safeguarding the secret of others - non-proliferation of vice

Righteous deeds should be preceded by pure intentions. Therefore, when adhering to these values, the concept of *niyyah* comes into picture again in the communication

process since the aims of communication in Islam are to be achieved in the proper manner.

3.8 Conclusion

The discussion in this chapter looked into the present perspectives on communication and highlighted important aspects of communication in Islam. As a process, communication in Islam concerns the activities done by humans as guided by Islamic fundamentals. Aspects of Islamic communication are seen as involving :

1. aims of Islamic communication are based on *Tawḥīd*, *Sharī'ah* and the *Maqāṣid*, and *Da'wah.*
2. values practiced in communication

The aims of communication in Islam sets the agenda for Muslims communicators. The achievement of the aims is done with the proper values and practices in place. This also involves the various methods used in communication, which include ICT as technology for communication. Both aspects constitute the concept of *niyyah* that would later provide direction and guidance throughout the communication process especially when making use of present communication technologies. This is proposed as an approach to formulate an Islamic understanding of ICT through the communicative aspect of ICT, i.e when information and communication technologies are developed and used for communicative purposes. Here, the concept of *niyyah* is placed centrally befitting its prominent position in Islam in affecting all activities of Muslims and should be given attention by ICT users and developers alike. One other important issue of communication from the Islamic perspective as mentioned in this chapter is the conveying of the Islamic message. This refers to the information content communicated, which is discussed in the following chapter.

CHAPTER 4

INFORMATION: MEANING, VALUES AND ĀYĀT (SIGNS) IN THE QURĀN

4.1 Introduction

The previous chapter looked into the communication process which is part of the human activity in ICT development, i.e. ICTs being used for communication purposes. This chapter continues by discussing information as the content developed by humans in which ICT is used to communicate it. In this sense, this chapter looks into what are the understanding that can be taken from Islam in guiding the creation of information content in ICT development. This chapter presents discussions on information and meaning, the concept of information, the relation between information, values and context, and a perspective on signs, information and technology. Form here, *āyāt* (signs) in the *Qurān* is discussed as guidance for information content development.

Common discussions on values for information would touch on matters related to rights and responsibilities, such as right to access and receive information, freedom of information, privacy and data protection, censorship, duties and responsibilities of people in creating, sending, distributing, receiving and safeguarding information, professional ethics and other related issues (Hill, 1999). Balancing the interest of the different parties involved; individuals, social institutions, private and commercial enterprises, government bodies and agencies, is a major task involving everyone mentioned here. Various declarations, conventions, policies, laws, rules and regulations are drawn up in attempt to carry out this balancing act.

A question that can be posed here is on what basis are these policies and laws are formed? Finding an interpretation of perfection that can be accepted by all is a task that

is humanly impossible looking at the diversity of the social make up of the human race. Islam states the solution to this matter by going back to the humble realization that man is created by God and therefore only God is knowledgeable of the affairs of man, thus referring back to the notion of *Tawḥīd* and the position of man presented in Chapter 2. The *Qurān* mentions this in verse 48:13. Ibn Kathir describes the ending of the verse ("And Allah has full knowledge and is well acquainted (with all things)") as a testimony that "He is All-Knowing of you and All-Aware of all of your affairs", i.e. only Allah is most aware of the interests of man.

By understanding fundamental aspects of Islam, only then can a form of ethical practice be formulated to undertake the issues mentioned above. This is done with the considerations of the changing needs of the society that are based on actual needs and not fulfilment of destructive desires and interest. The general aims of the *Maqāṣid al-Sharī'ah* guides man in identifying these needs. It is not the purpose of this study to propose specific code of conduct. Rather, this study looks into a more fundamental issue of what underlies the understanding of information from an Islamic perspective, which is treated through the following discussions in this chapter. This understanding will then become guidelines for Muslims, particularly Muslim content developers in their practice of creating, sending and receiving information through the use of ICT. Definitions of information is looked into at first. Discussion on the concept of information is presented as a beginning to address the questions of value and context and technology. The concept of *āyāt* (signs) in the *Qurān* is finally discussed as a perspective on the development and understanding of informational content.

4.2 On Defining Information

Scholars of information have agreed that it is difficult to come to a single definition of information (Haefner 1999). With a rather abstract concept like information, the meaning would be different to different people when it is associated with certain ideas, such as information management, information economy, information technology, information audit, information warehousing etc. Hence it is important to separate information from these ideas if any agreed definition is to be attempted (Hill, 1999). This variety in understanding information is dependent on influences that are linguistic, social and technological in nature (Badendoch et.al, 1994). In Machlup and Mansfield (1983a) more than thirty fields have been identified that has focus on information in some way. This number is certainly inconclusive and more fields can be added as human knowledge grows.

In defining information, some views regarding information are identified (Schement, 1993). The first view sees information as a phenomenon, a representational entity or in other words “information-as-representation' or 'information-as-thing' (Buckland, 1991; Ruben, 1993). A definition of 'information-as-thing' is by Ruben (1992): “Information is a coherent collection of data, messages, or cues organized in a particular way that has meaning or use for a particular human system” (p. 19).

The second view, 'information-as-process' would relate to the act of being informed, or as mentioned by Belkin and Robertson (1976): “Information is that which is capable of transforming structures” (p.198). This view is related to information as the reduction of uncertainty, referring to the notable definition by Shannon which is mentioned below. A definition that combines the two views of 'information-as-thing' and 'information-as-

process' is seen in Machlup (1983) in which “information refers to telling something, or the something that is being told” (p. 644).

The third view of information is 'information-as-product of manipulation', which can be related to the previous views, but here information exist as a thing that has gone through some process of manipulation. Hayes (1969) definition gives a good description of this view: “ “Information” is data produced as a result of a process upon data. That process may be one of transmission....it may be one of selection; it may simple be one of organization; it may be one of analysis.” Looking at information from this perspective, information is essentially related to data processing. Quoted from Badendoch et.al, (1994, p.11), Blumentahl (1969) defines information as “data recorded, classified, organized, related or interpreted within context to convey meaning”. On a similar note, Davis and Olson (1985) add the element of value with their definition of information, quoted in Hill (1999, p. 13) in which information is “data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or prospective actions or decisions”.

Hill (1999. p.13) mentions the view of Jungclaussen (1988) and Kempe (1986) that information is the meaning imparted by symbols and signs. Here, the role of the medium is mentioned in communicating meaning. Badendoch et.al (1994) labels this as the characteristic of systems-dependency of information.

Haefner (1999) sees information as “ ...a “message” “understood” by an “information processing system” (pp.xiii-xiv), thus changing its present “internal informational organization” ”. He stresses that information must be linked with an appropriate information processing systems, without which information would not make any sense

and cease to exist. In the context of the society, or particularly the “information society”, with the inverted commas as Haefner puts it, human beings are the “information processing systems” and organized signals (he gives the example of text on paper) are the “messages” that changes the persons “internal informational organization” which he refers to neurological activity of the brain. However, the changes invoked by the message occurs with the condition that the meaning of the message is understood by the human information processing system.

The definition that information is 'that which reduces uncertainty' as mentioned in Shannon's *Mathematical Theory of Communication* (Shannon and Weaver, 1949) is often cited, but it relies on what is meant by uncertainty, which can refer to either subjective human experiences or measurements of probability (Badendoch et.al, 1994). However, in discussing about information in a non-engineering qualitative discourse, which is not precisely of what Shannon's theory directly concerns, this definition should not be ignored all together, rather further additions could be made to it, as suggested by Artigiani (1999). In discussing the theory, Weaver (1949) had suggested that the theory would be “helpful and suggestive” in issues concerning meaning and its effectiveness (p. 24-25), resulting in its influence in other areas like biology and social science. Artigiani (1999) mentions that in society, information would reduce uncertainty about the environment in which it exists. However, there is a need to look into issues like parties within the society that are sending and receiving messages, the message itself, the medium being used and the resulting information from the whole process. These concerns relate to individuals in the society who are in close contact with other individuals, therefore the action of one person would affect others within the society. He continues to state that society as a system would purposefully strive to preserve stability

by evaluating actions of people and storing information on these and the larger environment that it operates in.

Min (1999) expands by looking at the attributive characters and functions of information in coming out with a definition. He defines information as "something that the information recipient receives but the information source does not lose in a communication system and it eliminates the uncertainty of the information recipient vis-à-vis the existence, characters and the dynamic state of the information source" (p.151).

The definition from Shannon shares similar essence with a more comprehensive definition by Vickery and Vickery (1987) when they state that "information in the sense we use the term embraces not only worked up data but all the other categories: fact, explanation, theory, law, method, technique, tool, even problem, and more besides: whatever, indeed, that can modify the state of knowledge of the scientist or other recipient"(quoted in Hill, 1999, p. 13). Hence, a kind of 'reduction of uncertainty' is achieved with the revised form of understanding attained through receiving information.

MacKay (1987) states that, "we say we have received information when what we know has changed" (p.369). Hill (1999) continues by stating that information can be defined as "a category of concepts which our minds take in, consciously register, to which meaning can be attributed and which normally modify our state of knowledge" (p. 22). A basic relation between knowledge and information in this light can be seen in the observation by Mason, Mason and Culnan (1995) that "knowledge is information that has been authenticated, validated, or thought to be true" (p.50), whereby knowledge here would refer to the modified state mentioned above. Without going into a highly philosophical debate on what knowledge is, which is beyond the scope of this study,

knowledge here can be understood as the internal state of a person in understanding different phenomena of life, with the possibility of providing justification for a belief. This inner state is continuous (exists prior to the receiving of an information), dynamic and self-modifying (Badendoch et.al, 1994). Hence, knowledge is seen as basically existing privately within a person whereas information is more publicly available (Hill,1999; Russell, 1973; Drucker, 1993). The definitions of information mentioned in this section are summarised in the descriptions below:

Table 4.1 : Summarised Definitions of Information

Source	Summarised Definition
Ruben (1992)	'information-as-a thing' that has meaning of use for a particular human system
Belkin and Robertson (1976)	'information-as-a process' that transforms structures
Machlup (1983)	'information-as-thing-and-process'
Hayes (1969)	information as a product of manipulation
Blumentahl (1969)	data processed to convey meaning
Davis and Olson (1985)	data processed into a form that has meaning and value
Jungclaussen (1988) and Kempe (1986)	information is the meaning imparted by symbols and signs
Haefner (1999)	a “message” “understood” by an “information processing system (humans are considered as an information processing system)
Shanon (1949)	information is that which reduces uncertainty
Min(1999)	something that eliminates the uncertainty of the information recipient relative tot he information source
Vickery and Vickery (1987)	whatever that modifies the state of knowledge of the recipient
MacKay (1987)	information is what changes what a person knows
Hill (1999)	a category of meaningful concepts that modifies our state of knowledge

What can be derived from the various definitions of information is the notion that information is incorporated with meaning that, in general, has the potential to affect changes to the party receiving the information. Haefner (1999) mentions that the

changes is presently due to information being at various levels; the physical level, societal systems, as well as in information technology applications and large scale social-technical systems like the Internet.

Meaning has relation to value, which in turn can be tied to the situation and context in which the information is created and received. For Muslims, the meaning, value and context is determined and guided by the Islamic perspective mentioned in Chapter 2. An understanding of information through these aspects, with the idea to create an understanding of information that is created, given meaning, valued and received from an Islamic perspective is necessary. From here, Muslim content developers can be guided to come out with informational content for ICT applications that not only fulfills the needs of the Muslims, but also spreading the understanding of Islam to society and humanity at large.

4.3 Information and Meaning

Information, in any form that it exists and is understood, represents the meaning it holds, whether or not this meaning is finally received by the receiver. In the perspective of information systems, information is 'produced' as as a result of processing data. Initially, events occur which 'creates' the data. What is actually 'produced' when data is processed is the meaning that lies within the volumes of data, hence information is often described as 'meaningful data'. This can be related to the discussion whereby meaning embodied in the signs and symbols (which can be seen as representations of data) is then 'brought out' or 'understood ' and used for making decisions and guiding actions (Fenzl et.al., 1996). The meaning of signs is the reference to what the signs represent, which is semantic information. The usage or application of the signs is the method of

implementing the meaning, which refers to pragmatic information (Atmanspacher, 1999).

Ruben (1993) distinguishes three concepts of information as forms of representation. The first type, which he calls First Order Information, refers to artifacts and representation that exist in the environment in many forms such as raw data, stimuli, messages, cues which has in it potential meaning (he uses the term 'significance') but has not yet been utilised. Second Order Information are First Order Information that "has been transformed and configured for use by an individual". They are internalised and individualised appropriations and representations of the first type of information which can eventually become long-term personal constructs and rules. The last type, Third Order Information, refers to appropriations, representations and artifacts that are socially constructed, negotiated, validated and sanctioned. They form the shared information base of societies and other social systems.

Some points can be raised here for discussion. The 'move' from First Order Information to Second Order Information requires efforts at the individual level, relating back to the notion of forming meaning in the individual's mind. The meaning of information is thus said to be essentially constructed in the mind of a person (Thayer, 1993). This requires, among others, acts of contemplation in arriving to the meaning, something which is very much encouraged by Islam (Badi and Tajdin, 2005). The forming of Third Order Information is the extension of this individual effort in a long term collective manner involving different groups in the society such as leaders, policymakers, lawmakers, intellectuals, scientist, technocrats, professionals, community figures, educators, parents and many others. Upon completion of the construction and negotiation of meaning, it becomes an intrinsic property of a system, in the case the society (Banathy, 1999).

Eventually,it creates the context that both influences the shaping of meaning as well as acceptance, or rejection, of meaning. This relates context to values, which is discussed in a later section in this chapter.

Meaningful information will assist individuals on deciding the forms of behavior and action for the common good of the society. Society, will eventually have a certain level of stability, or 'self-organization'. This would be the purpose of the society so as not be at the mercy of uncontrolled individual whims and desires (Artigiani, 1999). Islam provides guidance to these efforts at the individual and society level when it asks man to think and contemplate about the meanings represented by the many signs mentioned in the Quran (Badi and Tajdin, 2005). The guidance is further extended in the grounded aims described by the *Maqāṣid al-Sharī'ah* that lead man to make decisions and formulate practices based on these aims.

From the perspective of ICT, information is seen as the content. ICT involves technologies and systems that in some cases assist human beings to 'produce' information as the representation of meaning, which is then communicated by means of technologies and systems. Another possible scenario is when the production of the information is done external from ICT by the human being and ICT then becomes a medium for presenting and disseminating information. In both cases information becomes the message, the content to be communicated. Attention is given to information because the meaning and purpose that is within the content would relate back to the human being as the party that is responsible for its production and communication. Questions arise on what kind of meaning is intended by the person responsible and where does this meaning come from. For the case of Muslim content creators, the ultimate form of meaning is meaning that brings one closer to Allah, in

realizing His existence as the Sole Creator and invoking man into submission to His guidance in living the life on this world. Therefore the purpose and intention on this matter is clear, which is to ensure this meaning is entrenched in the informational content and to strive for this meaning to be understood by the recipients of the information. Further discussions are presented in the following section.

4.4 The Concept of Information and Issues for Islamic consideration

Salthe (1999) mentions that the concept of meaning is important in having a common theoretical understanding of information. According to him, this can be achieved by looking into discussion in semiotics. The semiotic divisions of the concept information into syntax, semantics and pragmatics has been established and discussed by numerous scholars across the times, for example Morris (1955) and others mentioned in this section. Haefner (1999) states : “Information must be dealt with qualitatively and quantitatively at the syntactic, semantic and pragmatic levels” (p. xvi). Min (1999) describes the three levels in relation to Shannon's communications model by looking at the existence of information in a communications system. He identifies information as having the indispensable function of ridding the information recipients of uncertainties about the existence, characters and dynamic state of the information source.

The concept of information would begin with looking at signs. Signs are anything that can stand for some other thing. Signs can be natural , for example smoke (as a sign of fire). Conventional signs are signs that function as such because of cultural reasons, like words of languages, or road signs. According to the Swiss linguist, Ferdinand de Saussure, signs consist of a signifier (e.g. the word 'car') and a signified (the concept of the object that the word signifies, e.g the concept of a car). For the American philosopher Charles Sanders Pierce, signs would give a different consequence when

standing in for an object compared to the actual object itself. Therefore one has to interpret and distinguish the meanings represented by the sign, whether the meaning is immediately apparent or otherwise (Shank, 2008).

Morris (1955) describes the three dimensions of the concept of information as follows:

- Syntactics : the theory of the relation between the signs
- Semantics : the theory of the relation between the signs and the objects symbolized by them
- Pragmatics : the theory of the relation between the signs and their users

Information is normally linked with a particular carrier-medium which requires some form of signs, symbols or digits to represent the information. This is clearly seen in the case of ICT. The organization of these signs and symbols in accordance to certain rules of arrangement, i.e. the relationship between the signs, is the syntactic dimension of information (Küppers, 1996). It establishes some form of order but disregards the meaning of the signs and symbols, making it the most basic and most abstract form of information (Min. 1999)

The semantic dimension involves the content of information; the signs and what they represent, i.e. the meaning and purpose of the signs (Küppers, 1996; Zoglauer, 1996). The meaning is closely related to the receiver who is able to interpret and make use of the signs. Therefore there is a dependence between meaning and some characteristics of the receiver (Gernet, 1996).

The pragmatic dimension adds to this the capacity to have an impact on the recipients (Gernet, 1996) and initiate reaction from them (Küppers, 1996). If the receiver is not affected by the meaning, it can be said that a primary reason for this is the receiver does

not have the readiness, ability and characteristics to understand the meaning within the signs. At the higher level, pragmatics encompasses syntactics and semantics, thus becoming a unifying concept which is discussed below.

4.4.1 Pragmatics as a Unifying Concept and Context Dependency

Basically information is syntactic, semantic and pragmatic all at once. This comprehensive state of information exists when the systematic organization of signs and symbols conveys a certain meaning to the recipient which will in turn evoke an effect on the behaviour of the recipient (Min, 1999). Without fundamentally seeing the three as autonomous, Flückiger (1999) emphasizes that the semantic and pragmatic aspects of information are central to the concept of information.

The various dimensions are actually referring to the complete concept of information and in reality cannot be separated from one another. Küppers (1996) states, "…the semantic content of a symbol sequence is defined only in terms of its pragmatic relevance. This indissoluble connection of syntax, semantics and pragmatics lies behind the postulate that information can only ever be seen relative to an information-carrying context" (p.142).

Zoglauer (1996) states: "Semantic information becomes pragmatic information when it is embedded in the context of a social practice" (p. 204). Signs and symbols that exists in any form of meaningful arrangement and structure can be understood in a given context. Therefore, when discussing about information in reference to humans, in essence it actually pertains to pragmatic information. Thus, pragmatics is seen as a unifying concept.

In relation to this, Gernet (1996) mentions, “Information is always pragmatic information and can never be understood without reference to a certain context” (p. 160). Here, information is seen as dependent to the context in which it is sent and received. Küppers (1996) describes Carl Friedrich von Weizsäcker's two statements on context-dependence of information. The first statement – information is only that which is understood, means the receiver recognizes a series of symbols as information because the sender and receiver shares a common structure to understand the symbols as being information, thus implying the recipient has a certain foreknowledge of the symbols. For this basic reasons, the syntactic aspect of information cannot be separated from the semantic and pragmatic aspects. The second statement – information is only that which generates information, according to Küppers, establishes that the semantic component of information, is determined by the effect that the information has upon the recipient. In other words, the meaning of a sequence of symbols is defined by its pragmatic relevance, i.e. having effect on the recipient.

Relating to Hall (1976), context is referred to the situational and informational aspect of message sharing. Milward (2000) elaborates by saying that context not only involves what is being said but when, where and how messages are shared. Therefore, contexts concerns the informational content as well as aspects of time, place and process. Referring back to the statements by Weizsäcker, within a context information is understood because of the use of symbols and signs common to the sender and receiver, and information has meaning because it is relevant and invokes reaction from the receiver.

According to Haefner (1999), information has to take into consideration “the structural and material situation” of the structures that are receiving, processing and sending

messages (p.xiv). Both the sender and the receiver shape the content of the information. Information must be understood by the recipient in order for it to be considered as information by the receiving party. Information is accepted if the receiver sees it has any pragmatic relevance to him (Küppers, 1996). As stressed by Weizenbaum (1984), “The information content of a message is not a function of the message alone but depends crucially on the state of knowledge, on the expectations, of the receiver” (p.209). Therefore, some attention must be given to the context of the recipient.

4.4.2 Information and the Recipient

As mentioned above, the properties of the user has influence on the acceptance of the meaning of information. (Gernet, 1996). He mentions possible effects of a message when received. One possibility is the messages can be interpreted in countless ways by the receiver that can be different from the intention of the sender. Another is the receiver can refuse to accept a message if it contradicts with a preconceived idea, which among others are based on pre-existing information in the receiver.

Therefore, information on the recipient side may not always be the same as what the sender intends (Min, 1999; Radford, 2005). In addition, a particular recipient is influenced by previous information and purposes which may be different than that of other recipients, which affects the kind and amount of information they receive even though it originates from the same information source. Nevertheless, within any given context, the recipient may understand, to a certain extent, the meaning that the information source intends to convey. This understanding is affected by the recipient's pre-existing information. As a result, 'new' information that would determine his behaviour could be produced by the recipient, as compared to that conveyed by the source, by way of inference (Min, 1999). Therefore, the recipient has thus developed

what Min calls 'self-creation ability'. If the recipient is able to know, either directly or indirectly, what the sender's intention is, then the recipient can make comparisons and, if desired, any mismatch can be identified and the behaviour can be further revised. Thus, according to Min, 'self-study capability' is formed.

4.4.3 Issues for Islamic Consideration

In light of the discussions mentioned above, some observations can be made from the Islamic perspective. Signs that are observed by man in this world should ultimately, either directly or indirectly, point back to Allah as the Sole and Ever Powerful Creator. This kind of meaning is to be interpreted by man which places Allah above the signs, which are merely just signs. Problems would exist when the signs are seen as taking the place of Allah, thus also taking in the meaning itself. This results in idolatry and belief that other elements posses godly powers and position. Therefore, referring to the semiotic view, whether the signs are natural or conventional, the signs are just as indicators for the meaning but do not posses it. At the pragmatic level, this form of meaning will contribute to producing the kind of impact and reaction that is in accordance with Islam. This is the understanding that should exist when looking information from an Islamic perspective. The recipient of information should be equipped with pre-existing information that would allow them to evaluate information in an Islamic manner. Muslims, in creating and sending information, should try to make their intention known to potential receivers. Like wise, receivers should strive to identify the intention in order to understand the meaning of the information. An issue can be raised at this point; when the recipient is capable of 'self-creation' and 'self-study' when assisted by his pre-existing information, what then shapes this pre-existing information in the very beginning? This points to the very nature and character of the recipient, together with any prior education, information or knowledge possessed. For

Muslims, these should be based on Islamic belief and values at the fundamental level. Thus a situation of information affecting recipients and recipients accepting (or rejecting) information emerges, and again the role of both the sender and the receiver in shaping the content of the information comes into picture.

For the Muslim ICT content developer, a dual task is at hand. In developing the information content, the intention to impart Islamic meanings should be in place. In addition, he should follow through to strive to make the receivers understands the meaning of the information, among others by conveying his intention directly or indirectly, and using signs, symbols and representations that is common or can be easily understood, as well as in multiple forms of representations (e.g. multimedia) and various languages. The understood meaning eventually affects the receivers belief, attitude and behaviour in their pursuit of goals in life, whether abstract or specific, in which Min (1999) refers to these goals as values. Therefore, in this sense, meaning has a role in shaping values. In the following section, values will be seen as influencing meaning of information as well as the social context in which the meaning is understood. It should be highlighted here that creating a context in which Islamic meaning is properly understood is an ongoing complex task. This involves various parties all the way form leaders and policymakers down to educators, parents and individuals themselves, in which Muslim ICT content developers are but one party playing his part in developing informational content for ICT.

4.5 Information, Values and Context

A review by Badendoch et.al (1994) on information and values identifies four broad themes of value of information:

1. Econometric : this kind of value of information is due to the fact that it has a vital role in decision making and predicting future outcomes that are economic in nature.
2. Organizational and resource management: the value of information is associated to the perspective of information as a resource that must be managed for the effectiveness of an organization. It is tied to activities in the organization and has a strategic significance in improving competitiveness.
3. Costing and pricing: this relates to aspects of value that are important to bodies that supply and manage funding for information service providers. This generally concerns matters like costs covering, returns on investment, income generation, profit making and others. The value of information is prescribed by how much someone is prepared to pay for it. However due to the intangible nature of information, this value is not significantly related to costs incurred.
4. Social and cultural values of information: unlike the previous three which are more economic and materialistic in nature, this theme covers a wide area of concern in addressing the value of information. It merits further discussions that are in line with the purpose of this study, therefore the discussion of values will embark from this theme.

Values play an important role in preserving meaningful information. They give a special position to what is perceived to have significant meaning. They emerge in a stable and self-organized society. Their origins are divine in nature and enable individuals within the society to become aware of the qualitative distinction of “good” and “evil” to information, whereby “good” and “evil” exist in social structures (Artigiani, 1999). Badendoch et.al.(1994) also stresses that values for information have strong association with the society. Therefore, values, and consequently meaningful information, are

closely connected to influences from the society. Another point to note that information also has the potential to influence the values in the society (Schement, 1993), therefore the connection between information and values here is reciprocal in nature. This further highlights the importance of values for information.

The challenge for Muslims is to position the Islamic values within the society through information in order to provide meaning to information itself that is Islamic in nature, which is further discussed below. This is different to what Min had proposed that information affects values. Islam emphasizes more on the origin of value, which is from Allah, which supersedes any social influence on values. This distinction should be kept in mind when discussing values in the society.

Badendoch et.al (1994) mention that the overarching value of information in a socio-cultural context is the sustainment and communication of culture for the benefit of present and future generations. Min (1999) contends that information preserved in the written form by the society would eventually become “cultural information banks” and information would become relatively independent that would enable the society to pass on its cultural legacy (p.158). With the evident of ICT, especially multimedia technology, written form is not the only method of creating these cultural information banks. Information can be recorded in visual, audio and video form. The nature of passing on the legacy of cultural meaning is more spontaneous, widespread and voluminous. The legacy is also vulnerable to losing its 'legacy status' when the information is 'preserved' in computer databases which are susceptible to obliteration, despite the security and protection measures put in place. Therefore, there is much to be concerned about the kind of meaning being created, preserved and disseminated through

ICT. For Muslim ICT developers and content creators, this concern about meaning is guided by the Islamic perspective as mentioned earlier.

This point is also highlighted by Anees (1988) when he raises issues of the dominance of Western culture in the 'information explosion' brought about by the widespread use of ICT in creating, processing, transmitting and disseminating information, creating a challenge for Islam and the Muslims. Within the Islamic context, information on aspects of Islamic teachings is required to serve the needs of the Muslim ummah, preservation of the Islamic way of life and for *da'wah* (propagation) to others. Therefore is imperative to have a value system that considers religious development in the society as a motive. This is an instance where the *Maqāṣid al-Sharī'ah* would play its role in shaping the value system for the society, for example in creating a balance between the material and non-material value of information. Islam does not negate the material needs, but it should not be at the expense of other important needs of the society as described by the *Maqāṣid al-Sharī'ah*.

In looking at values and context, Badendoch et. al. (1994) mentions that “value is a social construct, a shared belief which may vary in different social, economic, political and philosophical context” (p. 16). On one part, value for information relies on the context in which the information is received and used (Badendoch, 1994; Repo, 1989; Taylor 1986). In addition, the context in which the information is created is also of equal importance (Norhayati et.al. 2003). This relates back to the earlier discussion on information and context.

Apart form the various context mentioned previously by Badendoch, another context that can be added is the context of religious understanding and practice. An example of

this can be seen when Anees (1988) reflects on the early Muslim society whereby information was viewed as a moral responsibility and not a traded commodity. He mentions the practice of the detailed methodology of the science of Prophetic traditions (*'ilm al-hadith*) and its branch of biographical science (*'ilm al-rijal*). These sciences meticulously elaborate the many facets related to the Prophetic traditions (as the content) and aspects related to its context, among others its different modes of transmission, period of transmission, and the background of the transmitters themselves. The aim is preservation of accuracy at the highest level possible, which in the end determine the value and position of the *hadith*. Hence, the value of information in this respect is determined within the Islamic context.

Since value is closely related to diverse contexts, the issue arises as to what kind of context should influence the shaping of information and its values. This context is described by the criteria that is used to assess the value of information (Badendoch, 1994). In other words, the criteria will determine the value of information. For Muslims ICT practitioners, the criteria should be Islamic in nature and the information is valued within the Islamic context. The Islamic context is a 'constant context' which is based on fundamental principles and at the same time considers the the needs of changing situations as long as they do not go against the fundamental principles. As mentioned earlier, values in Islam has divine origins, so values are more of a 'religious' than 'social' construct. However, as a comprehensive way of life, the value system of Islam does not neglect physical and material needs, as described in the *Maqāṣid al-Sharī'ah* (Kamali, 2008).

A main criteria of the Islamic context is the realization of Allah as the sole Creator and Sustainer of life. The *Qurān* mentions of the signs (*āyāt*) that exemplifies this position,

for which man is to ponder upon these signs about His greatness, power and sole authority over all creations. Thus, it is the role of Muslims to propagate the informational content shaped by Islamic values with the purpose to make common the remembrance of God in the society, which also involves referring to the aims of the *Sharī'ah* and *Maqāṣid al-Sharī'ah* since implementing them refers back to God. In the realm of ICT, the Muslim ICT content developers should ensure this materializes into social reality. Within such context, individuals in the society would have a shared belief based on Islamic values (an achievement in its own right if such is achieved) shaped by the aforementioned informational content that would further have influence on the creation of information that is infused with Islamic values. In addition, when they receive any information, they will evaluate the information in terms of its Islamic value and act accordingly. This ongoing cycle of information influencing social context and context shaping information needs to be empowered and strengthened by making use of ICT capabilities. Again, this highlights the role of the Muslim ICT content developer with the discussions in this chapter puts this into perspective.

Based on the discussion presented here and earlier sections regarding values, the shaping of meaning for information, society and context, the following observations can be made. Context and society generally plays a major role in shaping meaning for information (Ruben, 1993; Banathy, 1999; Gernet, 1996). At the same time, meaningful informational has an influence on the values possessed by the society (Artigiani, 1999; Schement, 1993). On the other hand, social context also shapes values (Artigiani 1999; Badendoch et.al., 1994) which in turn the influences how information is created, understood and used (Norhayati et.al. 2003; Badendoch et. al, 1994; Repo, 1989; Taylor 1986). Therefore, from here it is understood that with regards to values, they are

influenced either by the social context or meaningful information, and simultaneously values influence the two as well. This is depicted in the following figure:

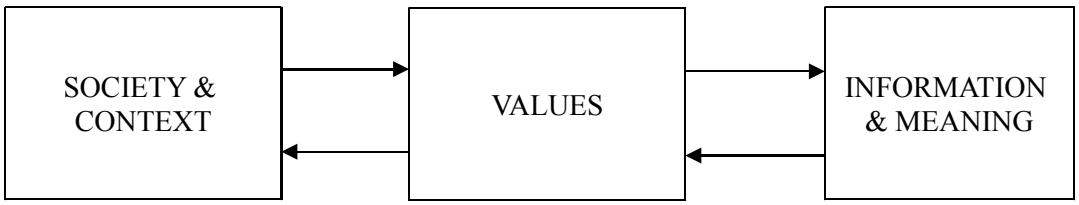

Figure 4.1 : The Relation between Society and Context, Values, and Information and Meaning

In contrast, as mentioned earlier, values in Islam are of divine origin from Allah, taking precedence over any other form of influence on values. The values are based on the fundamental paradigm of *Tawḥīd*, aiming at bringing man to the consciousness of Allah as the sole Almighty Creator and the necessity for man to take heed of the guidelines meant for man's attainment of a harmonious life. The Islamic values are inculcated in the social context through the dissemination of the Islamic sources, particularly the revelation (*Qurān* and *Sunnah*). Practice of the *Sharī'ah* and the *Maqāṣid* are the realisation of this process. The meaning of Islam is conveyed by the Prophets and later by Muslims scholars. Within such a context, recipients should be able to understand better the Islamic meaning. Any meaning of information that emerges from this social context would receive influence from the values present in the context. Form here, the meaningful information may influence back the social context and the cycle that preserves the value becomes apparent. This situation is shown in the following figure:

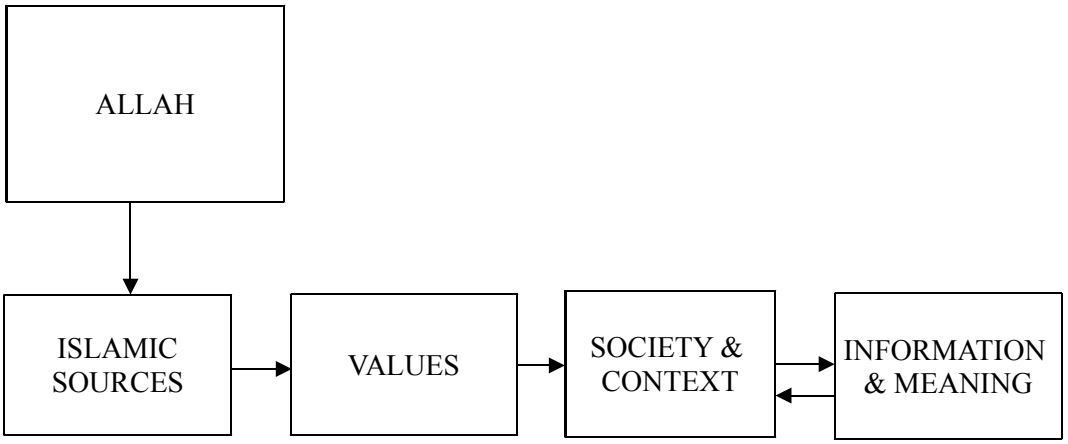

Figure 4.2 : The Relation between Society and Context, Values, and Information and Meaning : an Islamic Perspective

This figure portrays an idealistic situation that all Muslims, including informational content developers should attempt for.

4.6 A Perspective on Signs, Information and Technology

Albert Borgmann proposes a slightly different description of information using the notion of signs. This is described in his work *Holding on to Reality: the Nature of Information at the turn of the Millennium,* which has been reviewed by Verbeek (2002). However, Borgmann's analysis is not totally detached from the previous discussions. His work is discussed here to put into perspective a relation between reality, signs, information and technology. It relates back to the previous discussion on the concept of information by positioning the existence of information in connection with reality, as well as highlighting the role of technology in producing a conception of information. He mention signs as a "promise of some thing" (Verbeek, 2002, p. 72). This can be referred to the meaning of the sign as previously discussed. Signs, within a certain context, inform people about reality of the world they live in. Information is then seen as the

relationship between humans and reality. From here, he mentions of three types of information.

The first type is natural information, which is information about reality. This type of information consist of 'natural signs', signs that are found in reality itself. He gives the example of smoke as an indication that there is fire. He further describes, “a sign cannot contain a thing entire; but, given human intelligence, it can convey and provoke the impression a thing would leave on a person” (Verbeek, 2002, p. 72). This can be related to the encouragement by Islam to contemplate on the signs mentioned in the *Qurān*, which among others include 'natural' phenomena such as the creation of the heavens and earth.

The second type of information is cultural information, or information for reality (Verbeek, 2002, p.73). 'Conventional signs' convey this type of information. They are signs not found in reality but created by people. Examples given are letters, texts, musical notes, and scores. Since it is not about reality, cultural information needs to be 'realised', e.g. text need to be read. However, one has to be careful with the conventional signs since they may distract and confuse people from reality. Brogmann's argument here is similar to what is commonly described as information overload, when one is bombarded with information that is not useful or relevant to a person in a particular context.

The third type is technological information (Verbeek, 2002, p.73), which is information produced by technological devices. At present, these technological devices would commonly refer to ICT. Compared to natural information and cultural information, technological information is information as reality, i.e. it creates another reality for

humans. For example, he mentions that the contents of music when playing a compact disc is realized as music itself. To a certain extent, the same thing can be said about the Internet. Even though within certain limitations, people see cyberworld and all its contents and activities as part of daily life. In other words, an 'alternate' reality is created through technology and by accepting technological information. The issue of technology constructing reality is also echoed in Floyd (1992). Borgmann sees this other reality as having a potential to replace actual reality and detach humans from accessing it since technological information does not contain any direct connection to actual reality but on the other hand, as Verbeek puts it, “is easier to experience and qualitatively superior” (p. 74). To enjoy a play, instead of going to the theatre, one can view a DVD containing a digital recording of the play through his home theatre system, enjoying sound and sight enhanced by technology. Technology allows some form of 'manipulation' for improvements. Brogmann highlights that digitized information is more flexible, easily stored in abundance, and can be processed and displayed by sophisticated high technology devices.

However, the difference of the two realities has to be kept in mind. The issue arises when people prefer to embrace technological information, therefore substituting actual reality with a technological one. In some cases, this may prove to be beneficial, for example one does not have to actually go to the bank to experience the 'reality' of doing financial transactions over the counter when the same transactions can be done by accepting and responding to the information provided on the banks website. However, the problem of identity theft through bogus emails that masquerade as genuine banking requests happens when the person believes in the false 'reality' behind those email messages. In situations like this, technology has allowed manipulation to happen on the negative side. In addition, the other two types of information have lost their position in

expressing reality and risk to become, as mentioned by Verbeek “mere utilities of technological information” (p. 74). Technological information is also dependent on the technology that produces it, and in extension, affected by the technology's limitation. Obsolescence is one of them, as well as limited representation of the reality. For example, choosing a holiday destination purely based on information from the Internet may not produce desirable outcomes.

Therefore, Brogmann feels that the flexibility of technological information should be dealt with some caution in finding the right balancing between information and reality. It should not compromise, in Brogmann's words, “ the stability of the things and practices that have served us well and we continue to depend on for our material and spiritual well-being” (Verbeek, 2002, p.74). It is interesting to note here that the emphasis on creating and preserving stability was also mentioned earlier by Artigiani (1999) when he stresses on the role of meaningful information in protecting the society from uncontrolled desires. Therefore, technological information has to carry meaning at the same time. This clearly becomes a signal for Muslim content developers to infuse the Islamic meaning in the information they are putting into ICT as an effort to preserve the material and spiritual well being of the society.

4.7 Āyāt (signs) in the *Qurān*, Meaning and Context

Muslims, and man in general, need to have a frame of reference to deal with information in a proper perspective. Ahmad Kamil (1989) mentions this frame of reference as the “information base” for having an “ethical being” that is guided by it in his thinking and actions. He likens the information base to the operating system of a computer, describes an ethical being as “a man who obeys laws and follows a set of rules” (p. 2). From the Islamic perspective, an ethical being is one who submits to Allah,

and adheres to His Laws (Ahmad Kamil, 1989, p.6). The *Qurān* would be the ultimate provider for an information base of this nature. According to him, such an information base supplies fundamental meanings and facts to form a worldview that "represent concepts and themes, which provide comprehensive, but precise guidelines about the nature of reality; the relationship between man, Allah and other creations" (p.2) that would prompt man to act among behavioural alternatives that is guided by a set of principles. Among verses that stresses the *Qurān* as the definitive guidance for man are 2:2, 27:76-77, 10:57. The verses mention the *Qurān* as providing guidance for those who believe and fear Allah, explaining to man on matters that they find disagreement amongst themselves. Tafsir al-Jalalayn mentions that the admonition mentioned in verse 10:57 refers to the Book, i.e the *Qurān* that mentions in it what is permissible and what is not, heals the heart from corrupt beliefs and uncertainties, and provides guidance from committing errors.

Man's surrounding environment provides a wealth of information, much of which needs to be analysed to come out with the meaning of the information (Ahmad Kamil, 1989, p.2). This brings back the concept of signs into perspective. Signs are "everything that, on the grounds of a previously established social convention, can be taken as standing for something else" (Eco, 1976, p. 16). Viewing this form an Islamic perspective, the 'social convention' would have roots in the Islamic fundamentals and teachings. Referring back to the *Qurān* as the source of guidance, verses in the *Qurān*, for example 38:29, have mentioned about *āyāt* (signs) for man to examine and learn the meanings behind what is overtly mentioned in the verses of the *Qurān*.

The word *āyāt* is mentioned 382 times in various forms, which includes in singular, dual or plural, with prefixes, suffixes and both prefixes and suffixes ('Abd Al-Baqi, 1992;

Kheder, 2005). Al-Edrus (1990) has discussed the concept of *āyāt* (signs) as mentioned in the *Qurān*, which has two meanings, linguistic and non linguistic, giving exceptional importance to this concept that is unique to the *Qurān*. According to him, this can be seen from the theological point of view, whereby the *āyāt* are signs that indicate the greatness of Allah as the one and only God. The signs are not gods or deities that are worshiped as intermediaries, no matter how grand or majestic they may seem. The following discussions follows the categories of linguistic and non linguistic meaning of *āyāt*, which in actual fact are connected to each other and ultimately pointing back to Allah.

4.7.1 Linguistic meaning of *Āyāt* : Qurānic Verses as Signs

On the linguistic meaning, *āyāt* literally refers to the verses of the *Qurān* itself, so the translation for *āyāt* here is 'verses'. This is can be seen for example in verses 3:7 and 8:2-4. The verses of the *Qurān* in totality are all signs that point back to Allah since the *Qurān* itself is His revelation for man as guidance for living his life in this world. A study of this category of *āyāt* would relate to a comprehensive study of the whole *Qurān* itself, which is very relevant but beyond the capacity and scope of this study. Indeed as the primary source of Islam, the *Qurān* is the source of knowledge in which Allah teaches man through His revelation. What man learns from the verses of the *Qurān* covers the totality of his life, physical and spiritual, material and emotional, individual and social, mental and practical. This study hopes to take shelter under the shade of the *Qurān* in creating an Islamic understanding for ICT.

4.7.2 *Āyāt* as Signs: Phenomena of Creation

The other connotation of *āyāt* in the *Qurān* is non-lingusitic (Al-Edrus, 1990, pp.1,71). These *āyāt* are presented in the verses of the *Qurān* in the form of phenomena of

creation that exist in man himself as well as the natural environment. It also comes in the form of historical episodes that are mentioned in the verses of the *Qurān*. This types of *āyāt* is chosen for the purpose of this study in presenting a perspective for issues of information, embarking on the concept of *āyāt* as signs mentioned in the *Qurān*. This perspective is also extended to the informational content that is developed and used in ICT.

An example of verses that describe *āyāt* in the form of phenomena of creation in the Qurān is 45:3-5. The signs mentioned here are the creation of the heavens and the earth, the creation of man and animals, the alternation of night and day, the sending down of sustenance from the sky that revives the dead earth, and the changes of the winds. In Tafsir al-Jalalayn, 'sustenance' mentioned in this verse refers to rain. These are signs for people who understand, and therefore have faith in Allah. Verses 3:190-191 also mention of similar signs that evokes man to praise Allah after contemplating and understanding the meaning of the signs. The same kind of people are addressed in verse 13:4 that mentions signs in the form of the different tracts of earth, and various kinds of crops and plants that are watered with the same water and yielding different kinds of harvest. These verses explain the nature of those who are able to grasp the meaning of the signs and their remembrance, hope and affection to the Almighty God. They are those who understand the meaning of the signs and thus have faith in Allah.

In verse 13:3, the creation of the mountains, rivers, fruits, night and day are mentioned. Tafsir Jalalayn mentions that these signs are for those who reflect upon Allah's handiwork. This also concerns the signs mentioned in verse 2:266 on the creation of gardens with date palms, vines and streams.

Signs are normally perceived through the senses. The Qurān has this same approach in bringing man's attention to learn the meaning of the *āyāt.* The signs mentioned in verse 10:67 are for people who listen, i.e. hear the proofs of the signs and take lessons from them, which would lead them to realize the greatness of Allah as their Creator and Sustainer. This is as mentioned in Tafsir Ibn Kathir. In another instance, the sense of sight is mentioned for the same purpose, in verse 51:20-21 for man to see the signs and thus strengthening their faith.

4.7.3 *Āyāt* as Signs: Historical episodes

Another kind *āyāt* of is the in the form of episodes from history that are mentioned in the *Qurān*. An example is the destruction of Firaun (Pharaoh of Egypt) of the time of Prophet Musa a.s. and that of his nation, which is mentioned in the verses 11:96-103. This form of sign serves as a lesson for those who fear the punishments of the Hereafter that will befall anyone who defies Allah, as highlighted in verse 11:102-103.

Another example is on the people of Prophet Sālih a.s., mentioned in verses 27:45-53. The punishment they received is due to their own disobedience and becomes a sign for the later generations.

The story of destruction of the people of Prophet Lūṭ a.s. and their cities of Sodom and Gomorrah are mentioned in the *Qurān* for example in verse 15:76-77. In verse 29:34-35, a group of angels sent by Allah informs Prophet Lūṭ a.s. Of the destruction that will befall the cities. These people were destroyed because of their preference for homosexuality and disregarding the message brought to them by their prophet. This serves as a sign for man as to what has befallen upon those who go against Allah and His guidance, in this case regarding sexual orientation and behaviour. In Tafsir Al-

Jalalayn, it is mentioned that verse 51:37 sets this sign as a warning for those who fear the painful chastisement (*al-'azāb al-alīm*), so that man may not repeat what the sinful people had done.

The lessons that can be learned from the historical episodes mentioned in the *Qurān* are the reasons the episodes are presented as signs to be reflected, bringing man back to the path of Allah (Badi and Tajdin, 2005). This refers to verse 12:111 about the stories mentioned in the *Qurān* as guidance for man.

4.7.4 *Āyāt* as Guidance for Information Content Development

The verses, in presenting the *āyāt*, comes with the urge for the readers towards different forms of contemplation. For example root phrases like *tafakkur* (reflection, contemplation), *tafaqquh* (understand, comprehend), *ta'aqqul* (comprehension, reasoning using the mind) that describe the target group of the signs or actions that the signs evoke signifies that the *āyāt* are described with the purpose to invite man the reader to think and try to understand the meaning of the signs. This is what Al-Edrus (1990) mentions as *fikr* (reflection) and *dhikir* (contemplation and remembrance of God) whereby the meaning of the *āyāt* can only be grasped by those who have *'aql* (reason/intellect) and can reflect (*fikr*), what he mentions as the activity of *fikr fi al-ayat* (reflecting on the signs). Understanding is also required to grasp the meaning of sign . He continues in saying that ".....in the Quranic context the knowledge of the signs refers to the knowledge ingrained in human nature, that was given to man in the very moment of his creation"(p.73). In reflecting over the *āyāt*, one will rekindle the inner *fitrah* (innate disposition) and remember about the Creator of the *āyāt*, thus become closer to Him (Badi and Tajdin). This is the realization of God consciousness that constitutes the Islamic meaning (Al-Edrus, 1990).

Consequently, reflecting on the *āyāt* and their meanings will instill and strengthen one's belief in Allah. The connection is explained distinctly in verses 6:97-99 that mention various forms of *āyāt* and the kinds of people whom the *āyāt* are aimed at. Regarding these verses, Tafsir Ibn Kathir describes, in verse 6: 97, those who know (*ya'lamūn*), are who have sound minds and are able to identify the truth and avoid falsehood. In verse 6:98, the people who understand (*yafqahūn*) refers to those who comprehend and understand Allah's words and its meanings. Verse 6:99 mentions the signs are for those who believe (*yu'minūn*) in Allah and obey His Messengers. Abdullah Yusuf Ali (1401H) has commented on the beauty of the description in the three verses, as follows:

> "In verse 97 it is : "We detail Our Signs for people who *know*" . So far we were speaking of the things we see around us every day. Knowledge is the appropriate instrument for these things. In verse 98 we read: "We detail Our Signs for people who *understand*". Understanding is a higher faculty than knowledge, and is necessary for seeing the mystery and meaning of this life. At the end of verse 99 we have: "In these things there are Signs for people who *believe*". Here we are speaking of the real fruits of spiritual Life. For them, Faith is necessary, as bringing us nearer to Allah" (p. 371)

With faith, the characteristic of *taqwa* (fear and obedience to God) emerges. It is not the feeling of intimidation of Allah, but the emotion of affection in wanting to obey His commands and abstaining from His prohibitions. As understood from verse 10:6, observing the creations created by Allah become signs for those who fear Him, i.e. those with *taqwa*.

As mentioned earlier, for Muslims, the meanings of information should ultimately bring one closer to the realization of Allah as the one and only God and the submission of man to Him. This is the primary reaction that the signs should invoke. Thus, the signs are not just mere signs. The phrases mentioned above also describe the characteristics of people that have the capacity to grasp the meaning of the *āyāt*. The *Qurān*, on the one hand, uses signs that are common to humans. Al-Edrus (1990) mentions that "...a sign is only understood only when one has knowledge of what it stands for" (p.73). Hence, the dependence between meaning and characteristics of the receiver is stressed (Gernet, 1996). Reflections can be made whether these characteristics exist within the society. The characteristics is also needed for a suitable context to appear that can further influence the development of positive and Islamic values for information. As depicted in Figure 4.2 earlier, this would then return to the point before, hence the whole process becomes a continuous cycle.

Exploring the meaning of *āyāt* is vital in having a concept of information in Islam that can create a harmonious condition in the society. The *Qurān* warns man on ignoring the *āyāt*, as mentioned in verses 2:211 and 36:45-46. The verses explain that man are offered the signs, but there are those who turn their backs on them. For those who ignore the signs, and substitute the guidance from the signs with that of others, then they are warned about Allah's punishment on them which can be in various forms either in this world, like society being plagued with problems and disharmony, or punishments in the Hereafter.

From the discussion above on the *āyāt* in the *Qurān*, fundamental lessons can be referred to the development of information content for ICT. First, Muslim content developers should have the *niyyah* to instill the Islamic values and meaning into the

informational content developed for ICT applications. This relates to the aim of the *Sharī'ah* and *Maqāṣid al-Sharī'ah* for information content development. Second, the social context needs to be equipped with the capability to comprehend the meaning of the Qurānic *āyāt*. This might require a more wide-ranging approach of awareness, policy formulation, education and development, one of which the first lesson would come back into the picture. With this regard, Muslim content developers can refer to the *āyāt* in guiding them to develop informational content, whereby the information should :

- contribute to the incorporation of Islamic values in the social context
- establish the characteristics of people who can understand the meaning in the *āyāt*
- invoke and invite people towards action, thought and belief that brings about the understanding of the meaning in the *āyāt*

Even though man is innately given the nature for goodness and the awareness of God, the question of whether a person or society receives Islam is beyond the capacity of man, therefore Muslims should always endeavour for that purpose.

4.8 Conclusion

This chapter has presented some discussions on the concept of information and how *āyāt* in the *Qurān* can guide the development of information content. Hofkirchner (1999) mentions, "...the kind of self-organization needed to overcome (socio-economic, technological and environmental) crises requires actions of conscious individuals and will not emerge from technological progress alone." (p.xxiii). This statement can be seen as calling for Muslim content developers to take to the task of establishing the Islamic meaning in the society through informational content. Maybe this is the kind of "information society" that need to be developed: the kind that has the characteristics

that enables them to receive and understand the meaning of the Qurānic message, and continue to influence Islamic content development.

As suggested in this chapter, presentation of the many *āyāt* in the *Qurān* serves as a guidance for incorporating Islamic values and meaning in information content. Nevertheless, the quotation form Hofkirchner above does not totally neglect the position of technology. This is indeed the situation faced by the society, whereby the role of technology in society is continuously expanding. The next chapter looks into issues concerning the relation between man and technology, and how Islamic values would relate to the development of technology and ICT.

CHAPTER 5

TECHNOLOGYAND HUMANS: FORMING AN ISLAMIC PERSPECTIVE FOR THE SHAPING OF TECHNOLOGY AND ICT

5.1 Introduction

This chapter looks into the relation between man and technology, and how society, and later Islamic values, would relate to the development of technology and ICT. The relation between man and technology is an ever ongoing matter of interest. Western perspectives have underscored fundamental concerns on the situation of humans and technology, as can be seen in the works of Karl Marx, Jaques Ellul, Martin Heidegger, Lewis Mumford and others. Langdon Winner (1993) provides a summary of these perspectives in stating that traditional Marxism gives attention to the plight of the working class and suspected manipulation of capital, and consequently technological development, by the elites. On the other hand, liberalist sees the promise of relative wealth for all through technology-driven economic growth. Proponents of Heidegger hope “that there might someday be a “turning” within the history of being to save humanity from the perils of modernity”. Mumford has the aspiration for a more humane form of technology taking over the mechanistic modern age. For Ellul, there is the prospect that humanity will turn back to God after being forgiven for neglecting Him and giving too much attention and faith to technological advancements.

Embarking from these notions, issues related to humans and the development and use of ICT has to be put into perspective to avoid being overwhelmed by the many issues of today’s high-tech society. ICT as the 'universal' technology is seamlessly blended into the daily lives of humans. In such a situation, humans as God's created beings must triumph and be dominant, and not to be swayed by the fascinations portrayed by

technology. Herein lays a calling for the Muslim technologist. Guided by the Islamic values, they not only have a role in charting the future of technology, but also extend a hand to those who have succumbed to its addiction, with a hope for a high-tech life that is harmonious with the nature of man.

5.2 Defining Technology

The term technology has connections to science, economy and art (Mackenzie and Wajcman, 1985), as can be seen in the following discussions. The relation with science and economy is obvious when common meanings of technology would relate it to the practical or industrial application of science, as in the following definitions of technology:

"the practice, description and terminology of any or all of the applied sciences which have practical value and/or industrial use" (The Wordsworth Dictionary of Science and Technology, 1995, p. 888)

"new machines, equipment and ways of doing things that are based on modern knowledge about science and computers" (Longman Dictionary of Contemporary English, 2003, p.1704)

Mackenzie and Wajcman (1985) identifies three different layers of meaning to the word technology. At the most basic level, technology refers to physical objects or the 'hardware', e.g. cars, vacuum cleaners, computers. At the second level, technology refers to human activities and the objects related to them. In this sense, technology constitutes of a human subject and a material object (Grant, 1995). For the meaning at this level, computer technology would involve what people do with computers, for

example programming, as well as the computers themselves. Similarly, Lawson (2008) makes reference to the technical activity of "harnessing the intrinsic powers of material artefacts in order to extend human capabilities" when he explains technology as "the material objects that are the (material) conditions and results of this (technical) activity" (p. 59). The third level mentioned by Mackenzie and Wajcman places technology as the 'know-how', i.e. the knowledge on the activities concerning the objects in term of use, maintenance, design and development. Without this knowledge, hardware would be meaningless things. The meaning of technology as knowledge relates back to the old and long standing reference of technology with arts, where technology is referred to as "systematic knowledge of the practical arts" (p. 4). The Oxford English Dictionary gives definitions of technology as "a discourse or treatise on an art or arts" and "the scientific study of the practical or industrial arts" (2nd edition, 1989, Vol. XVII p. 705). Another similar, more contemporary meaning given to technology is :

"systematic knowledge of and its application to industrial processes; closely related to engineering and science" (McGraw-Hill Dictionary of Scientific and Technical Terms, 6th edition, 2003 p.2109)

The three layers mentioned above are similar to the opinion of Carl Mitcham (1978) that definitions of technology should be viewed with regards to three aspects, "technology-as-knowledge, technology-as-process, and technology-as-product – or thoughts, activities, and objects" (p.233).

By looking at all the definitions mentioned above, they suggest that technology constitutes knowledge, practices and physical objects. These elements are used to find solutions that humans face in their daily lives. Hence, technology is also, as Larry

Hickman (2001) mentions, “the intelligent production of new tools, including conceptual and ideational ones, for dealing with problematic situations” (p. 183).

Technological endeavours intend to achieve solutions to problematic situations that would suit the livelihood of humans. Therefore, according to Herdin et.al. (2007) technology is often considered as an artificially created means to a certain end, “to fulfil the need to produce something that is later to be consumed” by the user. Technology also includes “the way in which a goal is reached and which involves the use of means” (p.55). Therefore, in this sense technology is the ways and means of reaching a particular goal. ICT is essentially seen as a form of technology with a rather wide-ranging reach and influence since it involves fundamental elements of humanity, i.e. information and communication. ICT in this sense becomes the means, not only as a tool but also in the form of human activity and know-how, to achieve the purpose of processing, managing and communicating information. As a form of technology, issues pertaining to its use, design and development would frame it in very similar situations as other technologies. The position of man, and in extension society and culture, is central as the living element in the technology equation. The following sections present discussions on how technology affects and is shaped by these living elements.

5.3 Technology and Neutrality

In its relation with human beings, one form of understanding of technology is that technology is a neutral entity. The idea of technology being neutral generally refers to the instrumental theory with the notion “that the subjects of action can be defined independently of their means" (Feenberg, 2002, p.63). Instrumental theory sees technology as ‘tools’ that serve the purposes set by their users. Technology is hence ‘neutral’ without having any values of its own. In other words, it becomes a neutral and

indifferent means to achieve a variety of possible ends. The social context in which technology exist has no significance on it. Acceptance or rejection of technologies is thus based upon external elements, for example moral or religious values. These non-technical values would create some limitations for technology, but not transform it (Feenberg, 2002).

Many scholars disagree to the neutrality of technology. The works of Langdon Winner (1999, originally published in 1980) and many others mentioned in the following section have elaborated on the social and political nature of the design process. Tiles and Oberdiek (1995) and Wang (1998) have criticized this theory by asserting that it put the burden on the users of technology to ascribe the value of the technology and unjustifiably ignores the intention, values and social understanding of those who design, develop, market and control the technology. Not only that, the theory seems to 'overlook the understanding of users, consumers, beneficiaries, victims and those deeply affected by technology' (Tiles and Oberdiek, 1995). It denies any form of agency for technology since it is viewed as a powerless, and unchanging entity (Tapia, 2003). In sum, the notion of neutrality of technology negates the situation of a two-way relationship between society and culture with technology, which is discussed in the section on the shaping of technology.

Substantive theory, on the other hand, sees technology as more deterministic. Technology is a force that treats the social sphere as an object, taking control over any pretechnological aspect of social and cultural life (Feenberg, 2002). This theory is well treated in the works of Jacques Ellul and Martin Heidegger. Ellul sees the 'technical phenomenon' as the central feature of society and that 'technique' has become 'autonomous' (1964). Heidegger mentions that as technology restructures society, the

whole world including humans become ‘standing reserves’, reduced to objects as resources to be exploited in the process (1977). In comparing with to instrumental theory, substantive theory does not give any agency to society (Tapia, 2003). Substantive theory tries to highlight the cultural nature of technological transformation. In deciding to embrace technology, people are unaware of the cultural and social implications of their decisions. As Feenberg (2002) puts it, “technology is not simply a means but has become an environment and a way of life” (p.8). An example is the contrast of fast foods as compared to a properly prepared family meal. Technology makes the instant foods readily available and waiting to be consumed, taking away the various social and cultural contexts related to the many steps taken in preparing the meal, e.g obtaining raw foodstuff from the producers, cooking according to family recipes, sitting down together for the meal etc. (Brogmann, 1984).

These two theories, although seemingly different, share similarity, as pointed out by Feenberg. Domination by technology over society, as illustrated by substantive theory, is not denied by instrumental theory. Technology, “as a domain of perfected instruments for achieving well being”, is seen as “simply a more powerful and persuasive alternative” in effecting control over society rather than the elusive powers of the ‘technical phenomenon’ (p.8). Therefore, both theories exclude the position of man to either intervene or wield control of their destiny. This kind of situation is without doubt unacceptable to any reasonable person. Sharing a similar outcome, Feenberg sees less significance to distinguish the two theories. In this sense, the neutrality of technology can be seen to have lost some of its grounding.

The critical theory of technology, aiming at inventing a “politics of technological transformation”, also rejects the neutrality of technology. It presents the view that “the

values and interests of ruling classes and elites are installed in the very design of rational procedures and machines…" (Feenberg, 2002, p.13). The ideology of class self-interest and technique come together to form 'technical codes' that embody the values and interests in rules, procedures, devices and artifacts. This is done with purpose of pursuing power and maintaining dominance in the society. Technology is seen not as a 'thing' but a process of development that assigns social values in the design as well as the use of technical systems. This process involves struggles set on a scene he calls "a *parliament of things* on which civilisational alternatives are debated and decided". However, in this situation the critical theory of technology, following secular socialist nuances, rejects the role of religion since it places religion as a domain external of society (p. 14-15).

Nevertheless, the neutrality of technology is also deemed incompatible with Islam since it suggests that technology is value-free, whereas there is no such thing as 'value-free' in Islam. Any endeavour undertaken by man should be within the boundaries set by Islam in order for it to be permissible (*halāl*), guided by Islamic principles and values. Anything that is proposed as 'value-free' would sever ties with God, and being in a godless situation is the highest form of forbiddance. This is what separates Islam from the other theories that exclude the Divine element in technology. Islam does not reject the need to develop technology. However, technology development does not happen on its own. Therefore, man is responsible for his actions and will be subsequently rewarded or punished for them in the Hereafter.

5.4 Technology and Effects on Man

Technology is created and used by man to fulfil certain needs and basically make life easier. However, as implied earlier man cannot run away from the various effects of

living with technology. It is not the aim of this study to analyse the many impacts of technology on man though some discussions on it is inevitable. One aspect of this that is rather fundamental is the effect of technology on reality.

5.4.1 Technology and Man's Reality

Technology is seen to affect human engagement with reality. According to Albert Borgmann (1984), technology is capable to shape people's involvement with reality through what he calls the disburdening character of technology. Technology creates availability of commodities, allowing people to enjoy consumption without having to engage with reality. An example given is enjoying heat in the house delivered by central heating systems without involving activities like gathering and chopping wood, and sitting together with family members around the fireplace. These pre-technological activities allowed people to engage and interact with their world (Borgmann, 1984; Verbeek, 2002). Technology changes this by producing and distributing heat throughout the house. By changing the way people interact with reality , technology creates a different paradigm or pattern in the way people live their lives, what Borgmann calls the 'device paradigm' in which engagement with reality is replaced with a passive form of consumption. Through consumption, technology's promise to disburden and enrich people's lives has hindered true enrichment, i.e. in the form of engagement of reality (Verbeek, 2002).

Another point which can be added to this view is that technology has indirectly created another form of 'reality' which is experienced through consumption (Verbeek, 2002). This other form of 'reality' is experienced more when people are more immersed in high technology, especially ICT. This can also be seen as the ultimate of creating virtual realities through ICT. Borgmann refers to this as hyperreal' which replaces reality. In

this case, ICT delivers reality as a commodity for consumption. The supposed enriched engagement with information through ICT is overrun by this 'new' reality that removes reality from information. This 'unstable' form of information needs to be balanced out with reality that in so far has produced material and spiritual well-being. Likewise, a practical response is not to reject this technologically produced reality, but to strike a balance between the two realities. Borgmann suggestion to re-engage reality is through 'focal practices' that encourage people to fully concentrate their capabilities. He gives the example of running that makes people physically and mentally aware of his surroundings while running (Borgmann, 1984; Verbeek, 2002).

Verbeek (2002) proposes a different outlook at technology and reality by challenging Borgmann's view by looking at technology as mediating human involvement with reality. Technology should not necessarily be at odds with engaging reality. The goals and purposes of pre-technological practices are realized with the help of technology. On the contrary, the focal practices do not fulfil these purposes. Focal practices may be indirectly receive less attention, depending on how much the person in is immersed in consumption of technology, but not necessarily rejected totally for the sake of their intrinsic value. More importantly, technology provides avenues for engaging reality, and even enhancing and expanding the engagement. Verbeek gives the example of television that, through its program contents, allows people to engage with current issues happening in far off places, which in return may evoke some form of action or response. Therefore, technology does not just disburden humans but also creates possibilities for engaging reality.

Thus, according to Verbeek, in the case of ICT, rather than seeing it as pushing a replacement for reality, it plays a role of mediating human involvement with reality and

enhancing contact with other humans, even though it may be in the form of virtual reality or 'hyperreality'. The virtual realities are used in service of reality itself, and not replace it. For example flight simulators or online applications on the Internet for education, shopping, banking etc. may facilitate and change the way human relate with reality, but the connection with reality is never severed. E-mail, online chat and video conferencing mediates the communication with other humans, or in other words, mediates the contact with reality (Verbeek, 2002).

Therefore, in shaping the relationship between humans and reality through mediation, technology does not alienate humans from reality. In this sense, man should always be able to distinguish the technology from reality. Getting 'too carried away' with technology has the potential to make man forget his position as Allah's servant and *khalīfah*, which in Islam is the ultimate form of man's reality, i.e. the reality of his creation. This position is similar to what Sidek Baba (2007) mentions that for Muslims, technology should be seen as a means to achieve intended goals in life, and not an end in itself. This also relates to the discussion on technology as *wasāil* in Chapter 2 and later in this chapter. Man should not be engrossed in a life drowned by technology, which eventually forms a dependency on technology but rather make use of technology as a potent medium for improvement in life. This is related to the increased capability of man in several aspects brought about by technology.

5.4.2 Technology, Capability and Quality of Life

Lawson (2008) suggests that the general function of technology is to extend human capabilities and eventually create more possibilities for man. Technology has become source of countless inventions, a source of riches and has enabled miracles by enhancing human abilities and fulfilling human intentions (Wang, 1998). This is

repeated by Imamichi (1998) when he mentions that technology has transformed humanity by strengthening man's physical capability and the human faculty as a mental force. However, the conventional concern of effects of technology on mankind is not forgotten. Wang states that technology has in a way been able to dominate man's life by increasing the limits of human life and work, thus claiming control of social life. With the enhanced capability technology has given man, life expectations has increased resulting in more time being spent on trying to meet these higher expectations and less on other aspects of life related to a more comprehensive and holistic form of human development like interpersonal relationships, interchange of feelings and others. Lawson sees that with the extended capabilities, people experience different forms of aspirations and competencies, which eventually changes the meaning of being human.

In relation to this, Wang and Imamichi also mention that technology affects man's quality of life on the spiritual side. Imamichi believes that technological progress generally despises the human attitude of religion with regards to divinity when man has greater confidence in technology that what he calls 'miraculous events', which results in not just the 'mechanization of humanity' but also 'mechanization of divinity'. This is similar to what Paul Virilio mentions as 'technological fundamentalism' referring to the belief in the absolute power of technology (Armitage, 2000). Wang adds to this by mentioning of overemphasis on materialism for growth and enjoyment, which degrades the spirit. Both Wang and Imamichi agree that reliance on support provided by technology has also downplayed the mental ability and creativity of man. This suggests some form of dependency on technology.

5.4.3 Technological Dependency

The concept of technological dependency is forwarded by Jim Gerrie (2008), based on the ideas presented by Herbert Marcuse, Jacques Ellul, and Marshall McLuhan on dependency. Highly technological dependent societies are tempted to find solutions to problems occurring from technological progress in technology itself, therefore impairing efforts to ethically assess technological practices. Gerrie quotes from Alan Drengson's description of this approach as 'technological fixes' : “I call this attempt to repair the harm of a technology by modification, a technological fix. If, on the other hand, we question the very purpose and intent behind the technology (e.g. of insecticides) and thereby develop alternative approaches that might require modifying our values and goals, then we recognize the limits of the technological fix” (Drengson 1984, 206). In this light, Muslim technologist would have in place the Islamic intent for technology development and subsequently install and promote Islamic values in developing technology. This relates back to the points that have been raised in Chapter 2.

As Gerrie describes, according to Marcuse this dependency happens because people are in a way 'bribed' by the portrayed benefits of modern economic industrial progress brought about by technology. This argument is based on the Marxist notion of class conflict aimed at Western democracies. In this case, the powerful elites of society manage to exploit technological and scientific progress to manipulate needs and create 'false needs' of the masses, who in turn become satisfied when they fulfil those needs. As a result, people develop a sense of apathy in their struggle to survive and achieve satisfaction, while those with vested interest continue to preserve the industrial system driven by technology and maintain their power.

Ellul on the other hand is seen to explain the dependency formed in a different way. Technology is no longer considered external to man but is now integrated into his life and increasingly becomes part of his nature. Technology thus emerges as a central focus of attention, displacing religion, and man 'devotes' his effort in building technological progress. Technological knowledge, is eventually transformed into a form of belief system that awes man with it abilities. Similarly, those who posses such knowledge are viewed with high regard. At the same time, for the technically informed, technology opens up and gives explanation to things that were seen as mystic and unexplained. Technology begins to question established religious customs and belief, and create its own set of values. The 'sacredness' and respect that technology attracts is more subconscious, therefore is appears more of a cult than publicly professed religion, and the dependency is thus established. This form of dependency is similar to the points raised by Wang, Imamichi and Virilio.

For McLuhan, the intimacy between man and technology is intense that man is unaware of his 'subliminal and docile acceptance' of technology. This is because technology is seen as an extension of man's mental or physical ability, as mentioned by Lawson, Wang and Imamichi. Just as man is usually unaware of thinking activities or physical movements in day to day life, similarly man is unaware of his daily technological use. The habitual nature of technological activities also contributes to this unconsciousness. Routine and repetitive procedures are essentials in technological practice. Technology becomes second nature, part of man's self and his everyday life routine. Man in turn becomes numb and indifferent to technology. Instead of being trapped in a form of system or faith, man suffers from individual addiction to technology and so is unable to ethically evaluate it. In this situation, the addict requires help from other parties for rehabilitation and recovery.

5.4.4 Effects of ICT: Some Instances

The arguments points to the conclusion that technology has the potential to dehumanise and subjugate man if not handled properly. Similarly, effects of ICT can be seen. For example, the use of technology as a medium of communication while improving some aspects (e.g. increased in speed and reach to recipients) may create certain forms of restrictions in the way one communicates, affecting individuals and the society as a whole (Stacks, Hill, and Hickson, 1991). We can see this in the many forms of ICT communication like email, text messaging, audio and video conferencing, and others whereby the use of technology imposes limitations that affect the quality of communication. With the absence of physical presence and proximity, technology has allowed communication to be dehumanised when immediate interaction is not between man and man, but rather man and technology. This creates the potential to lose the human touch, for example in the nature of language used. This is further worsened when technical matters like inability to establish online connection or malfunctioning of hardware or software occurs.

With the wide spread use of the Internet, the prevalence of the online communities, social networking and virtual worlds is blurring the boundaries that is thought to separate the real and the virtual. Such technologies are not only used for communicating, establishing professional, commercial and casual relations, learning, and entertainment, but crimes of the real world like theft, rape and mugging 'committed' virtually can be observed occurring online (Keegan, 2007). Here, technology has negatively affected humans by providing additional means of perpetrating vice. For Muslims, apart from the dehumanising effect, another concern is the 'deIslamising' effect of the technology, which not only negatively affect the physical, social or mental,

but also the spiritual side of man, especially in eroding one's belief and practice of Islam. With a rather 'free-for-all' environment that the Internet provides, Muslims are exposed to various kinds of content that requires them to carefully evaluate what is being presented that may have any 'deIslamising' effect on them. This relates back to the points mentioned in Chapter 3. Similarly, Muslims should face any unwanted content by actively providing informational content imbued with the Islamic meaning and values, reflecting on what been discussed in Chapter 4. This is but one example on how Muslims can take control in facing the effects of technology.

5.4.5 Facing the Effects

Identifying the causes of technological dependency as mentioned earlier is the beginning in facing the effects of technology on man. From here, man should play an active role in setting the course of technological development. As mentioned by Feenberg (2002), when involving with technology, one has interests for the potential good or harm of the involvement, which he labels as 'participant interest'. These interest should be made explicit and technology be reconfigured accordingly. This would involve technological development that entails some interests while denying others. Here, implementation of 'technical codes' are needed. A technical code is “the realization of an interest in a technically coherent solution to a general type of problem”, in which the solution “serves as a paradigm or exemplar for a whole domain of technical activity”. Technical codes would relate to the “general regularities in the design of technologies” (Feenberg, 2002, p.20). An issue that can be raised here is the interests that have bearing on the ranking of possible solutions and the choice of design. Efficiency is the main aspect commonly considered in developing technology. Feenberg argues that giving attention to other interests would frame efficiency in terms of broader social context. For example, technology may result in deskilling of workers for the sake

of efficiency. However, within a more social context and values consideration, technical advancements would promote skills development for workers to attain efficiency. Hence, different technical codes are seen to reach for a similar aim. Therefore he stresses that technical codes should therefore strive for the realization of ethical values in actions and artifacts.

If the concept of technical codes is placed within the Islamic perspective, the interests outlined by the *Sharī'ah* in terms of protecting *Maṣlaḥah* would be the major driving force of formulating the codes. Ranking of possible solutions is guided by the priorities set in the *Maqāṣid al-Sharī'ah*. Therefore, Muslims should realize the need for active participation is shaping technology, and a proposal on how Muslims can shape an Islamic understanding of technology, including is ICT, should be sought. This is in order to avoid becoming 'victims' of technology, and rather be in a position to harness technology as a medium for the benefit of Islam.

By identifying the causes of dependency, and by playing an active role in shaping technology development, the effects of technology can be 'contained' to a certain extent. This would provide opportunities for critical ethical evaluations of technology and technological practices. On the other hand, the view in which features of technology are extremely dominant to the extent that they do not permit any ethical judgement would refer to technological determinism (Gerrie, 2008), which is discussed in the next section. In facing such kind of dominance, in the view of Islam, man should not let himself fall prey to any material elements. Allowing one's self to be extremely subjugated and dependent to anything other than God up to the extent that erodes one's belief and faith is forbidden. Therefore, controlling the effects of technology in an Islamic manner is indeed required. For this, an Islamic view on the shaping of

technology is proposed in the later section of this chapter. Before this is discussed, the conventional view of society and technology is presented in order to gain insights on how society is seen as shaping technology.

5.5 Technological Determinism and Social Shaping of Technology

In looking at the relationship between technology and society, a common point of discussion, as mentioned in the previous sections, is on effects of technology on the society, or in other words how technology shapes the society. This would bring the discussion to the concept of technological determinism (Edge, 1995). Technological determinism is the conception that suggests technological development is a major influence in shaping changes in the society, while at the same time is free from being affected by forces from the society (Mackay, 1995). Basically there are two aspects suggested here (Edge, 1995; Mackenzie and Wajcman, 1999). First, technology has effects on society, almost in the form of direct cause-and-effect relationship. Second, technological change passively follows science or occurs on its own path, happening beyond the society while affecting society from the outside. Society is in on the defensive, needing to adapt to technology, rather than have a role in shaping it. In sum, technological development is seen to exist independent from society, and in a more radical view, technology is portrayed as the most important determining factor of the nature of society (Mackay, 1995). Technological innovation then becomes like a 'black box', something which is just accepted as it is, with its inner workings obscured from the outside (Edge, 1995).

However, the kind of impact technology has on society is actually influenced by diverse cultural, social, political and economic factors that exist within the society and may vary from one society to another (Mackay, 1995). Certain effect of technology could be

unavoidable, or it could be an outcome of the way technology is designed and developed (Winner, 1999). Therefore, the impact is not determined by technology itself. These factors would also determine the choices made on the course or path taken for technological development happening in the society (Mackenzie and Wajcman, 1999; Mackay, 1995). Raymond Williams' (1974) “symptomatic technology” concept mentions technology as a 'symptom' of social change. Technological development is thus a result of strong social demand. Winner (1999) sees this as the essence of the social shaping of technology proposition in correcting the view of technological determinism. He uses the term 'social determination of technology' to describe this.

Social processes, interest and goals that are related to a particular context (e.g. industrial workplace, home) are seen to have influence on technological development. Specifically, Edge (1995) identifies at least nine types of social influence on technology from the literature: geographical, environmental and resource factors; scientific advance; pre-existing technology; market processes; industrial relations concerns; other aspects of organizational structures; state institutions and the international system of states; gender divisions; and cultural factors. This list is indeed not exhaustive. For one, the aspect of religion which is a formidable force in society has been left out.

In relation to the different types of influences, the social shaping of technology includes two social levels of influence, the wider society (like class, gender, and ethnicity) as well as concerns at a more ‘local’ level by certain scientific and technological communities. These concerns, however, are in fact most of the time affected by the wider society. Nevertheless, social shaping of technology does involve many parties, in which the original intention of any of those parties may not be realised by society (Mackenzie and Wajcman, 1999).

The emergence of personal computing is an example of technological development involving many forces (Ceruzzi, 1999). The advancement in microchip technology did not become a particular dominant factor in making the computer more personal. Counterculture elements in the society during the 1960's and 1970's were pursuing to free computing from its custodians, i.e. the military and large corporations. Such desires connected with the computer hobbyist culture working in garages. This was added to the 'hacker' culture at colleges privileged with the means of exploring possibilities of available technologies. Despite the present dominance of certain corporations on computing technology, other forces, such as the Free and Open Source Software (FOSS) movement, continue to have influence in shaping the direction of computing technology and practice, up to the extent of adoption of FOSS by governments. For example, the Malaysian government has launched the Malaysian Public Sector Open Source Software Master Plan on 16th July 2004 to encourage and guide the adoption, development and pervasive use of Open Source Software (Open Source Competency Centre, 2009). With this rather 'open' nature of participating in developing computer technology, or rather information and communication technology, Muslims developers should take this opportunity to introduce values and meanings that are in line with Islam as an effort to develop an understanding of ICT with an Islamic perspective.

There are in general four possible ways social factors may shape technology (Edge, 1995). First, social factors may influence selection of available technological possibilities. Second, they may allow only one option of technological development to be considered, and most of the time suppressing other alternatives. Third, they may indirectly create a particular environment or situation that promotes the success of only certain technical arrangements, especially when involving technologies that need

elaborate and extensive implementation efforts. Fourth, they may embody social models into technology, for example design of computer network and system modules and controls normally follow the hierarchy and structure of departments in organizations. This type of shaping is especially pertinent to information and communication technologies due to the social nature of information and communication (Edge, 1995).

5.5.1 Approaches in Shaping Technology

In describing the social shaping of technology, several approaches are identified and discussed below:

Table 5.1 : Approaches in Social Shaping of Technology

- Social Construction of Technology
- Systems Approach
- Actor-Network Theory
- Neo-Marxist Approach
- Consumption Approach

5.5.1.1 Social Construction of Technology

The approach of social constructivism follows along the line of sociology of scientific knowledge. Specifically, the model of social construction of technology (SCOT) is described by Pinch and Bijker (Pinch and Bijker, 1987; Bijker, 1993; Pinch, 2003). Technological artifacts is said to be socially constructed. This happens through negotiation and choices being made by relevant social groups whose members agree on similar sets of meanings of a certain technological artifact (Pinch and Bijker, 1987). The various social groups would have different interpretations of the artifacts and how it is designed. These interpretations are influenced by the sociocultural and political context of the groups. Technological artifacts are then said to have interpretive flexibility. Stabilization or closure occurs when the relevant social groups are of the opinion that the different problematic issues have been resolved, either by mere rhetorics or by the

inherent meaning of the artifact. The descriptive model of SCOT thus tries to establish a relationship between wider social context with the meaning of the technology.

The next two approaches is seen to be connected to social constructivism (Bijker, 1993). Generally all three approaches share some common outlook on the social shaping of technology, especially in doing away with differentiations between technical, social, economic and political aspects of technology development, to form what is seen as a seamless web of technology and society (Bijker et. al., 1987).

5.5.1.2 Systems Approach

The systems approach, as described by Thomas Hughes (1987) looks at technology as systems with components consisting of physical and non-physical artifacts that are utilized by system builders. Physical artifacts are the technical components of the system, such as turbogenerators and transmission lines in electrical power system. Organizations, such as manufacturing firms, banks etc., which also incorporate 'scientific' components such as books, articles, university teaching and research programs are also part of the system. Other non-physical artifacts are laws and regulations which are considered as legislative artifacts. Natural resources required by the system, for example coal mines, are also deemed as system artifacts. These artifacts interact with each other and contribute directly or indirectly to achieve goals of the system or solve problems. This normally involves some form of reordering of the physical world deemed useful or desirable by the system builders who design or employ the technological system (Hughes, 1987). The artifacts are also socially constructed by the system builders, e.g. inventors, industrial scientist, engineers, managers, financiers, who are also components of the system but not artifacts. In this case, social factors do not refer to the environment of the technological system. The environment is considered

a social factor in other instances when it refers to the social context of technology or the social background of technical change. The environment however has a one-way influence on the technological system but is not considered a component of the system since it is not under the control of the system. This integration of technical, social, economic and political aspects form a seamless web of social shaping of technology. The system approach is argued to be most appropriate in describing large technological system, since Hughes work focuses on electricity supply systems of the United States (Makcay, 1995).

5.5.1.3 Actor-Network Theory

The actor network approach or actor-network theory is mostly developed by Michel Callon (e.g.1987), Bruno Latour (e.g.1987) and John Law (e.g.1987). It is essentially a general social theory centred on science and technology, or technoscience as Latour terms it, and not just a theory of technoscience. It bears some resemblance to the systems approach, with human and non-human 'actors' that strive to form alliances or 'networks' (Bijker et al., 1987; Law, 1987; Mackenzie and Wajcman, 1999; Sismondo, 2004). However, in the actor network approach there is no separation between the social and the technical elements. It considers all forms of animate and inanimate forces in developing technology to be of the same standing and does not discriminate between human and non-human actors. The actors can include scientist, engineers, researchers, consumers, industrial firms, ministerial departments, as well as electrons, batteries, catalysts (Bijker et al., 1987; Callon, 1987) and even ocean winds and currents (Law, 1987).

These heterogeneous actors have 'interests' which can be used and managed to create networks for technology development (Sismondo, 2004). They are deemed as social and

physical actors with defined attributes and enrolled into networks, in which development of technology relates to the association between the actors in the network. This is termed as 'heterogeneous engineering', whereby actors originally having diverse attributes and interests are brought together. Their attributes are defined and their interest translated externally by the actor-world designer ('system builders' in systems approach) and held together in the network in order to achieve stability so that actors can work together to support the goal of developing technology. This emphasis on controlling conflict among the actors, as compared to interactive contribution of system components, among others sets the actor-network theory apart from the systems approach (Law, 1987; Bijker et al., 1987; Sismondo, 2004). Among the criticisms against the actor network approach is that it does not give much attention to humanly factors like cultural context of science and technology since humans and non-humans are treated the same and the actor-network theory has an external perspective and treatment of actors (Sismondo, 2004).

5.5.1.4 Neo-Marxist Approach

The fourth approach is the Neo-Marxist approach. It argues that certain broader socio-economic or political objectives drive the design and development of technology. Technology is developed, either deliberately or otherwise, to fulfill these objectives set by management of the labour force or political powerhouses. For example, in terms of labour process, technology not only increases labour productivity, but also becomes a means of control over labour process by those who have the capital and power to own technology. (Braverman, 1999; Russell, 1986).

The political nature of technology is seen when technology embodies certain forms of power or authority, as described in detail by Langdon Winner (1999). In this sense,

technology can be designed to fulfil some political purpose. However, political elements of technological development do not necessarily depend on political intent. Some forms of technology may have a political outlook even though it was developed without any political intent. For example technological designs which, after conception, turn out to be unfriendly to disabled persons. Some technologies are inherently political when they appear to require certain social and political relationships, for example nuclear power plants require a strong military for security reasons. Still, other technologies are just more compatible with such relationships, such as power generation using solar energy is seen suitable with a democratic and egalitarian society due to its decentralized nature (Winner, 1999).

5.5.1.5 Consumption Approach

Mackay (1995) proposes a rather different approach to the shaping of technology. Using the ideas of consumption from media and cultural studies and adding them to the previous approaches, this approach gives attention to the use and the user of technology as having a role in the social shaping of technology. He sees a more complete cycle of technology when both sides, the designer and the user, are involved in the shaping of technology. For this, Mackay refers to the works of Stuart Hall (1980) and David Morley (1992). Haddon (1988) also includes a similar approach, among other ideas, in studying the home computer. According to this approach, technologies is said to be designed and developed for certain intended purposes, which, in light of this study, can be related to the concept of *niyyah* discussed in Chapter 2. Technology may be technically designed and developed to incorporate or encode certain forms of functionality which is then promoted as the preferred form of use (Mackay, 1995; Mackenzie and Wajcman, 1999). In this case, consideration of use shapes technology. Mackay refers to this as functional encoding of technology.

In addition to this, use of technology is also determined by the users. Technology does not necessarily succeed to ‘force’ the users, rather it would more or less facilitate them towards the predetermined use. The users might even have various ways of making use of the technology (Mackay, 1995; White, 1978). This also can be related back to *niyyah*, in this case that of the user. Some technologies are considered more ‘open’ to a variety of uses compared to others, for example a knife or a hammer. Personal computers, mobile phones and other ICT devices are excellent instances of highly ‘open’ technologies with its nature of being multi-functional and easily customizable. However, there is a need in creating some balance and control in the possible choices of using technology. The coming together of both the designer and the user in the shaping of technology is termed by Mackay as appropriation of technology. In short, all the issues mentioned in this section indicate that technology does not exist in a vacuum, in line with the basic notion of shaping of technology.

5.5.2 A Simple Model of Technology Shaping and Effects

Social shaping of technology goes well together with the realist perspective, whereby it does not neglect the physical reality of technology in forming beliefs and thoughts about technology. In other words, shaping of technology is considered both social and technical (Mackenzie and Wajcman, 1999; Edge, 1995).

The social shaping of technology wishes to open the 'black box' to look into the social processes that shape the form and content of technology that in turn causes effects on society. An effect, or perceived possible effect, may also influence future decisions on technology development. The relationship between technology and society is therefore reciprocal and interactive. A proposed initial model of integrating the 'shaping' and

'effects' aspects is depicted below in Figure 5.2 (Edge, 1995). Starting with a 'product-cycle' view of technological change in Figure 5.1, the model incorporates feedback loops to portray the possibility of elements in the model influencing, in addition to being influenced by, the ones on their left. The chronological left-to-right ordering of the original model is abandoned to show a more integrated nature of technological development (p. 20).

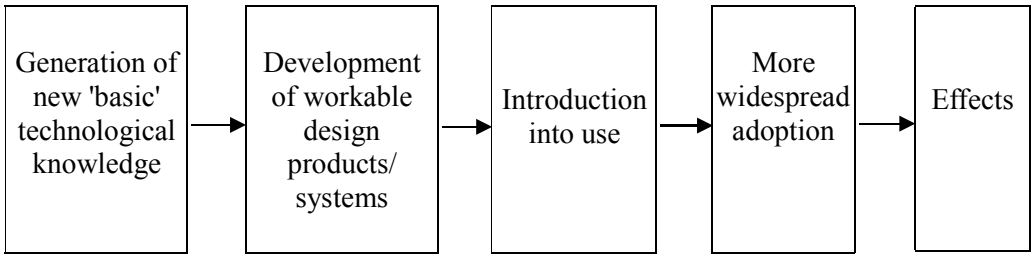

Figure 5.1 : Simple product-cycle model

adapted from Edge (1995)

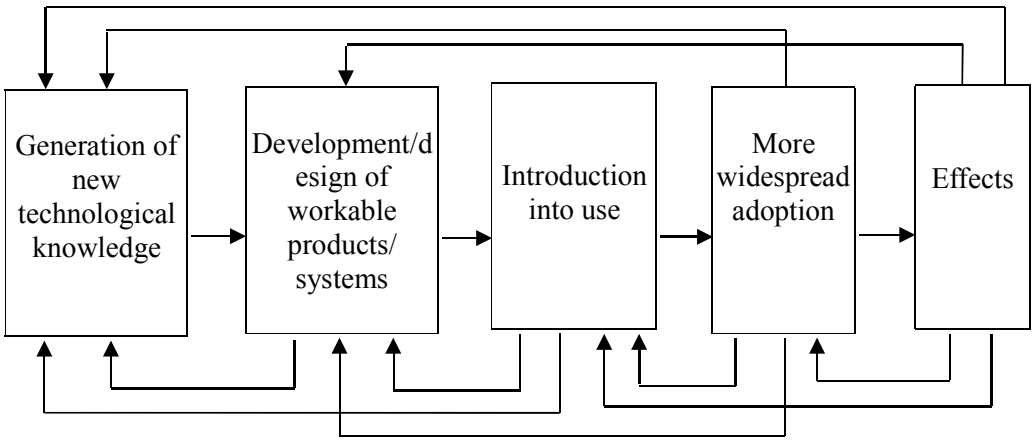

Figure 5. 2: Simple 'shaping' and 'effects' model

adapted from Edge (1995)

The model, even though rather basic, highlights the mutual relation between technology and society as the party that shapes technology as well as being affected by it. The position of technology is not denied. The central issue here is the importance of having a balanced view on the relation between technology and humans, acknowledging the position of both sides of the equation (Bell et. al., 2004).

5.6 ICT and Society

The mutual situation between technology and society as described earlier is also evident in information and communication technology (ICT). ICTs that are shaped by society are later absorbed by society, which in turn causes changes in the society (Bell et. al. 2004). This situation is discussed in the field of social informatics as propounded by its key advocate, Rob Kling. It brings together various topics of technological development treated by different areas of studies: human computer interaction, information systems, library and information science, management, operations research, computer science, as well as social sciences (Davenport, 2009; Kling, 1999). It would refer to studies that have been previously labeled as 'computer and society', 'social impacts of computing', 'social analysis of computing', or 'behavioral information systems'. It involves looking at how ICT shapes social relations, as well as how social forces shape ICT use and design (Kling, 2003). Social informatics is defined as “the interdisciplinary study of the design, uses and consequences of information technologies that takes into account their interaction with institutional and cultural contexts” (Kling, 1999).

A key concept is ICT development and use is not socially or technologically isolated. The social context has a fundamental influence on how people treat information technology (Kling 2003). This in turn would affect outcomes of their social relationships in work, organizations and other social settings. For example, Kling

pointed out that different context in terms of incentive for using, organizing and sharing information at two major consulting firms, PriceWaterhouse and Ernst and Young, had brought about different results in the adoption of the Lotus Notes application. In relation to this, he adds that the design and development of information technology systems would demand a more integrated socio-technical perspective (Kling, 1999). Social informatics thus looks at the concept of "computerised information systems as social technical systems", comprising of :

- people in various roles and relationships with each other and with other system elements;
- hardware (computer mainframes, workstations, peripherals, telecommunications equipment);
- software (operating systems, utilities and application programs);
- techniques (management science models, voting schemes);
- support resources (training/support/help); and
- information structures (content and content providers, rules/norms/regulations, such as those that authorize people to use systems and information in specific ways, access controls).

These elements are socially and technically interrelated and interdependent in what is termed as "web of computing" (Kling, 1999). Therefore, the notion of social technical systems would not only involve common information processing but also social relationship restructuring of the different groups of people related to the system (Kling, 2003). For example, systems might reduce the need for physical, face-to-face meetings and widen the scope of interaction, which may have positive and negative consequences. An example of this is when artist, musicians and producers have managed to employ the Internet to create a global, online presence, but later found themselves with an audience expecting for free materials online and problems of piracy.

For the designer, socio-technical consideration involves understanding the features and trade-offs that would attract and the user which will later be incorporated into the technological design of the system. However, social informatics is not confined only to the organization but looks at information technology in all kinds of social settings, therefore involving professional practice and education as well as public policy of information technology (Kling, 1999).

Social informatics is mainly advocated by scholars in the United States. However, socio-technical aspects have also been discussed by scholars from the United Kingdom much earlier than the American scholars (Davenport, 2009). Enid Mumford, who began with studying social consequences of computers in industry in 1960, provided insights on socio-technical approaches. In relation to developing expert systems in organisations, she mentions the need to consider, among others, the philosophy and values of the designers and their sponsors, as well as the decisions taken by the parties involved (Mumford, 1987). Within the political and social situation plagued by the disorder and confusion created by capitalism, Mumford stresses the importance of a value system through socio-technical design in protecting and giving priority to the rights and needs of the employee in the organization, similar to the technical elements of the system (Mumford, 2006). In light of this, based on the objective mentioned in Chapter 1, this study highlights the Islamic value system that would guide the design of ICT in the form of the shaping of technology. This issue is discussed in the last section of this chapter.

Williams (1997) mentions about ‘configuration’, referring to technology that involves various components put together, as in the case of ICT. He suggest that social implications are identified in the way they are included in the wider technological

systems and social practice, and not by looking at the specific components, or even the completed assembled artifact. This is because of the numerous configurations possible. He also stresses the importance of policy makers in government bodies as among the many players in setting the 'rules of the game' in technological development and deployment, with more direct participation in actual development or by providing resources and support for other groups in technology development programmes (Williams, 2000). Chapter 6 of this study looks into this matter when examining the perspectives of government officials with regards to ICT development in Malaysia and Islamic values.

Fuchs (2008), following the shaping of technology line of discussion, mentions the need for the Internet and society to be shaped by humans "in order to avoid risks and maximize human happiness" (p. 1), a purpose rather similar to the aim of the *Sharī'ah*. He however defers to use the term social informatics or internet and society for his research, rather settles for the 'information and communication technologies and society', shortened to ICT&S, the term used at the University of Salzburg, which he is affiliated to. Within this perspective, the Internet, as an example, is seen not just as a global network of computer networks but "the general phenomenon of the interconnection of networked knowledge-based technologies and networked social systems" (p.2), emphasizing both the technical and social nature of the Internet. The mutual connection between technology, in this case ICT, and society is clearly seen in the two aspects concerning ICT&S research, which are the social shaping/social design of ICT involving human actors, and the assessment on impacts of ICT usage on society. This is depicted in the following diagram (p.3):

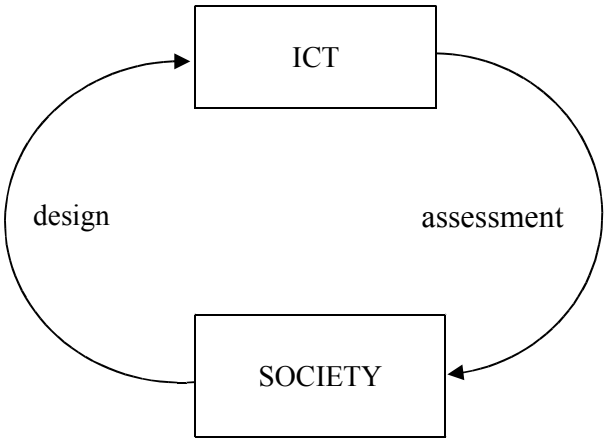

Figure 5.3: ICT&S Research

adapted from Fuchs (2008)

The dynamic and mutual relationship between ICT and society is represented in the diagram. As explained by Fuchs, humans in society shape (i.e. design and use) ICTs. On the other hand, in the shaping process, ICTs affect the society by enabling and constraining human cognition, communication and cooperation. This is described by him as the mutual shaping of society and ICTs (p.4). Humans, as living beings with beliefs, is most certainly in a different position than the inanimate in having control of the relationship. In shaping technology, and ICT, humans construct and impose certain meanings onto technology, which discussed in the next section.

5.7 Technology and Meaning

Technology is seen to embody meanings beyond its functional use, whether the meanings are intentionally or unintentionally incorporated in the technology (Winner, 1999; Mackay, 1995). Technology would carry within it preferred meanings encoded by the designers, referred to as symbolic encoding (Mackay, 1995). Designers of technology are bound to be influenced by meanings in the society, including meanings

of existing technologies in the society (Pacey, 1999) which in turn relates to how the users in the society make use of the technology or their capacity to decode its preferred meaning (Mackay 1995). These social meanings could be, among others, political influences, economic conditions and public interest (Pacey, 1999). Designers may also have their own norms and values that are also shaped by the sociocultural context (Pinch and Bijker 1987). Forty (1986) mentioned ideology having a significant role in providing ideas not only about the social context of technology, but also the position of technology in the social context. In other words, this can be seen as giving meaning to both technology and society. Similarly, this notion can be extended to religion. In turn, technology will be used to create social and cultural contexts based on these meanings (Pacey, 1999). Hence, a form of bidirectional relationship is seen between technology and society, as mentioned in the previous section. A similarity is also seen with the discussion on information and meaning in Chapter 4.

The existence of meaning in technology can be described through symbolism or semiotics, whereby technology artifacts are seen as forms of symbols with inherent meanings, or be likened as a form of text with embodied meaning (Pacey, 1999; Mackay, 1995; Innis, 2003). Winner (1986) had referred to this notion as 'artifact-ideas'. Therefore, extending on this notion, in a general sense technology is likened to a form of communication, or more precisely, a form of communication system. The designer or developer of artifacts are the 'senders' of messages and users, consumers and the public are the 'receivers' (Pacey, 1999). This notion of communication can be traced back to John Dewey's view on art and media in his 1934 work *Art as Experience*, in which Innis (2003) extends to tools, machines and instruments. The medium of art (and likewise, the tool, machine or instrument) is seen as carrying a "qualitative pervasive whole", making it a mode of language, expression and communication, and as Dewey mentions,

“esthetic effects belong intrinsically to their medium” (Innis, 2003, p. 55). Technology artifacts thus become the 'message' with meanings in the communication system. Again, this brings into picture the assertion by Marshall McLuhan that 'the medium is the message', referring to the common position of technology as the medium in communication systems. Susan Wittig (1978) mentions that this kind of study of technology can give emphasis on the 'sender', the 'receiver' or the 'message'. With regards to the meaning of the 'message', the knowledge, values, and purposes of the 'sender' and the 'receiver' respectively should be given attention (Pacey, 1999). This connects back to the discussions in the Chapter 3 on the position of the sender and receiver.

Therefore, it is important for developers or researchers to be in touch with the society in order to fully understand the reality connected to the social meanings (Pacey, 1999). Mackay(1995) , in referring to studies on consumption of information and communication technologies in the home setting, stressed that the meaning of ICTs in the domestic sphere “can only be understood within the class, gendered, geographical and generational context of its consumption”, to which this notion of meaning of ICT can be extended beyond the home setting to the society (p.47). These context would contribute to understanding the reality connected to the social meanings of technology. The connection between technology and reality has been discussed in section 5.4.1. However, an issue that can be raised here is 'whose reality?' since there may never be a single agreed upon reality that constructs the meaning for technology. Innis (2003) sees meanings brought about by technology to range “from the affective, through the perceptual, to the conceptual, scientific, and aesthetic”. Winner (1999) on the other hand gives a political flavour to all meanings of artifacts. In the social construction of technology, different relevant social groups ascribe different meanings to technology

(Pinch and Bijker, 1987). The developers and designers of technology would have a 'preferred' meaning whereas the users might assign meanings that are different to the 'preferred ' ones (Mackay, 1995). Even though some form of agreement, or 'closure' may be achieved with regards to the meaning of a certain technology, there is no guarantee that the agreement will remain intact (Kline and Pinch, 1999). Social meanings are generally humanistic in nature, detached from the inner spiritual side of man. In addition, any form of reality related to the meanings that can be identified by man in essence owes its existence to the Creator of man (Osman, 1991). Therefore, a different source of meaning could, or should, be considered for a more holistic kind of meaning, a meaning that is ascribed by the Creator of man. This relates back to the discussion in Chapter 2 on *Tawḥīd* and the position of man as the source meaning of technology. This can also be related to Mackay's (1995) proposition in creating a balance or freedom within constraint for any possible meanings in technology deployment. In this manner, the religious and God obeying consciousness would guide the creation of balance and constraint needed to give direction to technology. This guide is in the form of *Sharī'ah* as its *Maqāṣid*. Extending from these notions, an Islamic shaping of technology is proposed.

5.8 An Islamic Shaping of Technology

The previous discussions have left out religion as a factor influencing the shaping of technology, despite religion being an integral element in society. In the social construction of technology, the norms and values of relevant social groups would have an effect on the meaning given to technological artifacts. These norms and values are formed by the social as well as the political condition of the social groups (Pinch and Bijker, 1987). Similarly, John Armitage (1999) notes that since technology is developed and produced by human beings, ICT would embody as well as represent the values of

society. Spitirual values are normally placed in opposition to technology, resulting in the debate of principles vs. practicality, as highlighted by Feenberg (2002). He mentions of "the possibility of a technically rational civilization that enhances rather than undermines those values" with a form of "practicality more in accord with principle" (p.10). Paul Virilio (in Armitage, 2000) is of the opinion that religious culture and moral virtues are needed to understand technology because of three characteristics of the Divine it possess: ubiquity, instantaneity and immediacy, which should be understood through religion. He gives the example of dealing with the phenomenon of cyberspace which requires some idea or appreciation of the metaphysical (in Islam, this can be seen as having similarities with what is termed as *al-ghaib*). He further stresses the importance of proper understanding of religion:

> "…the new technologies demand from those who are interested in them that they have a substantial measure of religious culture – not merely some religious opinion. I may emphasize that all this has nothing to do whatsoever with 'New Age', and the like…" (Armitage, 2000, p. 44).

Religious understanding is also seen by him as important for another reason, i.e. to have control of the 'divine' characteristics of technology and prevent what he calls as 'technological fundamentalism'. This is the belief in "…the absolute power of technology, a ubiquitous, instantaneous and immediate technology" (p.44). Religious knowledge is needed to create a balance so that man can be free from any form of technological 'extremism' and able to be in control and handle any threats emanating from it.

Hence, a religious shaping approach on technology should be proposed. For the Muslim designer and developer, Islam as a universal and all encompassing way of life should be

referred to in implementing such an approach. By referring to the role of society in shaping technology, the opportunity to introduce Islamic values to technology, and particularly ICT, can be explored in this way. ICT is a rather 'open' technology due to the social nature of information and communication. This creates the opportunity to incorporate Islamic principles and values within the information and communication aspects of ICT, which is discussed in the Chapters 3 and 4. This is in addition to have the Islamic principles and values through the technological perspective of ICT, which is treated in this section.

However, as known, Islam is not a religion as normally understood from a secular point of view. Islam as a religion positions itself as a comprehensive way of life. Therefore, Islam would position itself as an all-encompassing and predominant factor in guiding and shaping all aspects of life. The Islamic shaping of technology happens through the influence of Islamic values on the social context. *Tawḥīd* as the belief system would provide the basis of meaning for technology. According to Al Fārūqī (1992), one of the value-related meanings that stems form *Tawḥīd* is seen when man fills the world and the objects that he creates with "higher, cosmic values" (p.30). This situation represents man's purpose of creation and becomes an act of worship for man. The purpose, intent and goals of developing technology are guided by Islamic principles. This can be referred to the fundamentals outlined by the *Maqāṣid al-Sharī'ah*. Technology therefore can be placed as a means or medium in serving this purpose, as discussed in Chapter 2.

Technology involves making use of elements in the physical world. Allah has created this world to be subjected to man, to be used for his benefit, as mentioned in the *Qurān* in verse 45:13. Shihab (1996) mentions that the subjection of the creations to man by God would allow man to gain benefit from them by using technical expertise. The

phenomena of creations are signs of God's supremacy and power, of which should bring one to the realization of belief in Him as mentioned in verse 21:30 that states the creation of the heavens and the earth, as well as water as the source of living things as signs to be pondered by the unbelievers. Based on this notion, the development of technology should come with the remembrance to God who has created and subjected this world for man. In addition, it should also remind man of his position as the appointed *khalīfah* of God. Thus, man should be in charge in his relation with technology and not become overwhelmed by it. Technology, as extension of man's capabilities, should be made so that it does not become a hindrance to man in his relation with God. In relating with technology, man should become closer to God. If the technology results in man straying farther from God, then man is responsible to rectify the situation by 'correcting' the technology (Shihab, 1996).

In this light, Islam demands responsible behaviour from people who are technologically knowledgeable. Manipulating elements of the physical world for technological development is done in a responsible manner, not following any person's whims and fancy. Such approach if ignored will bring about destruction and mayhem on earth which in return will bring sufferings to mankind, as reminded by the *Qurān* in verse 30:41 on the outcomes of the work of man's hands evident on land and sea that in turn will make them realise the impact of their misdeeds. Unfortunately, this is what is evident of technology development in some situations. The same verse is also applicable for users of technology. Even though they posses the freedom of choosing the way technology is used, which may differ from the intended purpose, they are reminded of responsibility of use. This is very much relevant to 'open' technologies like ICT. Just as the preferred meaning set by the designer of technology should be guided by Islam, the possible choices of technology use must be ascertained within the limits of Islam.

This means, among others, to avoid abuse and misuse of technology that may be detrimental to the society and other elements protected by Islam. In this sense, the meaning of the technology should have influence on those possible choices, and use of technology should not be separated from that meaning. For ICT, the Islamic meaning covers not only technological aspects, i.e. ICT as a mean or medium, but also the informational content and the communicative process that constitutes the practice and understanding of ICT. This is proposed as a basis for harnessing an Islamic-centered approach towards ICT.

Some discussions can be presented here in relation to the approaches to shaping technology mentioned. Social construction of technology places the role of society, here Islam is positioned as the influence to shaping technology. The systems approach mentions about the use of natural resources, something which Islam tells man to use wisely as discussed previously. The organization, management, law and regulations which are also mentioned by this approach are aspects that warrants the Islamic perspective. Likewise, when technology is seen as a form of 'power' in society, then it should be used appropriately and not to be abused. The human factor is emphasised as the systems builder, which the actor-network approach calls as actors. Similarly, the consumption approach mentions of the role of the designer, as well as the user in shaping technology. The human factor is the focus of the Islamic shaping of technology since it is the living element in technology development, with man having its responsibility as the servant of Allah in relation to shaping technology. This is further elaborated in the following section.

5.8.1 The Position of the Designer

In developing technology the question of the responsibilities of the designer or developer as the ones with technological knowledge and expertise is very significant. For example, a computer programmer by the name of A has created a computer program for the purpose of processing critical financial information with him being aware of technical vulnerabilities of the program and the possibility that some irresponsible persons can misuse it to commit fraud. The question is whether A is responsible for the crime committed by this third party. If the technology is considered neutral in value, it is safe to conclude that A is not responsible at all for the wrongdoing acts of other people since the its value depends on those who use the program rather than any characteristic being ascribed by those who design it. However, in this case A is liable for knowingly creating a weak and insecure program.

Islam emphasises that all man should be responsible for their own doing. Islam differs from the secular view since the latter lacks a sense of responsibility and accountability to God (Walgate, 1984). Human are accountable to use their intelligence accordingly since they bear the trust of being God's vicegerents and will be accounted for on the Day of Judgment as mentioned in verse 3:30 in the *Qurān*. The verse mentions that all deeds, either good or bad, will be presented in front of man to be judged on that day. Therefore man is reminded to fulfill their role in serving and obeying God and for his obedience man is promised His kindness.

In addition, any form of experimental and empirical work cannot be divorced from one's heart, inner intuition, insight or conscience (Sadr, 1984). Islam put great emphasis on both, the ends and means of technology. Designers and inventor should discharge their responsibilities with great diligence. Like wealth, knowledge is considered to be a

trust given by God to a person, who should use their knowledge conscientiously. Thus, their knowledge have to be used for the good of community and as such, the ways of doing as well as the final product of their endeavour must be dictated by the value system of Islam (Kettani, 1984, p.67). This again is closely related to the concept of *niyyah* and the goal to achieve the *Maqāṣid al-Sharī'ah* that have been discussed in Chapter 2.

Another point to be mentioned is that technology is positioned as the *wasā'il* (means) to fulfill the *Maqāsid* i.e. the paths that lead to *Maqāsid.* As such, the *wasā'il* take on the status of *Maqāsid* based on the principle "those things without which obligations cannot be fulfilled are themselves obligatory, and cease to be obligatory when such obligations cease to apply." (Attia, 2007). Attia gives an example of the performance of ritual ablutions is an act of worship which is intended as being a means of fulfilling some other intent, such as the performance of ritual prayer, touching the *Qurān* etc. Thus, the *wasā'il* though is only the means, its value is similar to the value of the *Maqāsid* as mentioned in Chapter 2. Nevertheless, it is important to safe guard against allowing means to become ends in themselves, having lost their connection with the original intents. For example, food is a means of preserving life. However, it is not acceptable for it to be transformed into an end such that one lives to eat rather than eat to live (Attia, 2007). This is similarly applicable to technologies being in the position as means. If people fail to associate them properly with their ends, they are in danger of becoming ends in themselves thus making human becomes slave to the technologies. In this situation, the designer creates technology for the sake of creating it since technology has become the end instead of the means. Therefore, technology is developed without any proper intention or consideration for values.

With regards to development of technology at the national level, policymakers and officials in the government can be considered as a kind of designer when they would determine and shape the policies and programmes of the country's technology development. This also relates to the laws and activities that emerge from the policies. This study, in looking into Islamic values for ICT development in Malaysia, investigates the perspectives of government officials who are related to efforts of ICT development in Malaysia, since these people would be in a position of influence over the policies and programmes of ICT development. This investigation is mentioned in Chapter 6.

The above arguments give clear indications that from the perspective of the designer, technology is not neutral but is characterised by the values as determined by those who create it. For Muslims designers, they should establish the proper *niyyah* and inculcate the Islamic values through their technological products in line with the aims of the *Sharī'ah* and *Maqāṣid al-Sharī'ah*. The technology makers are thus accountable to give answer for their technological choices to those who have to bear the results of their technology.

5.9 Conclusion

This chapter looked into the relation between technology and man, and how society would influence the shaping of technology. From this, as Islamic perspective for shaping technology and ICT is proposed. Islamic values and meaning in the society would have influence in shaping the technology. Technology is develop with considering the values based on *Tawḥīd* and guided by the *Maqāṣid al-Sharī'ah*.. There must be responsibility in developing technology: in terms of using the elements/creations and in terms of the kind of technology developed. Muslims designers should establish the proper *niyyah* to inculcate the Islamic values through their

technological output. This technology will then affect back the society. Basically technology should make man become closer and remember God.

As mentioned by Winner (1993), a key issue that needs to be stressed is the reconstruction of our technology centred world in order to address the many problems we are facing which requires redirection in technology development as well as cross-disciplinary studies. Such a situation sets the opportunity for introducing an Islamic understanding of technology. As a primary measure, Muslims need to show how Islamic values can shape and influence the development and adoption of technology like ICT. This would put forward an Islamic understanding of technology for both Muslims and non-Muslims to realise and understand. This understanding would bring about technological outputs developed based on these values. Due to its unique nature, in the case of ICT, not only the 'purely technological' aspect is considered but also the informational content and communicative practices are also included within the Islamic understanding of ICT as treated in the previous chapters.

Embarking form this understanding, the next chapter brings the discussion on Islamic values for ICT development to the attention of Malaysian government ICT officials in a qualitative fieldwork study. The purpose is to identify the issues related to incorporating Islamic values in ICT development in Malaysia from the perspective of the government officials.

CHAPTER 6

PERSPECTIVES OF GOVERNMENT OFFICIALS ON ISLAMIC VALUES AND ICT DEVELOPMENT IN MALAYSIA

6.1 Introduction

This chapter brings forward the issues discussed in the previous chapters to be investigated in a fieldwork study. The setting of the study is Malaysia, a multi-religious and multi-ethnic country located in South East Asia. Islam has a prominent position in Malaysia whereby 60.4% of its population in 2000 are Muslims (Department of Statistics Malaysia, 6 November 2001). The population of Malaysia as of July 2009 stands at 28.31 million. (Department of Statistics Malaysia, 31 July 2009). The Federal Constitution of Malaysia, the highest law of the country, mentions Islam as the religion of the Federation in Article 3(1), with other religions being allowed to be freely practised. Malaysia is also known as a progressively developing Muslim country with many achievements in technology development, including ICT. The MSC Malaysia project is one of them which has received the admiration of other Muslim countries.

With this backdrop, the fieldwork study discussed in this chapter aims to investigate the perspectives of officials in the public sector on the incorporation of Islamic values in ICT development in Malaysia. Issues discussed in the previous chapters are presented to the government officials in agencies related to ICT development and their responses are elicited through qualitative interview and analysed.

The chapter begins with a brief overview of ICT development in Malaysia followed by description of Islamic initiatives undertaken by the government that bears influence on national development. This provides the background in framing the questions and

objectives of the qualitative study undertaken. The research methodology, process of data collection and analysis is presented and the findings are then discussed. The chapter ends with a summary of the study conducted.

6.2 Overview of Major Developments in ICT in Malaysia

6.2.1 Brief History of ICT Development in Malaysia

ICT development began in Malaysia with the introduction of communication technologies by the British colonialist. In 1874, the first telephone was installed at the house of the British Resident in the state of Perak. Also in Perak, a telegraph line spanning 43.2km was erected across jungle area to connect the British Resident's house in Kuala Kangsar with the Assistant Resident's office in Taiping (Mohd Ridzwan, 2004). In 1882, a submarine cable connecting Perak with Penang Island was installed, allowing telephone links between the two states. Another submarine cable was put in place in 1894 linking the island of Labuan in northern Borneo with Singapore and Hong Kong (Telekom Malaysia Berhad Corporate Information: Milestones 1800s). Radio communications arrived to the country in 1926, while television services began 63 years later. After World War II, the Telecommunications Department was established in 1946. Other major milestones on telephone and broadcast communication are as follows (Telekom Malaysia Berhad, Corporate Information: Milestones 1900s) :

- 1962 : introduction of Subscriber Trunk Dialling (STD) between Kuala Lumpur and Singapore via the first long distance microwave link
- 1963 : expansion of the microwave network throughout Malaysia
- 1968 : the Telecommunications Department of Sabah and Sarawak merge with that of Peninsular Malaysia forming the Telecommunications Department of Malaysia

- 1970 : the first international standard satellite earth station is commissioned in Kuantan, marking the beginning of live telecasts in Malaysia
- 1979 : introduction of International Direct Dial (IDD) facilities
- 1980 : Malaysia commissions its own submarine cable linking Kuantan and Kuching
- 1987 : the Telecommunications Department of Malaysia is corporatised, forming Syarikat Telekom Malaysia Berhad (STMB), the nation's first privatised entity
- 1991: the company rebranded its name to Telekom Malaysia

As of the end of 2009, the number of fixed telephone line subscription in Malaysian homes is 2,734,000, with a penetration rate is 44% per 100 household (Malaysian Communications and Multimedia Commission, DEL (Direct Exchange Lines) Connections). This rather low penetration rate is probably related to the high penetration rate of cellular phones, whereby some Malaysians rely only on cellular phones for communication purposes, especially for voice communication.

Wireless communication using cellular phones began with the introduction of the the ATUR service by Telekom Malaysia in 1985 using the 450 analogue cellular radio technology, putting Malaysia as the first country in Asia with such technology. In 1996, Telekom Malaysia introduces 1800MHz cellular services under their subsidiary TMTOUCH. CDMA (Code Division Multiple Access) services for fixed wireless telephony was launched in 2001. 2003 saw the merger between TMTOUCH and another company, Celcom, to form the country's largest cellular operator at that time using the Celcom brand. In 2005, it launched its Third Generation technology (3G) services, being the first operator in Malaysia to offer the technology (Mohd Ridzwan, 2004; Telekom Malaysia Berhad, Corporate Information: Milestones 2000s). According to the

statistics for 2009, the figure for cellular phone subscriptions is 30,379,000. This places the penetration rate among Malaysian household is 106.2%, indicating some Malaysians have more than one cellular subscription (Malaysian Communications and Multimedia Commission, Cellular Phones in Malaysia).

Computer systems were first applied in the public sector, with the National Electric Board began to use an accounts and payroll system in 1965. In 1966, the Internal Revenue Board engaged a statistics information processing system, followed by other agencies like the Department of Statistics and the Education Ministry. The late 1980's and early 1990's saw expansion in the development of government database systems with the implementation of systems like Civil Service Link (CSL), Chief Executive Officer Information System (SMPKE) and SIRIMLink (for scientific research and development information). This eventually lead to the setting up of the Government Integrated Telecommunications Network (GITN) as the core communications and IT network to connect government agencies nationwide. Private companies were introduced to data communication facilities in 1983 with the creation of Datel, a private leased line service via telephone networks for data communications using computers. 1984 saw the introduction of packet switch technology, which brought about public data networks. ISDN (Integrated Services Digital Network) services came in 1993. In 1997, Telekom Malaysia introduced the Corporate Information Superhighway (COINS), a high-capacity enterprise solution using fibre optic technology as the main backbone for nationwide broadband networks (Mohd Ridzwan, 2004; Telekom Malaysia Berhad, Corporate Information: Milestones 1900s).

The Internet in Malaysia began in 1987 when the Malaysian Institute of Microelectronic Systems (MIMOS), then a unit under the Prime Minister's Department, introduced the

Malaysian Computer Network project, known as RangKom. The network was used for communications like email and newsgroups between local universities. On 24th January 1990, the Joint Academic and Research Integrated Networking project (JARING) was introduced under RangKom. Its aim was to optimise data communication usage in the public and private sector, at the same time providing support to research and development, especially in areas related to modern communication technology. In 1991, RangKom became an Internet Service Provider (ISP), offering services to limited members of the public. A year later, JARING became Malaysia's first full-fledged ISP (Mohd Ridzwan, 2004; MIMOS Berhad, 2006). In tandem with global developments in ICT, the 1990s saw major advancements occurring in Malaysia. In 1992, dail-up Internet connection between Malaysia and other countries was replaced with satellite connection between Malaysia and the United States, giving the country a fixed connection to the Internet. July 1996 saw Telekom Malaysia being licensed as the second ISP and its TMnet Internet service was introduced to the public in November the same year. Internet broadband services began in 2001. In the same year, TMnet became the largest Internet Service Provider in the South-East Asian region. As of the fourth quarter of 2009, a total of 1,535,400 fixed line broadband subscriptions were recorded. Wireless broadband subscriptions stand at 1,084,900, with 927,800 of them are for mobile devices. According to the Malaysian Communications and Multimedia Commission Mobile Broandband Survey 2/2009 , 56.8% of all mobile broadband subscriptions are used for access in households. The total boradband penetration rate per 100 household is 31.7% for 2009. (Md Iman, 2004; Telekom Malaysia Berhad, Corporate Information: Milestones 2000s; Malaysian Communications and Multimedia Commission, Number of Broadband Subscriptions by Technology)

The 1990s also saw two important milestones in Malaysia's ICT development. The National ICT Council (NITC) was established in 1994 as the government advisory body for IT development in the country. In 1995, the government announced the Multimedia Super Corridor (MSC) project as a major initiative to place ICT as a driving force for national growth. The Project was officially launched in 1996 with the formation of the Multimedia Development Corporation as the agency responsible for managing the MSC project, which includes among other things the setting up of Cyberjaya, an new intelligent city south of the capital Kuala Lumpur (Mohd Ridzwan, 2004).

6.2.2 MSC Malaysia

The Multimedia Super Corridor, now known as MSC Malaysia, is a large scale project modeled after Silicon Valley in the United States to create a global ICT development hub in Malaysia. Its vision is “to transform the nation into a knowledge based society driven by the new economy” (Multimedia Development Corporation, 2008a). The idea for the development was announced in November 1995 to initially establish a corridor measuring 15km wide and 50 km long spanning from the Kuala Lumpur City Center (KLCC) in the north to the Kuala Lumpur International Airport (KLIA) in the south. Later on, the project would expand throughout the country (Multimedia Development Corporation, n.d.). The Multimedia Development Corporation was set up in June 1996 as the agency responsible of implementing the project. In August the same year, the project was officially launched.

Cyberjaya, a new 'intelligent cybercity' built within the corridor was opened in July 1999 (Multimedia Development Corporation, 2008b). The MSC Malaysia project is divided into three phases. In the first phase 1996-2003, the corridor was established and apart from Cyberjaya, four other cybercities were developed within the corridor. The

second phase 2004-2010 saw more cybercities as well as smaller cybercentres developed (Multimedia Development Corporation, 2008c) . Two cities were given cybercity status in the northern region of Peninsular Malaysia, namely Kulim Hi-Tech Park and Penang Cybercity1, while one city in the southern region, Melaka International Trade Center, was also awarded the status. Apart from this, five cyebrcentres were established in the central region, and one each in the northern, southern, and eastern region (Multimedia Development Corporation, 2008d). Local and foreign companies, as well as institutions of higher learning that are involved in ICT development are invited to locate within the corridor and at the cybercities and cybercentres. Companies operating at the cybercities and cybercentres enjoy various facilities, infrastructure, services and incentives which are summarised in the MSC Malaysia 10 Point Bill of Guarantees as promises from the Malaysian government :

Table 6.1 : MSC Malaysia 10 Point Bill of Guarantees

1. Provide a world-class physical and information infrastructure
2. Allow unrestricted employment of local and foreign knowledge workers
3. Ensure freedom of ownership by exempting companies with MSC Malaysia status from local ownership requirements
4. Give the freedom to source capital globally for MSC Malaysia infrastructure, and the right to borrow funds globally
5. Provide competitive financial incentives, including no income tax for up to 10 years or an investment tax allowance, and no duties on import of multimedia equipment
6. Become a regional leader in intellectual property protection and cyberlaws
7. Ensure no Internet censorship
8. Provide globally competitive telecommunications tariffs
9. Tender key MSC Malaysia infrastructure contracts to leading companies willing to use the MSC Malaysia as their regional hub
10. Provide an efficient one-stop agency – the Multimedia Development Corporation

(Source: Multimedia Development Corporation, 2008e)

Similarly, companies and institutions can apply for an MSC Malaysia status and go through an evaluation process. With this status, these organizations enjoy some of the privileges given to those located in the corridor, cybercities and cybercentres (Multimedia Development Corporation, 2008f). As of March 2008, a total of 2,006 companies and institutions have been awarded the status (Multimedia Development Corporation, 2008g). The third phase of MSC Malaysia is planned for the period 2011-2020 and seeks to extend the MSC Malaysia project to cover the whole country. By the end of this phase, it is targeted that the country will be transformed into a knowledge-based economy and society and a developed nation by the year 2020 (Multimedia Development Corporation, 2008c) .

As part of the MSC Malaysia project, several flagship applications have been planned to increase the development and use of ICT in the country. These applications are the Electronic Government initiative, MyKad (national multi-purpose smart card for identification purposes), Smart School and Telehealth (healthcare delivery system). They involve nationwide implementation by the government with collaboration from ICT companies (Multimedia Development Corporation, 2008h). To assist in maintaining the competitiveness of MSC Malaysia, the government has formed the International Advisory Panel (IAP) with members include leaders of global ICT companies (e.g. Microsoft, IBM), thinkers and researchers that give advice to the government for the MSC Malaysia project (Multimedia Development Corporation, 2008i).

Such a grandiose project is not with out its fair share of criticisms. Huff (2005) mentions of a report by the international consulting firm McKinsey and Associates in 2001that identifies several problems faced by MSC Malaysia (at that time still known as just MSC). The report was based on a study which the Malaysian government had

commissioned the consulting firm to conduct to evaluate the progress of the MSC project up to that point of time. The report was supposedly to be confidential, however its contents managed to find its way to press. The issues that were attributed to the McKinsey and Associates report based on what appeared in several news reports and editorial comments are mentioned below :

Table 6.2 : Criticisms to the MSC

• Too much red tape in getting MSC status approval
• Conflict of interest between the Multimedia Development Corporation's economic interests and those of the companies it is supposed to assist
• Need to allow MSC companies to locate anywhere they desire
• Make more areas/cities part of the MSC (for example, Penang)
• Multimedia Development Corporation needs better, more ICT-qualified leaders
• MSC/Cyberjaya needs more “world-class” companies
• MSC project needs more ICT/knowledge workers than the new Multimedia University (MMU) can produce; or MMU is not good enough to draw top-flight regional “intellectual capital”
• MSC has not had a big enough impact on economic development; it needs better venture capital managers, etc
• Malaysia Telecom (and other Internet Service Providers [ISPs]) have failed to deliver the infrastructure needed to support the MSC's development
• Not enough attention was given to supporting and promoting Malaysian “small- and medium -sized” enterprises (SMEs)

(source: adapted from Huff, 2005)

Most of the issues highlighted are seen to have been addressed, based on the developments that occurred after the time of the report. The Multimedia Development Corporation have managed to improve itself by changing it top leadership with ICT professionals and further streamlining its services with several measures taken, among others the setting up of its Client Contact Centre (Clic). Establishment of more cybercities and cybercentres as part of MSC Malaysia beyond the initial corridor area during the second phase of the project provided more options for companies to locate their operations. This is supported by the improvements of services by the ISPs,

especially in providing boradband connectivity to business and public users. As a result, as of June 2009, 87 world-class companies with likes of Microsoft, IBM, Intel, CISCO, Fujistu, Hewlett-Packard, Oracle, SAP, Sun Microsystems, NEC, Nokia, NTT, Telenor, Infosys, Satyam, Panasonic, Bloomberg, Aljazeera, Reuters, HSBC, Frost & Sullivan, Exxon-Mobil, Shell, DHL and others have their operations located at the cybercities and cybercentres and were awarded MSC Malaysia status companies (Multimedia Development Corporation, 2009). Besides large corporations, attention was also given to SMEs with the establishment of the Technopreneur Development Division under the Multimedia Development Corporation to provide support to ICT-related SMEs (Technopreneur Development Division, 2001) . In the whole, the MSC Malaysia project has managed to bring about contributions to Malaysia's economy. As reported in September 2009, 183 multimedia companies operating under MSC Malaysia managed to create 7,115 jobs and generate revenues of RM(Malaysian Ringgit)730 million with exports valued at RM125 million (Utusan Malaysia, 8 September 2009).

Another matter that can be observed is regarding the proposed flagship applications. From the initial six, it was later expanded to eight. At the time of this study, the number of flagship applications listed on the Multimedia Development Corporation's website is four as mentioned earlier (Multimedia Development Corporation, 2008h). Those that are no longer in the list of flagship applications are R&D cluster, borderless marketing and worldwide manufacturing web (Huff, 2005). The other one being technopreneurship application is also not listed as a flagship application, even though it has been assigned to a dedicated division as mentioned before. The flagship applications are considered as 'content' of the MSC Malaysia project, which is the 'infrastructure' for these content (Huff, 2005). With the reduction of the number of flagship applications, it can be understood that the 'content' had to be reset to suit the capacity of the

'infrastructure'. This gives a picture that the initial planning for the flagship applications had overestimated the capability of technological development that was seen possible at that time, which, unfortunately, turned out not to be the case.

The development of MSC Malaysia is also seen as a situation whereby materialistic motivation of development driven by technology might overcome other concerns of social development, especially when it is commonly seen as taking the form of a “big land deal” (Huff, 2005, p. 23) or a technological driven real estate development project which is to be replicated throughout the country (Azly, 2005a). Another related point is concerning the nature of foreign, especially Western, influence on MSC Malaysia, especially when it is touted as being modeled after the Silicon Valley. Following a study conducted on MSC Malaysia's development, it is seen to be rather dependent on the West in terms of expertise and way of thinking (Interview with Assoc. Prof. Dr. Zulkiple Abd Ghani, 2 June 2009). The issue of concern here is how much control does the Malaysian government have over these influences. Despite efforts to develop technology locally, projects under the MSC like the Smart School project are seen as forming a dependence on foreign sources of technology from the industrialised and developed nations. Locally developed content rely on software, hardware and infrastructure from outside, putting MSC Malaysia 'ripe for the picking' for foreign ICT giants, what more with these giants becoming members of the IAP. This situation can be described as “ a technological deterministic step towards further linking the nation to the world’s financial capital” (Azly, 2005b), in which this technological determinism not only strengthens foreign dominance, but also promotes a materialistic motivated form of progress that affects the many aspects of the society's development. This would then relate to the question on what actually are the forces that define the meaning of technological progress that technologically driven initiatives like the MSC aims to

achieve (Azly, 2007; Interview with Assoc. Prof. Dr. Zulkiple Abd Ghani, 2 June 2009). This brings back into the picture the discussions on development and Islam in Chapter 1 and the meaning of technology in Chapter 5, whereby God-consciousness meaning permeates all form of human activities, including the building of technological progress.

The MSC Malaysia project was the first initiative undertaken by the National IT Council based on an agenda to bring transformation to the Malaysian society by means of ICT, to eventually become a ' values-based knowledge society'. By looking at the criticisms on how the MSC Malaysia project has fared and later comparing them to the agenda, one underlying problem that can be identified is on the translation of the agenda into actual implementation. Some questions can also be posed to the agenda itself, which is presented at the end of this next section.

6.2.3 National IT Council and National IT Agenda

According to the council's website, the National Information Technology Council of Malaysia (NITC MALAYSIA) “is the country’s premier organization that strategically manages ICT in the interest of the nation. The Council functions as the primary advisor and consultant to the Government on matters pertaining to ICT in Malaysia’s national development”. The council is chaired by the Prime Minister and the Deputy Prime is the Deputy Chairman. The secretary of the council is the Secretary General of the Ministry of Science, Technology and Innovation (MOSTI), where the Council Secretariat resides. Council members are appointed by the Prime Minister from three different sectors i.e public, private and community interest groups and membership is for two years. The council meets officially once a year (National Information Technology Council, 2010a).

The vision of the council is stated as : “To evolve a knowledge society in the Malaysian mould where the society is rich in information, empowered by knowledge, infused with a distinctive value-system and is self-governing”. The council's mission is to :

- promote the sustainable growth of ICT development and application via R&D planning and technology acquisition strategies
- ensure the smooth integration of new technologies into social and economic development
- determine the likely impact of ICT on the economy and society
- explain and promote the potential of ICT in transforming societies in all its dimension

Based on these mission statements, the councils core tasks covers four areas : strategic planning and management, coordination and evaluation, technology assessment and forecasting, and promotion (National Information Technology Council, 2010b).

The council plays an important role in advising the government in formulating and coordinating national ICT policies and strategies. The most fundamental of these devised by the council is the National IT Agenda (NITA) launched in December 1996. The agenda “provides the foundation and framework for the utilisation of information and communication technology (ICT) to transform Malaysia into a developed nation”. The vision of NITA is “to utilise ICT to transform all of Malaysian society into an information society, then to a knowledge society and finally to a values-based knowledge society”, which epitomes the kind of developed status the country wants to achieve in terms of ICT utilisation. In the interviews conducted with the selected respondents in the fieldwork study of this chapter, they described the values here as being social and universal values, which can be related to Islamic values. In achieving this vision, focus is given to “ the development of people, infostructure and applications

to create value, to provide equity and access to all Malaysians, and to qualitatively transform our society into a values-based knowledge society by the year 2020". This is translated into initiatives by the government in creating the necessary environment and empowering the people. The Multimedia Super Corridor (MSC), or now known as MSC Malaysia, is an example of such initiative, which also happens to be the earliest initiative taken by NITC (National Information Technology Council, 2010c). By focusing on the importance of creating the suitable environment, this stresses the role of context mentioned in the previous chapters. Thus, creating such an environment opens the opportunity for the incorporation of Islamic values in the ICT development process. This and other issues are explored in the interviews with the respondents to gain their insights on Islamic values and ICT development.

The focus of NITA is visualised in the National IT Framework (NITF) as in the following diagram:

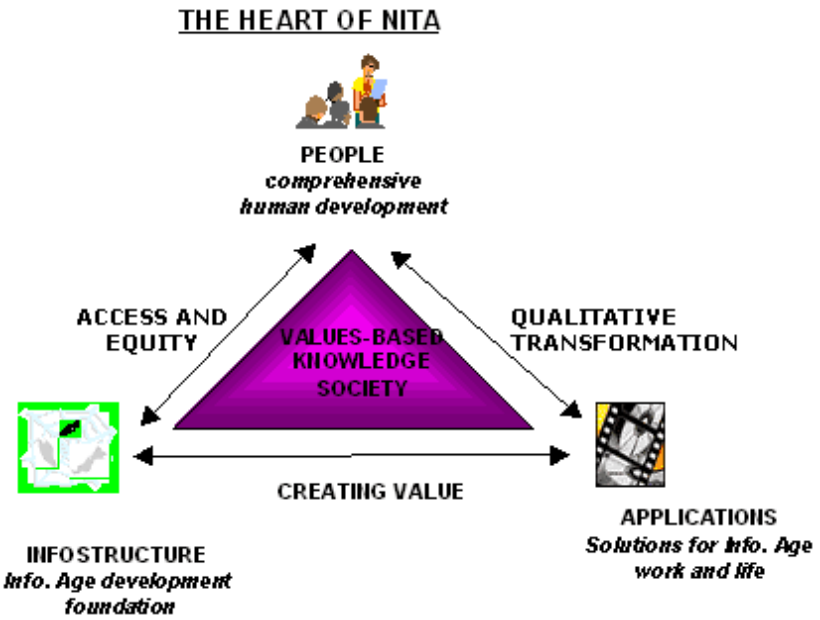

Figure 6.1 : National IT Framework

source: NITC website

The three key elements are People, Infostructure and Applications which are interconnected and working together at the same time. The relationship between the three elements is shown in the triangle : access and equity, creating value and qualitative transformation. The prominence of the human factor in the framework is shown by placing 'people' at the apex of the triangle. This reflects that the NITA realises that no amount of technological advancement can replace the importance of the human factor. The people factor is supported by the infostructure and the applications. Two types of infostructure are identified, “the hard infrastructure involves the computer hardware and the relevant telecommunication components. The soft infrastructure on the other hand includes databases, networks, laws, and regulations”.The infostructure is planned to facilitate equitable access to information. The applications element looks at developing content that is local and culturally compatible. Suitable and cost effective applications are needed in order for the country to remain competitive. The applications is hoped to drive the qualitative transformation needed for a comprehensive human development (National Information Technology Council, 2010c).

Looking at the framework, several questions can be raised in the process of aiming for a values-based knowledge society: What kind of information is to be provided through the infostructure? What kind of values are involved in the process of accessing the information? What kind of value is planned to be created through the technology applications with the support of the infostructure? What kind of qualitative transformation is hoped for the people? What kind of values is hoped for the values-based knowledge society? Finally, what is the view of the people involved in the planning and implementation of these development initiatives? These questions form an outset for the investigation in this chapter. With reference to the objective of this

doctoral study and the discussions presented in the previous chapters, what is strived for is an understanding on the incorporation of Islamic values in the kind of information provided, the process of accessing the information and through the technology developed. The transformation and values that are hoped for the society are of those that are guided by the *Sharī'ah* and its *Maqāṣid* that bring the members of the society to realise the meaning of their creation as God's servants and *khalīfah* on earth, ultimately leading them back to the meaning of *Tawḥīd.* How do the people that are responsible of the planning and implementation of the development initiatives view these matters in light of the Malaysian context are investigated in the fieldwork study. The efforts of the government in introducing Islamic values into the country's development are discussed first.

6.3 Islamic Development Initiatives

6.3.1 The Inculcation of Islamic Values in Administration Policy

The policy, known in Malay as 'Dasar Penerapan Nilai-Nilai Islam Dalam Pentadbiran', was first announced by the past Prime Minister, Tun Dr. Mahathir Mohamad in 1981 (Mohamed Aslam, 2005) and properly implemented in 1985 as an effort by the government "to introduce Islamic elements in the administration and life style of citizens" (Department of Islamic Development Malaysia, 2009).

The government sees values as an important element in shaping the identity of the multi-racial and multi-religious Malaysian society. With the inculcation of values that are noble and universal, it is aimed that a common identity can be fostered by the Malaysian society, that in turn will contribute to the development of the country and the society. By focusing on the government administration as the initial step for inculcation, matters of the country's development is expected to be handled by members of the

administration in good order and efficiency based on the noble values, preventing any corruption, misuse and abuse of power (Prime Minister's Office, n.d.; Department of Islamic Development Malaysia, 2009). Therefore, the policy places values as an enabler for creating an "effective, strong, just and progressive administration" that can accelerate the productivity and progress of the nation (Mohamed Aslam, 2005). It can also be said that the policy celebrates the universality of Islamic values by placing the 'Islamic' label for values that are targeted for all Malaysians. Eleven values have been identified to be promoted under this policy.

Table 6.3 : Eleven Values of the Inculcation of Islamic Values in Administration Policy

• trust
• responsibility
• sincerity
• dedication
• moderation
• diligence
• cleanliness/integrity
• discipline
• cooperation
• kindness
• gratitude

(source : Prime Minister's Office, n.d)

Agencies like the Anti-Corruption Agency (now known as the and the Malaysian Anti-Corruption Commission) and the Film Censorship Board is seen as supporting the aim of this policy despite not carrying the Islamic label in their names (Department of Islamic Development Malaysia, 2009). In addition, the establishment of several Islamic institutions like Islamic banking and financial systems, Islamic insurance and the International Islamic University Malaysia and other Islamic colleges are also attributed

to the implementation of the policy in the society (Urusetia Induk Pendekatan Islam Hadhari, 2007). As a whole, the policy can be seen as an attempt towards “improving individuals in their thinking, behaviour and value orientation” (Mohamed Aslam, 2005). The values under the policy are presented as universal values for the multi-racial and multi-religious Malaysian society. Nevertheless, as reflected in the responses obtained from respondents interviewed in the fieldwork study of this chapter, any impact or 'improvements in thinking, behaviour or value orientation' that the policy may have on government official is not without the Islamic undertone, befitting the name of the policy. However, how far the impact of the policy has lasted over the years is difficult to ascertain. Despite its continuous implementation under the purview of the Department of Islamic Development Malaysia, with the removal of the then Deputy Prime Minister, Anwar Ibrahim, from the government in September 1998, the policy is seen to have lost someone seen as its major prime mover in the country's administration. However, some advancement in the Islamic approach of the government can be seen with the Islam Hadhari approach introduced by the Prime Minister succeeding Tun Dr. Mahathir.

6.3.2 The Islam Hadhari Approach

The approach, literally translated as the 'Civilisational Islam' approach (Department of Islamic Development Malaysia, 2005) was announced by the then Prime Minister, Abdullah Ahmad Badawi, during the ruling political party's general assembly on 23rd September 2004. It was introduced to provide emphasis to aspects of development based on Islamic values and focus on efforts to improve the quality of life and human development (Urusetia Induk Pendekatan Islam Hadhari, 2007). The Islam Hadhari approach is defined as “a comprehensive approach for the development of mankind, society and country based on the perspective of Islamic civilisation”. Its vision is “to make Malaysia a model Islamic country, that is, an advanced nation based on its own

indigenous matrix" with a mission "to implement the development agenda of the country and *ummah* based on an Islamic approach which is universal, advanced, civilized, tolerant and balanced". The main objective of the approach is "to produce individuals and a Muslim society imbued with spiritual, moral, intellectual and material strengths and are independent, competitive, visionary, innovative and competent in overcoming challenges wisely, rationally, pragmatically and peacefully" (Department of Islamic Development Malaysia, 2005, p.7, 9-11).

The approach is seen as a continuation of the Inculcation of Islamic Values Policy after two decades of its implementation, with a bigger focus on development of the society based on the perspective of Islamic civilisation. It also plans to overcome any weaknesses of the previous policy (Urusetia Induk Pendekatan Islam Hadhari, 2007). It outlines ten basic principles that are seen as vital for the society to face today's global challenges. The government claims that the formulation of the principles seeks to avoid "any misunderstanding or anxiety among any group in a multiracial and multi-religious country" that is Malaysia (Department of Islamic Development Malaysia, 2005). The principles are as below:

Table 6.4 : Ten Principles of Islam Hadhari

• Faith in and piety towards Allah
• A just and trustworthy government
• Free and liberated people
• A rigorous pursuit and mastery of knowledge
• Balanced and comprehensive economic development
• A good quality of life for the people
• Protection of the rights of minority groups and women
• Cultural and moral integrity
• Safeguarding of the environment
• Strong defence capabilities

(source: Department of Islamic Development Malaysia, 2005

The Islam Hadhari approach has been closely connected to the nation's development agenda, as highlighted in the most recent five year national development plan, the Ninth Malaysia Plan 2006-2010, and the long-term National Mission 2006-2020 of which the plan is part of (Mohamad, 2007). The Prime Minister, in tabling the Ninth Malaysia Plan in the Parliament on 31st March 2006 mentioned that it is the desire of the government to build a civilization for the country that is in line with the Islam Hadhari approach (Ahmad Badawi, 2006). Islam Hadhari is positioned by the government as "a comprehensive and universal development framework for the nation" (Ninth Malaysia Plan 2006-2010). Under the National Mission, Islam Hadhari is placed in relation to the mission's second thrust which is "to raise capacity for knowledge and innovation and nurture 'first class mentality'" (p.15). One of the strategies under this thrust is 'nurturing a society that is cultured and possess moral strength' whereby the spirit of Islam Hadhari that emphasizes on principles based on noble universal values will be instilled (Ahmad Badawi, 2006). Islam Hadhari will be promoted as "a foundation for a progressive developmental outlook" in the process of fostering a society with strong values (Ninth Malaysia Plan 2006-2010). The government has devised a five year strategic plan beginning 2006 until 2010 for the planning and implementation of the Islam Hadhari approach (Urusetia Induk Pendekatan Islam Hadhari, 2007). This period coincides with the Ninth Malaysian Plan, hence the close connection between the two.

Some criticism has arisen against Islam Hadhari, particularly the use of the term implies 'a new kind of Islam' or 'a new religious school of thought' altogether. 'Islam Hadhari' can be translated as 'Civilized Islam', thus giving an impression that there is an 'Islam Badawi' or 'Uncivilised Islam', whereas there should be only one type of Islam . The term also gives an impression that Islam is subordinate to civilisation in general, and not

a superior way of life. Hence a more appropriate term would be the more common term 'Hadharah Islamiyyah' or Islamic civilization (Awang, 2005). However, the government has stressed that Islam Hadhari is not a new school of thought or form of teaching but an approach to emphasize the practice of Islam in a "comprehensive, holistic and realistic manner in order to translate religion into people's life" (Department of Islamic Development Malaysia, 2005).

The status of Islam Hadhari after 2010 is still uncertain. With a different Prime Minister in place beginning April 2009, different emphasis is expected concerning the position of Islam in the administration and development of the country. This can already be seen with the announcement by the Minister-in Charge of Islamic affairs that the Islam Hadhari approach, together with other Islamic programmes, will be revised to look into the acceptance of the people and the effectiveness in its implementation (Utusan Malaysia, 11 April 2009). Nevertheless, the Islam Hadhari approach can be lauded as an attempt by the government to bring Islamic elements into the mainstream development plans of the country.

Attempts like the Inculcation of Islamic Values in Administration Policy and the Islam Hadhari approach have managed to expose the government officials to an Islamic-natured understanding in relation to their tasks and responsibilities in the government. With the majority of government officials being Muslims, this kind of understanding would support to form perspectives of the officials on how elements of Islamic teachings exist in the nation's development. These perspectives are sought through the fieldwork study conducted in relation to the ICT development policies and programmes.

6.4 Issues on Islamic Values in Malaysian ICT Development Policies and Programmes: A Study of the Perspectives of Malaysian Public Sector ICT Officials

6.4.1 Background, Purpose and Scope of the Fieldwork Study

The importance of Islamic values for science and technology development in Malaysia have been highlighted by some authors, for example Shaharir (1992) and Khalijah (2004), as mentioned in the earlier chapter. Similarly, the Malaysian ICT visionary, Tengku Mohd Azzman Shariffadeen Tengku Ibrahim (1998, 2009), had stressed the need for Muslims to demonstrate their model of development imbued with Islamic values in the development of ICT and the knowledge society. Incorporation of Islamic values in scientific and technological development is seen possible in two ways (Unus, 1985). On a long term basis is through education, whereby an Islamised and integrated education process would produce professionals that possess the needed understanding and knowledge to include Islamic values in the development process. This is indeed a very much ideal and hoped for situation by the Muslims, in which continuous efforts are being done towards achieving this situation. In addition, policies related to development of science and technology is seen as a more short term approach towards incorporating Islamic values. The policies define the goals and aim to be achieved by various programmes administered and carried out by the relevant authorities and bodies. Therefore, these development policies and programmes can become an appropriate avenue for incorporating Islamic values. Those responsible for the policies and programmes should have an awareness of the importance of values and of promoting righteous morals and preventing harmful evils (Unus, 1985). Therefore, attention should be given to these people when looking at values for scientific and technology development.

In this light, government officials and policy makers play a significant role in the direction of ICT development in a country. They are in a position that gives them a proper understanding of the issues relevant to the nature of ICT development in the country, as opposed to external parties, for example foreign consultants (Alhabshi, 2002). Within the context of various Islamic initiatives implemented by the Malaysian government, questions may rise on what is the outlook of government officials involved in ICT development programs concerning Islamic values and their line of work. Does any value consideration exist in developing the programs and policies? Are the values considered Islamic values? What are the issues related to Islamic values in ICT development?

Therefore, in addressing these and other related questions, a fieldwork study was conducted on government officials involved in ICT development programs. This is in relation to the fourth objective of this research. Aspects of Islamic values for ICT in the framework outlined in the previous chapters were brought to the attention of the government officials and their perspectives were sought. The purpose of this study is to gain an understanding on the present practical and 'on the ground' issues concerning the incorporation of Islamic values in ICT development in Malaysia from the perspective of the government officials. In other words, the question to be addressed is, based on the perspective of the government officials, what are issues that need to looked into when discussing the incorporation of Islamic values in ICT development in Malaysia. The answer to this question will be obtained by investigating three aspects:

1. General perception of the government officials on aspects of Islamic values for ICT.
2. Perspective of the government officials on the relation between Islamic principles and ICT development

3. Present concerns surrounding the incorporation of Islamic values in ICT development in Malaysia through the perspective of the officials

The first aspect is investigated to obtain a general view of the government officials perception towards Islamic values for ICT. The second aspect goes further by asking them about their views on relating Islamic principles of *Tawḥīd*, *Maqāṣid Sharī'ah* and *niyyah* to ICT development. The third aspect aims at gathering their perspectives on Islamic values in the context of Malaysian ICT development policies and programmes that can be related to communication process, information content development and technology shaping. This aspect relates to the first, second and third objectives of this research by gaining insights into the current scenario of the three activities in Malaysian ICT development as seen through the perspective of the government officials.

These three aspects represent the general areas that will be explored during the data collection. Since the government officials have been exposed to the Islamic development initiatives, these initiatives will have some bearings on how they view any values that are identified in the present ICT development policies and programmes. Likewise, values that exist in the ICT development programmes and policies would also influence the government officials' perspective on Islamic values in ICT development. Thus the conceptual framework for this fieldwork study can be depicted as follows:

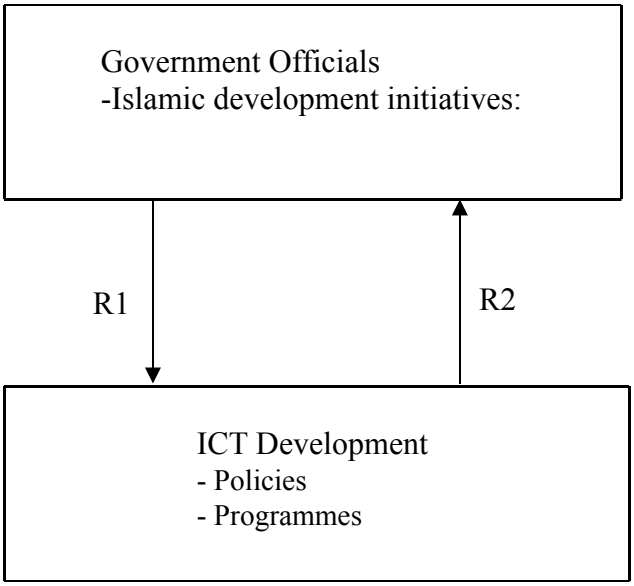

Figure 6.2 : Conceptual Framework for Fieldwork Study

R1 signifies the government officials imposing values for the existing ICT development policies and programmes based on their experience with Islamic development initiatives. R2 indicates any existing values in the ICT programmes and policies influencing the government officials' perspective on Islamic values in ICT development. This framework follows the reciprocal relation between technology/ICT and man/society as discussed by the approach of social shaping of technology and depicted by Edge (1985) and Fuchs (2008) in Chapter 5.

The officials that are the focus of this fieldwork study are those that have good knowledge and understanding concerning matters of ICT development in Malaysia. Most of the officials are from central agencies that have far reaching and and comprehensive scope affecting the direction and issues of ICT development in Malaysia, and not limited to a certain area of responsibility like education or agriculture. Some of the officials are academicians at public institutions of higher learning that have been consulted by government agencies in the planning and formulation of ICT

development programmes, and whom have also done research on these matters. A few of the officials are from the government's central Islamic development agency who are responsible for ICT development related matters. These officials are targeted because of their relevance to the nature of this study. The nature of the selection of all the officials is determined in this manner so as to gain input that is considered to cover a broader perspective of ICT development, and not limited to certain areas of practice.

6.4.2 Research Methodology

The study follows the qualitative paradigm since its focus of interest are the meaning ascribed by the government officials to their professional experience, in this case regarding incorporation and existence of Islamic values in ICT development. Seeking to understanding the meaning people have constructed about their experiences or in other words, "how do people make sense of their experience" is a characteristic of qualitative study (Merriam, 2002, p.4-5). The assigning of meanings to experiences by individuals are studied qualitatively since it is part of the construction of one's life-worlds. Life-worlds include "emotions, motivations, symbols and their meanings, empathy and other subjective aspects associated with naturally evolving lives of individuals and groups" (Berg, 2009, p.16). According to Sumner (2006) qualitative studies focuses on "the meanings and interpretation of social phenomena and social processes in the particular contexts in which they occur" (p.249). The qualitative approach is also chosen because the objective of this study would require gathering of data that can provide a certain level of depth and detail in order to understand the perspectives held by the government officials. Such data could not be provided through the quantitative approach.

By seeking to discover and understand the perspectives of the government officials on the issues presented to them and how they make meaning of these issued based on the

situation they are in, this study takes on an interpretive approach. Information is collected through interviews and analysed inductively to identify repeating patterns or common themes that present themselves through the data. Interviews are suited for the interpretive approach since it supports the construction of knowledge through oral and written narratives (Azilah, 2006). The findings from the analysis would reveal the meanings that emerge from the direct experience of the people interviewed because in qualitative interviews, the respondents are viewed as makers of meaning (Merriam, 2002; Warren, 2002).

In addition, since the study looks at the lived experience of the government officials, this study also considers the phenomenological approach in the conduct of the study and analysis. Van Manen (1990) mentions that phenomenology "aims at gaining a deeper understanding of the nature or meaning of our everyday experience" (p.9) Thus, this study strives to understand how the government officials interpret their experiences by way of interviewing in order to gain as direct an experience possible from the officials. This is following what is mentioned by Patton (2002) in characterizing phenomenological inquiry. He also stresses, echoing Van Manen, that phenomenological research has the assumption that there are essences to shared experience. "These essences are the core meanings mutually understood through a phenomenon commonly experienced. The experiences of different people are bracketed, analysed, and compared to identify the essences of the phenomenon... " (p.106). Merriam (2002) describes 'bracketing' as setting aside temporarily any attitudes or beliefs about the phenomenon in order to heighten consciousness. In this way, the researcher will be able to grasp and understand the essences from the experiences. In other words, the commonalities from these experiences will then become apparent through bracketing (Eichelberger, 1989) The meanings that comes out from the findings of this study is hoped to uncover the

essences that are commonly experienced by the government officials concerning Islamic values and ICT development.

As mentioned above, interviews were used as the means to gather responses from the government officials. Maccoby and Maccoby (1954) defines an interview as “a face-to-face verbal exchange in which one person, the interviewer, attempts to elicit information or expressions of opinion of belief from another person or persons” (p. 499). According to Kvale (1996, p.7), an interview is “a conversation that has structure and a purpose”. Qualitative interviews are aimed at deriving interpretations from the respondents' talk, in order to understand the meaning of their experiences and life world. They are used when the focus is to establish common patterns or themes between certain types of respondents (Warren, 2002).

Based on the objectives and approach of the fieldwork study, semi-structured interviews were employed for information collection. This is to provide qualitative depth to the information collected since the respondents are able to discuss the issues presented to them through their own perspectives, thus giving an understanding of the issues “in the interviewee's own terms” (Valentine, 1997, p. 118). According to May (1993), semi-structured interviews are “...type of interviews that allow people to answer more on their own terms...but still provide a greater structure for comparability over the focused interview” (p.93). Guba and Lincoln (1981) believe that semi-structured interviews are most appropriate when “...the issue is complex, the relevant dimensions are unknown, or the interest of the research lies in the description of a phenomenon, the exploration of a process, or the individual's formulation of an issue” (pp.177-178).

Even though the respondents were free to present their views, an interview guide was prepared beforehand to help in posing questions and guiding discussion during the interviews. Questions words like 'what' followed by 'why' and 'how' were used to garner responses from the respondents. However, the interviews were not rigid, allowing the respondents to share whatever that came to their mind about the issues that were being discussed. As the study went on, some minor modifications were made based on the responses from the respondents who were interviewed earlier on and the issues raised by them. However, the modifications did not affect the fundamentals of the interview guide.

The issues that were identified in guiding the interview process based on the the areas investigated in this fieldwork study are as follows :

Table 6.5 : Interview Guide

1. Perception on Islamic values and ICT • general view on the incorporation of values in ICT • possibility of Islamic values to be incorporated in ICT • role of Islamic values in ICT development
2. Perspective on the relation between Islamic principles and ICT development • *Tawḥīd* as fundamental guide • *Maqāṣid al-Sharī'ah* as source of values • *Niyyah* and planning of ICT development
3. Present concerns on incorporating Islamic values in ICT development • motivation to have values • are these values considered Islamic values • effects of present Islamic development initiatives in producing a conducive context • issues or concerns within the present ICT development policies and programmes and in light of the Islamic values regarding: ◦ the communication activities using ICT ◦ the development of informational content ◦ the development of the technology as a whole

(Table 6.5 continued)

- consultation with Islamic government agencies
- suggestions on how to incorporate Islamic values in ICT development

Guiding interview questions based on the guide are listed in Appendix B. Apart from the issues mentioned in the interview guide, respondents were also asked on issues specific to the particular agency or past involvement of the respondent. These issues were either identified earlier through the agency's website, the respondent's resume, or probed during the interview sessions.

6.4.2.1 Sampling

The selection of respondents is done by purposeful sampling. In purposeful sampling, sometimes also called purposive or judgment sampling, respondents are selected based on certain criteria such as specialist knowledge related to the research topic, or having the ability and willingness to participate in the research (Oliver, 2006a). Purposeful sampling is used when there is a need to identify 'information rich' respondents that can provide data that are detailed and relevant to the purpose of research as determined by the researcher (Oliver, 2006a; Patton, 2002; Bernard, 2000).

This study makes use of purposeful sampling based on the fact that the relevant government officials that have the potential to provide rich input to this study can be directly ascertained. This sets the base criterion for sample selection. The respondents are considered key informants for this study based on the agency they are attached to and the position they hold. According to Patton (2002), key informants are “people who are particularly knowledgeable about the inquiry setting and articulate about their knowledge” (p.321). He mentions that they are sources of information for the researcher

in understanding what is happening and why, especially about things that the researcher has not or cannot experience.

As mentioned previously, the agencies selected are those that are having a more general and comprehensive scope affecting the direction and issues of ICT development in Malaysia, and not limited to a certain area of responsibility like education or agriculture. This criterion, apart from being the focus of this study, also provides some degree of overall 'coverage' for the study in terms of ICT development. One agency selected does have a limited scope of responsibility, i.e. Islamic development. However, this agency was selected because it is the central agency at the national level for Islamic affairs, which is relevant to the purpose of this study. Respondents from this agency are those who are responsible for ICT development related matters. Respondents interviewed represent the following agencies:

- ICT Policy Division, Ministry of Science, Technology and Innovation
- Malaysian Communications and Multimedia Comission
- Malaysian Administrtive Modernization and Management Planning Unit, Prime Minister's Department
- Malaysian Islamic Development Department, Prime Minister's Department

The position of the respondents are of Assistant Director and above and they are directly in-charge of ICT development matters. This allowed rich input to be obtained during the interview sessions as compared to lower ranking officials. In sum, the choice of respondents is rather exhaustive to a certain extent, covering almost all the relevant officers in the relevant agencies.

A number of the respondents also consist of academicians at public institutions of higher learning. They are considered government officials since these institutions are

regarded as agencies under the Ministry of Higher Education (Ministry of Higher Education, 2009). They were selected based on their experience and familiarity with ICT development in the country. Some of them have been invited by government agencies to provide consultation at various levels in the planning and formulation of ICT development programmes. Amongst them also include those having experience conducting research on ICT development policies and programmes, as well as some with experience being attached to other government agencies before joining the academia. Therefore, those selected are also considered key informants and deemed suitable as respondents for this study.

Based on these criteria, the respondents are considered suitable in providing the needed feedback for this study. Most of the respondents were identified through their agencies website. Since the researcher is also an academician, the respondents from the academia were able to be identified through personal contacts and the researcher's own knowledge about the respondents capacity in meeting the purpose of the study.

Respondents who were interviewed at the early stages were also asked to suggest other officials deemed suitable to be interviewed. Therefore the 'snowball' method was also employed in identifying the respondents. This method is appropriate for this study because through the 'snowball' method, the researcher is able to identify potential information-rich key informants with similar experience as the respondent (Patton, 2002; Oliver, 2006b). The respondents would suggest certain individuals and those who were mentioned repeatedly would become potential respondents. It is worth mentioning here that some of the respondents suggested by their peers through this method had actually been originally identified to be interviewed, thus reinforcing them as potential respondents for this study.

A total of fourteen respondents were interviewed during this study. From this total, six were academicians from institutions of higher learning and eight were officials from other agencies. The academicians consist of two professors, three associate professors and one senior lecturer with a doctorate degree. The nine other officials comprise of three Deputy Undersecretaries, three Directors and two Assistant Directors. Bowen (2008) mentions that an 'appropriate' sample consist of those who best represent the research topic or have knowledge about it. Based on recommendations in the literature, the number of respondents is appropriate for a study using qualitative interview method. Onwuegbuzie and Leech (2007), in reviewing recommendations from other scholars of qualitative design, mentions that Creswell (1998) suggests that interviewing up to ten respondents is deemed appropriate for a phenomenological study, while Morse (1994) sets the minimum number of respondents at six. In her study on how different American subcultures perceive the Y2K problem in computer systems, also known as the 'millennium computer bug', Tapia (2003) interviewed fifteen respondents from each subculture. In studies that make use of purposeful sampling, Patton (2002) mentions that the sample size is judged not based on the logic and recommended sample sizes common for probability sampling, but according to the rationale of the study and whether it supports the purpose of the study. He further relates that the validity and meaningfulness of qualitative studies has more to do with 'information-richness' rather than sample size. Lincoln and Guba (1985) suggest that for purposeful sampling, the sample size is dependent on whether redundancy is achieved, i.e. no new information is obtained as the sample size increases. Johnson (2002) also echoes a similar sentiment . This situation is also called saturation by other scholars (e.g. Morse, 1995). Guest, Bunce and Johnson (2006) conducted an experiment employing statistics to determine a number for sample size with regards to saturation. They used data they gathered from

their study on perceptions of accuracy of self-reported sexual behaviour in the context of reproductive health research. The data came from sixty in-depth interviews they conducted. They found that after six interviews, basically enough data was present to support the emergence of high-level, over arching themes. This number is similar to what Morse had stated. They also found that in describing a shared perception, belief or behaviour, a sample size of twelve is likely to be sufficient. In the conduct of this fieldwork study and the analysis of data, the researcher found that saturation was achieved with the number of respondents interviewed and is confident that the the number of respondents is appropriate for the purpose of the study and that the number is also within the range recommended by the literature.

6.4.2.2 Fieldwork Activities

The number of officials that were initially identified for this study was fourteen, consisting of seven academicians and seven officials from government agencies. Respondents were sent letters requesting for an interview. Eleven replied positively while three others failed to give any promising indication despite further communication attempts and were eventually dropped from the list of respondents. One official that replied positively was not interviewed. The researcher faced difficulties in confirming the appointment date because of the official's busy schedule and eventually decided not to conduct the interview after considering opinions from other respondents who knows the official that the said official is not particularly deemed suitable for the intended study. Despite these shortcomings, the researcher managed to get an appropriate number of officials to be interviewed after getting recommendation from other respondents in order to replace those who were earlier dropped. The number of respondents that were finally interviewed is fourteen with six academicians and eight officials from government agencies. Each interview session lasted between one to two

hours. The period taken to complete the field work was approximately three months. Interviews were recorded using a digital audio recorder and later transcribed for analysis. Interviews were mainly conducted by the researcher in English. However, some portions of the interview were in Bahasa Malaysia, for example when the respondents elaborated some of their responses. These portions were translated into English prior to the analysis. Notes were also taken during the interview sessions and acted as a cross reference to the audio recording. Respondents were promised anonymity in exchange of freedom in expressing their views. For this purpose, respondents were given a pseudonym in the form of alphanumeric characters as identification in the reporting.

In the process of conducting the interviews, some problems were faced. A major difficulty was gaining access to the officials that have been identified due to lack of cooperation as mentioned earlier. One particular agency did not gave any feedback. This is despite the researcher personally telephoning and delivering by hand the letter requesting for interview. It is unclear whether this problem is due to the 'gatekeeper' issue or the practice of the particular agency, since similar difficulties were faced by other researchers in communicating and gaining access to that agency (Interview with Dr. Nizam Osman, 2 March 2010). Therefore replacement respondents were sourced from the other agencies. Changes in the practice of the agency also prevented access to the officials. One agency, which the researcher managed to interview three officials, had directed later correspondence to their top administration, citing internal regulatory requirements. This eventually lead to the researcher being unable to interview an official that was initially identified as a potential respondent, who was also recommended by his colleagues to be interviewed. However, his colleagues who were interviewed did manage to provide responses related to that official's area of responsibility.

Another problem faced by the researcher is in setting appointment dates for the interviews. Although this matter did not occur for all appointments, some respondents had to change dates that were previously agreed upon. For a few respondents, the appointment dates had to be changed quite a number of times before finally being interviewed. The common reason was sudden changes in the schedule of the respondent due to various work related engagements. The Influenza A(H1N1) or 'swine-flu' pandemic that occurred during the data collection period also had effect on the interviews, in which at least two respondents had to cancel at the last moment previously agreed upon appointments because of sudden closure of their agencies. However, apart from the obstacles mentioned above, in the overall it can be said that the data collection process went well and the researcher managed to interview the needed respondents and gather sufficient amount of information form the respondents to be analysed.

6.4.3 Analysis

In line with the nature of this study, the data analysis follows the interpretivism approach whereby “human activity is seen as “text” - as a collection of symbols expressing layers of meaning” (Miles and Huberman, 1994, p.8). In the context of this study, the activity is the responding to the interview questions by the government officials. Within this general approach, in particular the analysis is also phenomenological which seeks to “grasp and elucidate the meaning, structure and essence of the lived experience of a phenomenon for a person or a group of people” (Patton, 2002, p.482). For this study, the government officials provide responses based on their experience being involved in ICT development policies and programmes in Malaysia.

As a qualitative study, the analysis does not wait until after the data collection is concluded. The first few interviews, as they were analysed following the data reduction process mentioned below, provided some basic ideas of potential issues and points that could emerge in the later interviews and eventually develop into themes . These ideas evolved as more interviews were completed and further analysis done. They were also useful in the interviews as respondents interviewed during the later stages were asked about their perspectives on them for validation, commentaries or elaboration. More significant analysis occurs with the data reduction process.

6.4.3.1 Data Reduction

Data reduction refers to “the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions” (Miles and Huberman, 1994, p. 10). Before data collection, anticipatory data reduction happens when decision is made on the conceptual framework, cases, research questions and approaches to data collection. Data reduction continues during and after the data collection period (Miles and Huberman, 1994). Qualitative interviews require the researcher to carefully listen “ so as to hear the meaning” that lies within the conversation (Rubin and Rubin, 1995, p. 7). During the analysis, cross reference was made between the transcription of the interviews, notes taken during the interviews, and the audio recording itself in order to gain as high as possible the level of accuracy and understanding of the respondent's speech.

The unit of analysis chosen is the three parts from the interview's guiding questions,as a way to have some tentative organisation of the data before beginning the analysis. This is according to the suggestions from Tesch (1990) in creating an organising system that

brings order to a collection of data for the purpose of analysis. According to Tesch, an organising system can be derived from the research questions and sub-questions, research instrument, concepts or categories used by other authors in previous related studies and the data themselves. By using the the three parts from the interview's guiding questions, this researcher is referring to the research instrument which corresponds with the three main areas of the interview guide which is also the three main aspects investigated in the fieldwork study, which can be considered as the research sub-questions. In addition to this, the analysed data themselves will become another source for organisation at the later stage of the analysis.

The parts from the guiding questions were also chosen as a way to organise data based on the outcome of the interview process. A few of the respondents had 'glossed over' and provided a 'wholesale' answer to several questions within a same part of the list of guiding questions, despite the researcher's effort to guide the interview accordingly. This happened particularly to respondents that requested the list of questions during the interview, although it did not happen with all the respondents who had the questions with them. In addition, by doing so, the researcher managed to overcome the incident whereby the respondents provided their responses in a free manner and not purely following the sequence or questions being asked within the parts or jumping from one part to another. As an interview conducted in a semi-structured manner, some of the responses went beyond the scope of the specific questions in the guide. Such kinds of freedom is tolerated during the interview in order to gain as much depth possible in the responses. Even so, these responses can be related to the three main parts of the interview guide. Therefore, using the three parts of the interview guide was seen as a suitable choice for preliminary data organisation. Results are then combined together for a more holistic view for the subsequent analyses. This is done in accordance with the

purpose of the study which is to to gain an understanding on the present practical and 'on the ground' issues concerning the incorporation of Islamic values in ICT development in Malaysia from the perspective of the government officials. The data reduction process carried out was done in three stages:

Stage 1: The researcher went through each part in the individual transcripts to identify key points highlighted by each informant. Key phrases and terms were underlined, paraphrased and restated descriptively when necessary, noted on the margin and listed down. The list of phrases were analysed and similar phrases or terms that appeared repeatedly were noted for significance. The phrases and terms with close meanings were cross-checked with their original context in the transcripts to see if they were concerned about a same point and combined accordingly to form a phrase with a coherent meaning. Otherwise, they were treated separately. The result is a final list of all the key phrases or key topics for each respondent according to each part. This can be considered as a form of preliminary propositions from each respondent that depicts the perspective of the respondent on the aspect investigated under each part. Each phrase is given a unique identification in alphanumeric form. This is repeated for all interviews. The results are as shown in Appendices C, D and E.

One particular outcome that can be observed here is the uneven number of key phrases for each respondent. This is due to some reasons. One of them is because of respondents giving a 'wholesale' answer to several questions, as described earlier. Despite the rich description given by the respondent, it tends to centre around a similar issue or issues which the respondent relates it to the different questions asked. This happened despite the researcher's effort to garner variety to the answers by varying the questions. This probably demonstrates the degree of importance the respondent places on a particular

issue, thus indicating the respondents perspective to the points raised in the interview questions. Another reason is the avoidance of a few respondents to provide answers to some questions, although the number of those who displayed this is very small. One one occasion, the respondent humbly abstained from responding, citing lack of knowledge on some Islamic related points raised. The particular respondent expressed his concern on elaborating on Islamic related matters without proper knowledge, although the researcher mentioned that only a common understanding is needed to respond to the points raised, to which the researcher provided explanation to those points. It also cannot be ascertained if the avoidance is related to any feeling of fear in providing responses although the respondents have been reminded of full confidentially of the answers given. Nevertheless, these were isolated and uncommon incidents. As a whole, the researcher managed to obtained a significant amount of data to be analysed. The next stage of analysis is described as follows.

Stage 2: This stage involves creating clusters from the key phrases. Clustering is described as the attempt "to understand a phenomenon better by grouping and then conceptualising objects that have similar patterns or characteristics" (Miles and Huberman, 1994, p. 249). All statements from the three tables were analysed to search for patterns that suggests some form of category. Therefore clustering in this stage is for the purpose of organisation to create categories from the key phrases. For this, the interview questions provided some initial direction, but organisation mainly came from the phrases themselves in finding the patterns. This is similar to what Tesch (1990) had mentioned earlier on organising systems that are characteristic of inductive kind of studies, i.e. the organisation coming from the data itself. In this case, the data is in the summarised form of the key phrases. In this sense, common terms found in the phrases gave some direction to the clustering. Different clustering patterns were tried out

through aggregation and comparison, as suggested by Miles and Huberman (1994). Descriptive labels were given to the patterns to try and form clusters that are representative of the issues mentioned in the key phrases. The result of this stage is shown in Appendix F.

Stage 3: Results from Stage 2 is further analysed to look for, in the word of Miles and Huberman, a more abstractly defined class as a distinctive label or theme for the issues that the fieldwork study attempts to identify, i.e. issues concerning the incorporation of Islamic values in ICT development in Malaysia from the perspective of the ICT officials. Miles and Huberman (1994) calls this 'subsuming particulars into the general'. This is considered a higher level of clustering. For this, the researcher looks at the descriptive labels from Stage 2 to iteratively come up with more general catagories that can be seen as inclusive of the meaning of the data obtained through the interviews. The researcher also goes back to the earlier levels of data for further verification. The finalised categories are each given a theme that describes the particular category. This is shown in Appendix G.

In addressing the matter of validity, feedback and clarification was sought from the respondents with regards to the findings from the analysis, particularly in Stage 1, and forming the final themes in Stage 3. This strategy is seemed as most appropriate since the input of the study is based on the responses from the respondent. This was achieved by means of e-mail communication. Any feedback and clarification were taken into consideration and checked against the findings for comparison and verification.

6.4.4 Findings and Discussion

From the analysis conducted, the following themes were identified with regards to the perspectives government officials on Islamic values and ICT development in Malaysia:

6.4.4.1 Universality of Islamic Values

The universal nature of Islamic values is stressed as a key point by all the respondents, whereby positive and good values are common in all societies. This perception is familiar for a multi-religious society like Malaysia. Thus, the matter of universality is considered as an overbearing issue by all the respondents, and underscores their discussion on values for ICT, whether concerning communication process, information content, or technology development. In the case of Islam, Islam has been ordained by Allah as a universal religion and way of life for all mankind. Muslim scholars have described the universality of *Sharī'ah* with reference to the Islamic sources, which is appropriate to this matter since Islamic values originate from it. The universality of the *Sharī'ah* has been discussed in Chapter 2.

The respondents feel that it is acceptable to not explicitly mention good values as being Islamic, but as universal or social values. This is in order to prevent any uncomfortable sentiments among the non-Muslims. Such a feeling is common since religious and cultural sensitivities are major concerns for the Malaysia society. Nevertheless, some respondents are quick to mention that for Muslim ICT practitioners, it is important that they ground the values in the belief of *Tawḥīd* and understanding of the *Sharī'ah* and that they must be clear on this matter because it will have bearing on the information content and technology developed. This is to ensure that the values held by Muslims, although universal, are Islamic and not based on other foundations, such as secularism:

> *...we need to analyse our principle values, ...the mother of values that is taught in the west is secularism, so that is why we don't feel strange, maybe most see content that is 'rubbish' in ICT, because of the method of thinking that is secular....* (Respondent RESP11, 2 June 2009, 11:35am)

Therefore, it can be said that even though the values for ICT practices are seen as universal, Muslims should not forget the fundamental understandings of Islam and become 'diluted' by the 'universality' of the values. On the contrary, the notion of 'universality' should be based on the understanding that Islam is universal and suitable for all mankind. This kind of understanding is seen by some respondents as an opportunity to explain to non-Muslims about Islam based on the universal and common shared values:

> *...we know that our responsibility as a Muslim is to bring the non-Muslims to Islam, not to hate them, not to do injustice to them, but to make them love Islam and to bring them to Islam...so that they can understand the concept of Tawḥīd, so that is why I do believe these are the common things that we can start with, the common Islamic ethics that can be shared by the non-Muslims, there are so many things that we do that can be shared by them,...if you talk about doing things in common, they will see that Islam, although we don't call it Islam, but this is something that is universal, I think they will agree...* (Respondent RESP12, 12 June 2006, 3:50pm)

This corresponds to the notion of *da'wah* mentioned in Chapter 3 on communication, whereby in this case the Islamic message is conveyed through the ICT practices. Therefore in this sense, despite the perception of not wanting to openly declare Islamic values for ICT, the possibility to bring non-Muslims closer to understand Islam exist for Muslims with values in ICT practices being the vehicle.

6.4.4.2 Position and Role of Policies in Incorporating Values

It is agreed by the respondents that policies on national ICT development should be connected to values. Unus (1985) has also stressed the importance of focusing on policies as an avenue for incorporating values as mentioned in section 6.4.1. Here, the respondents refer back to the notion of universality when mentioning the values. The Islamic values is deemed to be already in place, but are mentioned as universal or social values. The position of Islam as the federal religion of Malaysia, together with the perception of Malaysia as a Muslim country is taken by some as supporting this belief:

> *...Malaysia is what you call an Islamic country, in our constitution, Islam is the federal religion, so definitely Islamic ethical values, must, should be incorporated in ICT policies and practices...*
>
> *...Islamic values do not contradict with the universal values...its already Islamic values but we don't call it Islamic values...* (Respondent RESP01, 30 April 2009, 2:40pm)

Article 3(1) of the Federal Constitution of Malaysia places Islam as the religion of the Federation, with other religions being allowed to be practiced in peace (Federal Constitution of Malaysia).

Such views by the respondents are in line with statements from the leaders of the country that despite Malaysia having a perceived secular outlook by being a country that does not practice Islamic law fully, Malaysia should be seen as a Islamic country that adheres to the fundamentals of Islam with a federal constitution that states Islam as the official religion and at the same time respects and protects multi-racial and multi-religious rights (Utusan Malaysia, 30 September 2001; The Star, 18 July 2007; Utusan Malaysia, 18 July 2007; NST Online, 20 July 2007). These conditions are similar to

what have been mentioned by some Muslim writers as reviewed by Mohammad Hashim Kamali (2005). Therefore, under these circumstances, it is not surprising that the respondents see the universal values as being Islamic.

For this point, reference is also made by some respondents to the national policy objectives of communications and multimedia development mentioned in Section 3(2) of the Communications and Multimedia Act 1998 (CMA) in portraying elements that can be related to Islam. Among them, Section 3(2)(b) mentions that one of the policy objectives are :"to promote a civil society where information based services will provide the basis of continuing enhancements to quality of work and life". Section 3(2)(f) states : "to ensure an equitable provision of affordable services over ubiquitous national infrastructure". Here, determining the level of 'quality of work and life' and ' equitable provision of affordable services' can be related to the *Maqāṣid al-Sharī'ah* with regards to their related implementation programmes, even though the respondents did not mention it explicitly and how it can be done. In Section 3(2)(j), values are manifested in the form of technical capabilities : "to ensure information security and network reliability and integrity".

By looking at these sections of the CMA, points raised in the previous chapters can be referred. The development of ICT services, infrastructure and technical capabilities can be guided by what has been mentioned in the Islamic shaping of technology mentioned in Chapter 5 in terms of responsibility over the kind of services and technology being developed. By having a sense of responsibility, and connecting it to Allah, this would provide an Islamic spiritual dimension to the efforts of the ICT practitioners in providing '...the basis of continuing enhancements to quality of work and life', '... an

equitable provision of affordable services over ubiquitous national infrastructure', and ensuring 'information security and network reliability and integrity'.

Another aspect to be mentioned is the guidance from the *āyāt* of the *Qurān* as described in Chapter 4 for the development of the information content that is provided through the services developed. This situation gives the opportunity to provide content that can contribute to instill Islamic values in society. This is also a form of *da'wah* which is an aim of Islamic communication, as mentioned in Chapter 3, to be achieved through the ICT services. The respondents also agree that the policy objectives is a suitable avenue for Muslim ICT practitioners to instill the concept of *niyyah* in ICT development, since the policies set the agenda for future ICT development programmes and initiatives.

Nevertheless, despite these points raised here, there is still an opportunity for more visible forms of Islamic input. It is suggested by the respondents that the relevant Islamic authoritative bodies and institutions should be given more avenues for providing consultation in the formulation of ICT development policies. The involvement of these Islamic bodies also should not be confined to matters of 'religious interest' or affairs of Islamic agencies as presently practised.

An important aspect concerning value consideration in policies mentioned by the respondents is the need for leadership with the desire to want the values and the willpower to ensure their continuation :

> *...our leader, even in terms of who manages our department, how do you further that agenda...we can do it overtly, we can do it strategically, how do we position ourselves...* (Respondent RESP05, 18 June 2009, 12:50pm)

The individual plays an important role, especially at the policy making level, if they don't have the spirit, thinking, on what they are doing is a responsibility to Islam, so we won't get the results, so that is why I see if, even the objectives of ICT development are given as general, we are working towards fulfilling the objectives, in the context of Sharī'ah awareness, always under, even though we cannot see it, under God's monitoring system, so it will provide a good output...
(Respondent RESP11, 2 June 2009, 12:00pm)

Related to this point, Ahlan (2005), in his review of nine core IS (information system) capabilities, sees leadership as a core capability required by organizations that could facilitate or hinder strategic IT implementation. This is due to, among others, its function in setting goals and direction, as well as instilling values and culture of practice. A core capability is considered more of a prerequisite that must exist rather than something that is learned or acquired (Prahalad, 1993). In the context of this study, leadership as a prerequisite can play its role in setting the proper goals and practices in the planning and implementation of ICT development policies that has within it values consideration.

The National IT Agenda (NITA) was mentioned by the respondents as an example of leadership directives. Under the purview of the National IT Council headed by the Prime Minister himself, the agenda became the major framework for national ICT development. The agenda was lauded as not only having emphasis on physical and infrastructure, but also giving much consideration to the human and social aspect of ICT development, which is considered to be one avenue for Islamic values input in NITA. Other possible avenues were discussed earlier in section 6.2.3 when looking at the

elements of NITA's framework. As one of the respondents who was involved in the early stages of implementing the agenda describes:

> *We have technology, we have applications, and the other edge is the society, community, so the balancing of that, in technology, application wise on technology, and the user is the recipient, the beneficiary of technology, through applications. So, to me, if you have a well balanced, and you meant all the applications and technology is meant well for the society, for the betterment of society, then that itself holds a strong values of Islam, or Islamic values..."* (Respondent RESP09, 28 July 2009, 11:00am)

Therefore, it can be said that leadership is an important element in instilling the concept of *niyyah* in the setting of the agenda for technology development through the policies. Leadership can also provide direction so that the approach of Islamic shaping of technology can be applied in the implementation of ICT development programmes. This relates back to what Imam (1983) had highlighted, as mentioned in section 3.6 Chapter 3, on the importance of leadership in achieving the strategic aim of Islamic communication, especially the aim of expanding Islamic understanding in the society. With the right leadership, the continuity of values in ICT development policies can be more ensured. Continuity is something not only dependent on leadership, but also other aspects that help to maintain the values in ICT.

6.4.4.3 Maintaining the Values

Another issue that can be identified concerns the maintenance of values to ensure its continuity in ICT development and practices. In addition to the role of leadership mentioned earlier, the respondents mentions several points that relates to this issue. The most basic is values education, whether formally or informally,which are stressed by all

respondents. This is similar to what has been stressed by Unus (1985), as mentioned in section 6.4.1. Educating people about the proper practices of ICT should begin at a young age, for example at the school level. Parents and other members of the society also play an important role on this matter. For this purpose, the government has put in place measures to educate the public on proper ICT use in the form of the Positive Use of Internet Programme (PUIP) launched by the Ministry of Science, Technology and Innovation (MOSTI) on 25 July 2005. The objective of PUIP is to increase the level of consciousness and to educate the target groups (i.e. parents, teenagers and children) regarding the positive use of Internet through guidelines and awareness campaign (Positive Use of Internet Programme (PUIP)). The guidelines provide eleven points for parents, five for teenagers and seven for children as practical steps to be taken when using the Internet (Ministry of Science, Technology and Innovation, n.d.). Even though the guidelines does not explicitly discuss any value implication, one of the respondents from the ministry mentioned that it can assist in creating a value system for the public with regards to ICT use. This is programme has been further expanded into an education and awareness initiative named Cyber Security Awareness For Everyone (CyberSAFE) with guidelines, tips and other relevant information and resources targeting parents, kids, adults, youths and organizations available through a web portal (www.cybersafe.my). The CyberSAFE initiative is managed by CyeberSecurity Malaysia, MOSTI's cyber security agency.

Besides education,the respondents also mention that laws that are enacted can become a deterrence from committing wrongdoings through ICT, thus indirectly become measures for maintaining good values in ICT. For Example the Communications and Multimedia Act 1998 (CMA) under Section 211 prohibits “content which is indecent, obscene, false, menacing or offensive in character with intent to annoy, abuse, threaten or harass any

person". Section 233 makes this prohibition into an offence that is punishable up to fifty thousand ringgit or one year imprisonment or both, and further fined one thousand ringgit "for every day during which the offence is continued after conviction". Section 232 states the offence of fraudulent use of network facilities and services which can lead to a fine of three hundred thousand ringgit or three years prison or both. However, the effectiveness of these laws are still limited. This issue is even acknowledged by the minister concerned when commenting on incidents of cyber misconduct by the public: "They are aware. The only problem is they simply do not bother to respect he law. They think the law will not catch up with them" (Bernama, 18 January 2010). On the limitation of law in shaping man's attitude towards his actions, Al-Qaradhawi (1985) mentions that the laws are only capable to govern the physical but not the spiritual. Therefore, on this matter, one's belief in God and conviction towards religion is the force that can control and maintian one's good behaviour.

A point that can be raised here is that even though anyone found in violation of the laws (for example the offences mentioned above) are liable for prosecution, the government is committed to non-censorship of the Internet (The Star, 25 October 2004). Section 3 (3) of the CMA states that : "Nothing in this Act shall be construed as permitting the censorship of the Internet". Non-censorship is also one of the promises made by the government in the Bill of Guarantees for MSC status companies (Multimedia Development Corporation, 2008e). Therefore, under these circumstances and other forms of challenges, the government has embarked and completed a study on any loopholes that may exist in the present laws and seek out ways in overcoming them (Utusan Malaysia, 8 September 2009). As mentioned by the Prime Minister, who is also the chairman for the National ICT Council, among the challenges that the present laws are facing are anonymity, cross border jurisdiction and evidence gathering (The Sun, 8

September 2009). The measures to be taken form the outcome of this study is yet to be seen.

In this sense, self-restraint and self-discipline is needed to avoid any regulatory intervention or prosecution. This refers back to the inculcation and education of values mentioned earlier in tackling any deficiencies and effectiveness of the present law. For example some the respondents mentions :

> *...sometimes its the moral aspect of it, with which if we have laws that are really 'awesome', with 'FBI-style' enforcement, that one you cannot, you really cannot, because its actually the person's faith, if the person has a strong Iman, the person would not be taking nude pictures of himself or herself and put it on the Net ...sometimes its about values, and values is like from upbringing, from school...* (Respondent RESP05, 18 June, 2009, 12:00pm)

> *As we are aware that not everything can be regulated by law. So we actually, if we, by including the right value to our children, we can actually, we would like more self-regulation, meaning people are bound by own moral values, because they are exposed to so many unhealthy things...* (Respondent RESP02, 7 May 2009, 2:30pm)

This matter is even mentioned by the then Minister of Energy, Water and Communications, which ministry was previously responsible for the CMA: “I'm sure you will agree that self-discipline is better than regulatory intervention” (The Star, 25 October 2004).

These issues of self-restraint and self-discipline are closely related to what has been described in Chapter 3 regarding the values in the communication process. The

'unhealthy things' and activities that are widespread online as mentioned by the respondents are manifestation of the lack of values in communicating online. By referring to the value of freedom in communicating, one needs to understand that the freedom is not absolute and must take into consideration some form of self-restraint so as not to proliferate vice online. Similarly the value of truthfulness needs to be advocated as a guide for self-discipline. This is to ensure the integrity of the online communication process in order to safeguard the online environment from being a place for lies, rumours and half-truths, as can be observed at present.

The issue of self-regulation by the practitioners and developers is also highlighted by the respondents. Such measures are already in place. For example respondents referred to the Communications and Multimedia Content Forum (CMCF), a body established under provision of the CMA with representation from the developers and users of the communications and multimedia industry, that have came out with the Malaysian Communications and Multimedia Content Code in 2004 which in essence recommends "guidelines for a responsible approach toward the provision of content and outline procedures on self regulation that will provide the platform for creativity, innovation and healthy growth of a fast changing industry" (p.4). As stated in Sections 98, 99 and 100 of the Communications and Multimedia Act 1998, compliance to the code is voluntary and can become a defence against any prosecution or action taken against the complying party on matters dealt by the code. However, a party may be directed by the government to comply with the code as a condition related to licensing and can be fined up to two hundred thousand Malaysian Ringgit for not complying to the code.

It is interesting to point out that the code also "seeks to identify what is regarded as offensive and objectionable while spelling out the obligations of content providers

within the context of social values in this country" (p. 4). Part 2 of the code which provides guidelines for content, covering among others content that are indecent, obscene, violent, menacing, false, bad language, as well as content for children and people with special needs, elaborates on this. In Section 1.3, it states : "The standards by which content is measured, given the requirements, will be viewed in the context of the country's social, religious, political and educational attitudes and observances, as well as the need to accommodate global diversity in a borderless world". Here, context is clearly mentioned in relation to values, similar with what has been discussed in the previous chapters. Therefore, creating an Islamic context with its universal character would provide avenues for defining what is acceptable and objectionable.

In addition, some other points mentioned in the previous chapters can be positioned as guidance for the code. Obligation of the content developers can be related to the the nature of responsibility as described in the Islamic shaping of technology. The developers are responsible not to create content that is destructive to the society in terms of values. Guidelines mentioned in Part 2 of the code can be interpreted in relation to the *āyāt* of the *Qurān* in developing information content, whereby the content should promote positive values that bring one closer to realise the nature of his creation in relation to God. Similarly, these guidelines can be guided by the *Sharī'ah* in determining what is allowed and what is prohibited. All this can be in support of the guidelines in the code, especially when certain value 'exceptions' are provided, for example Section 2.1 allows sex scenes and nudity to be shown with the permission of the Censorship Board. Nevertheless, parts of the code can be seen as another existing avenue for incorporating Islamic values in addition to the selected policy objectives of the CMA as discussed earlier.

Related to this aspect of self regulation and self discipline are the respondents' mention of Muslim ICT practitioners should possess an inner connection to Islam when practicing ICT. This relates to the earlier statement from Al-Qaradhawi on the role of belief in God and conviction towards religion in maintaining good behaviour. Just like other aspects of life, practising ICT is done with a purpose that relates back to man's role on earth as the *khalīfah* in developing and prospering this world. A respondent, when describing her tasks and responsibilities at the department that she leads, mentions:

> *Personally, myself personally, when I came here, I was thinking, how do I do this, we are from IT background, this is managerial, but to me, I've instilled into my people, there is a reason why we are here, it could be another person, but Allah has placed you here, because there is something that Allah wants to give to you, the opportunity for us to help our people...* (Respondent RESP04, 7 May 2009, 4:00pm)

This sentiment can be nurtured when viewing ICT not as a 'dead' element, but as something that carries certain meanings , as elaborated by one respondent on his view of ICT:

> *...a tool which is a strategic tool that can make a significant, a very significant difference,a very significant impact for the individual and society. This is something that, if you look at ICT,as a big gift from Allah...Allah is one, I'm trying to understand the concept of Allah, Tawḥīd...Allah can do a lot of 'work' at one time...so many things, millions of millions of millions of millions of things at ont time, and this is when I try to relate to the computer...the small computer can do millions and millions of things at one time, so what more is Allah. So I'm trying to see that from that perspective, that will help people to look into the*

> *greatness of Allah subhanahu wata'ala, if people like us can create such a chip, what is Allah, if we can create such a chip, at one time we create and we destroy it, what is Allah. So this itself, I must try to relate to the greatness of Allah subhanahu wata'ala, that Allah show His greatness through the things the He create, to me that computer chip is one of it ...* (Respondent RESP12, 12 June 2009, 4:35pm)

For this point, what is mentioned by the respondents places ICT practices as a sign of the powers and greatness of Allah, bringing man back to the realisation of his role as Allah's servant and *khalīfah*. This relates back to the previous discussion on *āyāt* (signs) mentioned in the *Qurān* that points back to Allah. The remembrance of Allah is definitely a way for Muslims to have self-control and maintain proper values when practicing ICT. This is even more important in dealing with certain situations like the non-censorship of the Internet by the authorities despite the possibility of committing an offense and being prosecuted by the law. Thus, Islamic values act as a line of protection against these offenses and sins.

6.4.5 Limitation of Fieldwork Study

Some limitations of the fieldwork study can be mentioned. The study was conducted to gain an understanding on practical and 'on the ground' issues concerning the incorporation of Islamic values in ICT development in Malaysia from the perspective of the government officials. The government officials were interviewed and their responses analysed in effort to identify those issues. The issues were identified as they emerged during the process of investigation and analysis. This identification is based on the researcher's own qualitative judgement. This can become a limitation for this fieldwork

study. However, clarifications from the respondents were sought after the findings were produced as measures to overcome this matter.

Another matter that can be considered a limitation of this fieldwork study is the number of respondents. Even though the researcher did manage to interview the targeted number of respondents, it could have been increased if the problem of getting cooperation from the agencies could be overcome. Therefore, the volume of data for analysis could be increased. This is a common situation faced when applying the interview method for data collection. Nevertheless, eventually the number of respondents did meet the targeted number which is deemed appropriate for this fieldwork study as mentioned earlier with reference to the literature. Despite the limitations, the findings to a certain extent reflect the themes that need to addressed by the parties responsible when discussing the incorporation of Islamic values in ICT development in Malaysia.

6.5 Conclusion

This chapter provided an overview of ICT development and Islamic development initiatives in Malaysia. This creates a scenario for understanding the nature of the fieldwork study conducted that seeks out the perspectives of Malaysian government ICT officials on issues concerning the incorporation of Islamic values in ICT development. The themes identified in the fieldwork study summarizes the key issues identified by the respondents as important in looking at incorporating Islamic values in ICT development in Malaysia. In addition to the NITA, some parts of the CMA policy objectives and the Communications and Multimedia Content Code were also highlighted as available avenues for the incorporation of Islamic values. As people involved in the programmes and policies, the respondents provide their first-hand view

which gives an 'on-the-ground' understanding to the topic studied. This understanding, together with other points from the previous chapters are brought together for a concluding discussion in the final chapter.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This final chapter begins by providing an overall summary of the study. Then, based on the initial framework and discussions from the previous chapters, a proposed framework that describes the incorporation of Islamic values in ICT development activities is presented. An example of how the framework can be used in areas of ICT development based on the findings from the fieldwork study is given. A generic version of the framework is also provided. This is followed by a description on the contributions of this study. Recommendations for future research building upon this study in areas related to Islam and ICT are given towards the end. Finally the chapter ends this study with concluding remarks.

7.2 Summary of Thesis

This study looks into forming an understanding of the incorporation of Islamic values in ICT development activities. In addition, this study also seeks to identify the key issues relevant to the incorporation of Islamic values in the Malaysian context of ICT development. Chapter 1 introduces this study by providing an overview of key elements and definition of terms related to this study, as well as outlining the purposes and significance of this study.

Chapter 2 presents the fundamental Islamic principles and concepts that are related to Islamic values for ICT. *Tawḥīd*, *Sharī'ah*, its *Maqāṣid* and values, and *Niyyah* are presented as the basis and guidance for Islamic values in ICT development activities. The relation between these principles and ICT development is illustrated in an initial

framework that depicts the flow of values from the Islamic principles to the fundamental human activities of ICT development.

The fundamental activities of ICT development were investigated in the chapters that follow. Chapter 3 establishes human communication as a process carried out through various means including ICT. The Islamic perspective on communication presents issues that relates to Islamic communication, involving the nature and purpose of communication in Islam, importance of communication technology, the nature of the source and receiver as well as the values related to them. *Niyyah* is presented as an important concept in guiding the human communication process. Having the proper *Niyyah* as guided by the Islamic principles by the active party in the communication process, be it the sender or the receiver, is the outset of Islamic communication in ICT. It brings about the achievement of Islamic communication aims and the practice of Islamic values in the communication process.

Chapter 4 subsequently looks into the position of context in the relation with meaning and values for information according to western perspectives. The social context would influence the values that exist which in turn would influence the meaning of information. Likewise, meaningful information form values which would then affect the society. Therefore a two way relation is seen. On the other hand, in Islam values ultimately comes from Allah which reaches man in the form of the *Sharī'ah*. This can be referred to the sources of Islam, especially the revelation (*Qurān* and *Sunnah*) as the guidance for mankind. From here the values that exist in the society would provide meaning to information created. Form here, the meaningful information would influence back the social context and a cycle that preserves the value can be seen. In relation to this, *āyāt* (signs) mentioned in the *Qurān* are examined and referred to as

describing the context as well as guiding the development of informational content for ICT. In this sense, the informational content should establish the characteristics of people who can understand the meaning conveyed in the *āyāt*. It should also invoke and invite people towards action, thought and belief that brings about the understanding of the meaning in the *āyāt*.

The nature of the relation between technology and humans and the issue of shaping technology and ICT is discussed in Chapter 5. Review on the present perspectives on the effect of technology on man, technological determinism and shaping of technology can be summarised in the the model by Edge (1995) that integrates the 'shaping' and 'effects' aspects of technology development. The model highlights society as the party that shapes technology as well as being affected by it. Therefore, the relationship between technology and society is reciprocal and interactive, portraying a balanced view on the relation between technology and humans. This situation is similar to ICT as a form of technology, as mentioned by Kling (1999, 2003), Bell et.al. (2004) and Fuchs (2008). As mentioned by Fuchs, humans in society shape ICTs. In the shaping process, ICTs affect the society by enabling and constraining human cognition, communication and cooperation. A mutual shaping relationship between society and ICT is therefore evident.

The meaning and purpose of technology being developed may in turn be affected and changed because of the already existing technology involved. Likewise, technology can also create social and cultural contexts and subsequently convey meanings similar or different to the ones that already exist. Again a bidirectional relationship can be seen. Therefore, the important role of man in providing meaning to technology being developed which can later influence society and culture is obvious. In Islam, the source

of this meaning is indeed coming from God and the guidance He has given to man. With a multifunctional and multifaceted technology like ICT, more opportunities are present for Islam to play its role in shaping the technology. In addition, the information and communication aspects of ICT are also avenues for incorporating Islamic principles and values as discussed in the previous chapters.

Chapter 6 presents a qualitative fieldwork study conducted to garner the views of Malaysian ICT government officials on the incorporation of Islamic values in ICT development policies and programmes in Malaysia. This is done on the backdrop of Malaysia being both Muslim country with initiatives to incorporate Islam in development, as well as the advance position of ICT initiatives undertaken by the government. Fourteen respondents were purposefully sampled for this study. They consisted of eight ICT officials from agencies having a more general and comprehensive scope affecting the direction and issues of ICT development in Malaysia. In addition to this, six academicians that have experience in providing consultation at various levels of planning and formulation of ICT development programmes to government agencies, as well as experience in conducting research on Malaysian ICT development. Information was collected through interviews to provide qualitative depth to the information collected. From the analysis conducted, three themes were identified. First is the universality of Islamic values that promotes positive and good values common in all societies. This is particularly significant for a multicultural and multi-religious society like Malaysia. Second is the position and role of policies in incorporating values in ICT development. This relates to the role played by the Islamic agencies as well as the leadership of the country in connecting the development initiatives with values. Leadership also has important role in the maintenance of the values, which is the third theme. In addition, education, laws, self-

regulation and an inner spiritual awareness towards Islam are also mentioned as instrumental in maintaining values. These themes indicate the kind of issues that needs to be taken into consideration in order for Islamic values to be incorporated in Malaysian ICT development initiatives.

7.3 A Proposed Framework for Islamic Values in ICT Development

The major question in which this study wishes to address is how can the fundamentals of ICT be related to the fundamentals of Islam that will eventually form a perspective that can be a basis for understanding the incorporation of Islamic values in ICT. Specifically, the purpose of this study is to develop an understanding on the incorporation of Islamic values in ICT development, and their related issues in the Malaysian ICT development context as an example. This study approaches ICT through the activities of communication process, information content creation, and technology shaping that are seen to represent the human involvement in ICT. In the effort to develop such an understanding, the following objectives were identified:

1. to examine current perspectives on the communication process and propose opportunities for introducing Islamic values for communication in ICT
2. to investigate current perspectives on the concept of information and their relation to the concept of *āyat* (sign) in the *Qurān* as a way for establishing Islamic values for information content in ICT
3. to examine current perspectives on the shaping of technology and propose an Islamic perspective in shaping technology and ICT
4. to identify the issues related to Islamic values for Malaysian ICT development through the views of the people involved in ICT development in Malaysia

For this, the initial proposed framework in Chapter 2 is revisited:

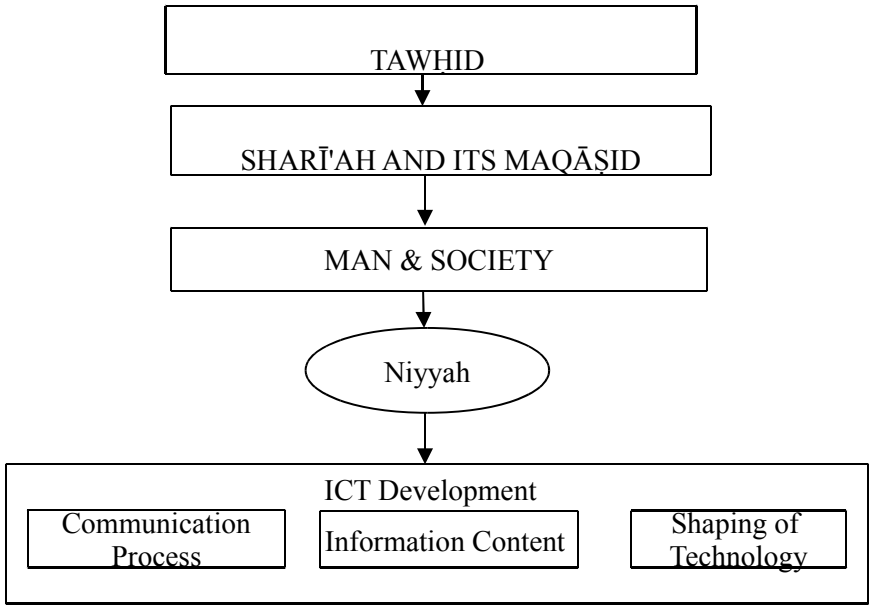

Figure 7.1

Initial Framework for Islamic Values in ICT Development Revisited

As mentioned in Chapter 2, the values are depicted as flowing from *Tawḥīd* to the *Sharī'ah* and manifested in the *Maqāṣid al-Sharī'ah*. Initiated by the internal process of *niyyah*, the values are operationalised by man in ICT development in the form of the *al-ḥukm al-shar'ī*. This involves the fundamental human involvement in ICT, i.e. the communication process, information content creation, and technology shaping.

With regards to the first objective of this study, the current perspectives examined establishes communication as a process. Present works on Islamic communication emphasises on conveying the Islamic message through various means. In relation to this, what can be said is the communication process in ICT must have the *niyyah* to achieve the aims in Islamic communication based on *Tawḥīd*, *Sharī'ah* and the *Maqāṣid*, as well as for *da'wah.* Achieving the aims is done with the values of truthfulness and guided freedom.

For the second objective, the current perspectives on information looks at the position of context in the relation with meaning and values for information. Since signs are the beginnings of information, lessons learned for the *āyāt* (signs) mentioned in the *Qurān* provide direction for the development of informational content for ICT. Muslim content developers should have the *niyyah* to instill the Islamic values and meaning into the informational content developed for ICT applications. The *āyāt* give guidance to them to develop informational content, whereby the information should contribute to the incorporation of Islamic values in the social context, establish the characteristics of people who can understand the meaning in the *āyāt* and invoke and invite people towards action, thought and belief that brings about the understanding of the meaning in the *āyāt*.

Referring to the third objective of this study, the current perspective on technology realises the importance of man in giving meaning to and shaping technology. Therefore an approach for an Islamic shaping of technology is proposed. Islamic values and meaning in the society would have influence in shaping the technology. Technology is developed with considering the values based on *Tawḥīd* and guided by the *Maqāṣid al-Sharī'ah*.. There must be responsibility in developing technology: in terms of using the elements/creations and in terms of the kind of technology developed. Muslims designers should establish the proper *niyyah* to inculcate the Islamic values through their technological output. This technology will then affect back the society. Basically technology should make man become closer and remember God. Hopefully with a such nature of ICT developed with Islamic values, ICT would be able to act as a vehicle in inculcating the values back into society, This is as opposed to ICT being a tool in spreading vice and destruction.

Based on the discussions in the previous chapters, a two-way relationship is identified that characterises the flow of influence between man and ICT. Therefore, the flow of value at this stage would follow the same two-way direction, whereby man and society in general would operationalise the values in ICT development. On the other hand, these values in ICT development would have influence on man and the society. Thus, the revised framework for the incorporation of Islamic values in ICT development is shown here:

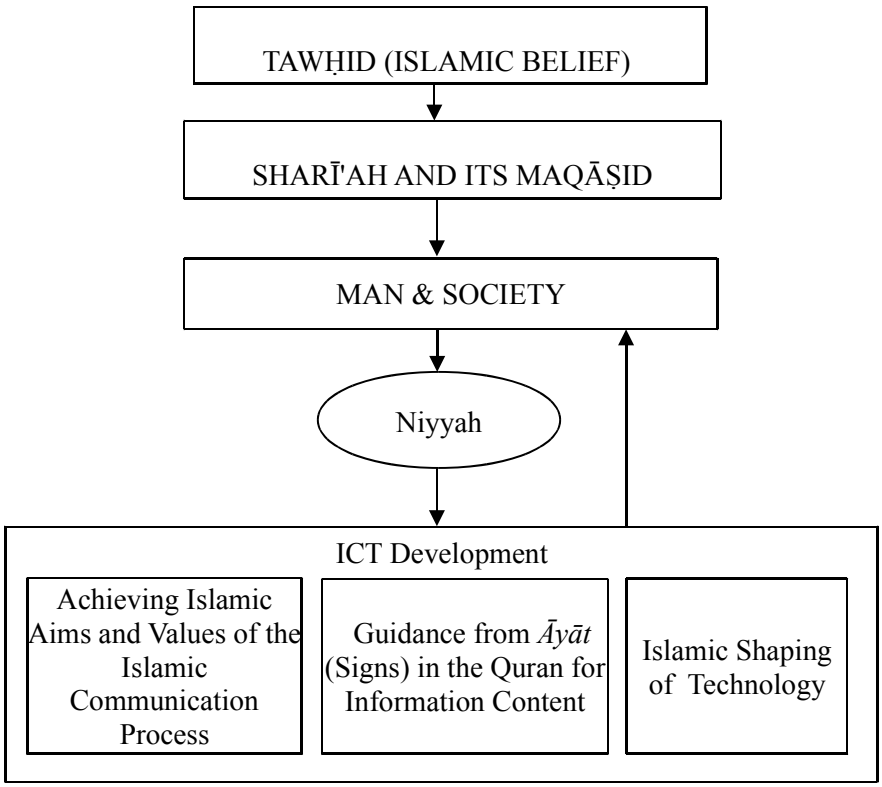

Figure 7.2

Revised Framework for Islamic Values in ICT Development

For the fourth objective, three issues are identified based on the views of the the selected government officials with regards to incorporating Islamic values in Malaysian ICT development. They are the universality of Islamic values, position and role of policies in incorporating values and maintenance of the values. The findings from the

qualitative fieldwork conducted in this study provides an example of how this framework can be used for studies in Islamic values for ICT. The three themes identified in the study are issues that are identified within the context of Malaysian ICT development as the chosen example, in light of Islamic principles and the three aspects of ICT development. The framework for the fieldwork study is given as follows:

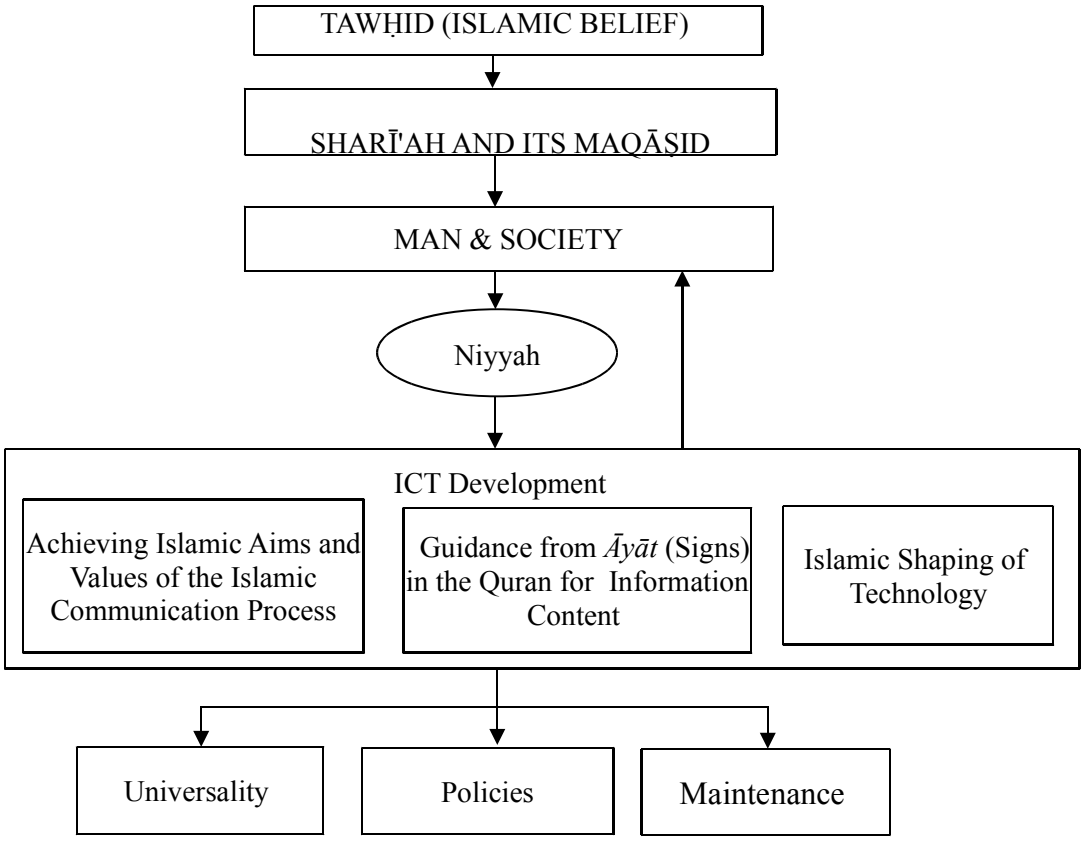

Figure 7.3

Framework for Islamic Values in Malaysian ICT Development

Similarly, the proposed framework can be used for guiding further research on Islamic values for ICT related issues. Specific domains of practice like privacy, intellectual property, e-commerce and others can be chosen for further studies. Sub-issues of each domain, regardless of the number, can be identified either from literature or fieldwork study and included as areas that requires detail discussion from the Islamic perspective

by positioning them within the proposed framework. Therefore the proposed framework in its generic version is as follows :

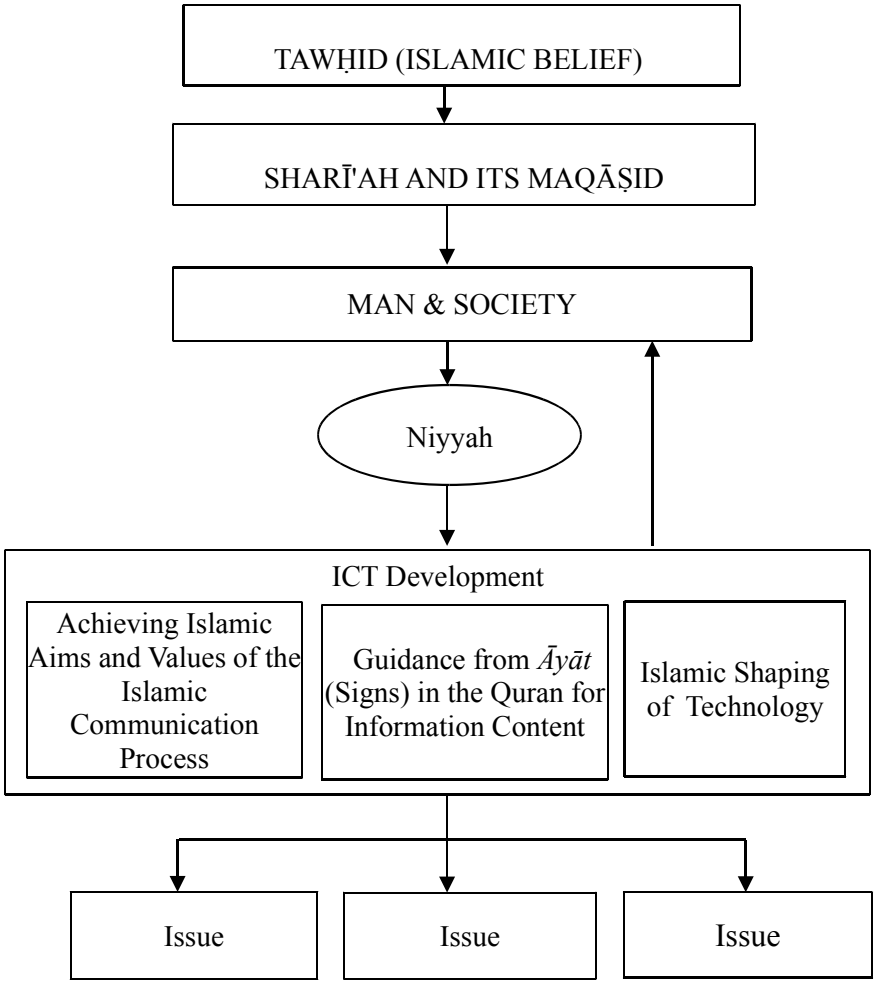

Figure 7.4

Generic Framework for Islamic Values in ICT

7.4 Contribution of the Study

Points of discussions in this study are summarised here as contributions of this study. Reiterating from what was mentioned in the first chapter, this study contributes to the clarification of concepts that arise in the context of the relation of Islam and ICT through an approach grounded in a multitude of other theories and concepts that proposes avenues for practising Islamic values in ICT development. This point embarks from what Fuchs (2008) mentions as a theoretical goal in the study ICT and society,

modified to suit the nature of this study of ICT and Islam. The current study provides a conceptualisation of the incorporation of Islamic values in ICT development out of the literature on values for science and technology development, communication and information, Islamic values in science, technology and ICT, as well as from fundamental principles in Islam. This conceptualisation is depicted in the suggested framework.

The discussions within this study provides some perspectives on the incorporation of Islamic values in the fundamental human activities of ICT development. This, apart from framing a big picture for incorporating Islamic values in ICT, adds to the existing body of literature discussing Islamic perspectives for the many ICT related issues. *Tawḥīd*, *Sharī'ah*, its *Maqāṣid* and values as well as *niyyah* are positioned as Islamic principles and concepts for reference in ICT development activities. Aspects related to the communication process, information content creation and technology shaping are highlighted to relate Islamic discussion with existing perspectives. The proposed framework then acts as a guide for professionals as well as users in their activities of ICT development. These discussions, if not more, to the least addresses the concerns on having an Islamic understanding for science and technology development raised in Chapter 1 by Manzoor (1993) and Tengku Mohd Azzman Shariffadeen (1998) within the context of ICT development activities as well as the context of Malaysia. According to Mohd Noor Deris (1995), preservation of principles like the *Sharī'ah* and its *Maqāṣid* are the basis for inculcating Islamic values in Malaysia.

The fieldwork conducted, albeit its rather limited nature, highlights the issues deemed significant in the eyes of Malaysia ICT officials with regards to Islamic values for ICT development. These issues reaffirm what has been mentioned by others. For example,

Aidit (1990) also highlights the importance for universality in values to come out with a paradigmatic solution for development that is universally accepted by all parties. This universality of values is evident in the Islamic paradigm. In this respect, this research would be able to draw the attention of policymakers interested in Islamic values to the issues that can be addressed and need further investigation. This study also contributes the Malaysian context to the current literature on Islamic values in ICT which can also be referred to by other Muslim countries and societies.

7.5 Recommendations for Future Research and Conclusion

The present study can be treated as an initiative to form an understanding for incorporating Islamic values in ICT. This understanding is seen as a foundation and beginning for further research on Islamic values and ICT.

As mentioned previously, it is beyond the scope of this study to look into the many detailed domains and issues related to ICT development. Rather this study focuses on the fundamental human involvement in ICT, i.e. the communication process, information content creation, and technology shaping. However, in suggesting for further research, issues like online privacy, data protection, intellectual property, cybersecurity, e-commerce transactions, e-business management, online learning, artificial intelligence and many others can be positioned within the suggested framework for further in-depth study. Sub-issues of each domain can be identified either from literature or fieldwork study which can then be further studied in detail to form an understanding for incorporating Islamic values within that particular domain. The generic framework for such a study is suggested in the previous section.

With regards to the fieldwork study carried out, there is still aspects that can be further developed. The themes identified can be further looked into with regards to the details of each theme. For example, concerning the maintenance of values in ICT development activities, the issue of education was mentioned as an important aspect. This aspect can be further studied within the context of maintaining values in ICT development activities. The framework for a study of this nature has been suggested in the previous section.

In addition to the above suggestion, future studies can expand on what has been done which can go beyond and overcome the limitation of the fieldwork study by having more resources, e.g. with more researchers involved and expanding the scope of the study. For example, a more in-depth study can be conducted to include content analysis of relevant documents on ICT development policies and programmes implemented by the respective agencies. This would complement this study that used the interview method. Another suggestion for expanding this study is to include more kinds of respondents. This includes officials and agencies which could not be accessed within this study due to limitation of time of the doctoral research. Agencies involved in specific domains of ICT development can also be considered. Agencies in education, finance, healthcare, agriculture and others can be studied to investigate the issues of Islamic values in ICT development within that particular domain and addressing specific matters of concern.

Finally, to conclude this study, attention is drawn to the verses 38:27-29 from the *Qurān*. Several lessons can be understood from these verses in light of this study. ICT professionals should be reminded that they have a purpose to fulfil as God's creations, and that they should be aware of and understand this purpose. For this, first and

foremost they should have belief in God. They should then act with righteousness and prevent evils and mischief on earth, either committed by them or prevent others from doing so. This is achieved with the technology that they develop guided by what God have given to them in the form of His words, and in extension the signs He has shown for them to contemplate. Eventually, they, as well as others affected by the technology developed by them, are hoped to become people who are able to understand and receive admonition from God's guidance and become a society blessed by Him. This in essence summarises what this study strives for.