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The Ethics of Information and Communication Technology: An Islamic Overview

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ABSTRACT

The paper examines the concept of ethics in different perspectives, ranging from Islamic, western and ICT respectively. It supports each of the discussion with scholars' ideas and ultimately evidence from the Holy Quran and Hadith of prophet Mohammad (S.A.W). The paper asserts that ethics in ICT is view in different aspects. These aspects were extensively dwelled with supportive verses from the Holy Quran and Hadith of the Prophet Mohammad (S.A.S). The paper concludes by calling ICT developers to be conscious on the sensitivity of their work in promoting the entire Muslims lives.

Keywords-*ethics, ICT, Islam, Islamic point of view, ICT ethics, information security, privacy.*

I. INTRODUCTION

Nowadays, the number of Muslim societies is increasing significantly together with that of the users of ICT sectors are increasing as well. And the greatest innovations caused by Information and Communication Technology is that people around the world communicate regularly sharing their information, ideas, hopes and aspirations with ease and faster. This globalize village is a rich community from all aspects including personal data; comprising people from different faiths, cultures, nations, ethnics and origins. The question is that why all these things are important for ICT professionals? The short answer for this question is that ICT professionals must know that there are many ethics and morals for them during their work life.

Ethic is the principle of conduct governing an individual or group. Ethic is the principle of your contribution in the society as you are ICT professional. Based on that ethics analyzes society's moral standards to determine how and whether they are applicable to actual situations and issues. Ethics develops moral standards that people consider reasonable to hold and acceptable to apply to human choices.

The main propose of this paper is that to introduce the conception of ethics from Islamic and western perspective, then some of computer and ICT ethics supported by some of our holy Quran verses as well as Hadiths.

II. THE CONCEPT OF AN ETHICS

The word "ethic" comes from the Greek word "ethos" meaning habit or custom. And the word "morals" comes from the Latin moralis meaning mores or customs. Ethics are roles of behavior based on ideas about what is morally good and bad [1].

A. The concept of ethics from Islamic point of view:

In our holy Quran Allah (S.W.T) mentioned the word of "*Khuluq*" in two verses which read:

1. (وَإِنَّكَ لَعَلَى خُلُقٍ عَظِيم) Q68:4 Allah (S.W.T) said to Prophet Mohammad (S.A.W) that and verily, you are on an exalted character.

2. (إِنْ هَذَا إِلاَّ خُلُقُ الأَوَّلِينَ) Q26:137 Allah (S.W.T) said this is no other than "*Khuluq*" of the ancients.

Al-Qurtubi interprets the phrase *Kuluq al-awaliyyin* to mean their ancient customs and to mean religion, character, ideology or doctrine. Al-Ghazali speculated that morality, unlike other parts of philosophy, is not the invention of Greek philosophers but rather, philosophers borrowed it from revealed religions [1].

If morality is identified with religion, then it will be identical to the Islamic worldview, al-Qurtubi has mentioned that morality means customs. This may be the case with regard to certain communities where customary morality and not reflective morality prevails. On the other hand, a behavior may appropriately be described as a custom, such as eating with hand or with a knife and fork; this is not moral behavior. Morality is usually considered to be more important than customs and moral principles are supposed to override customs. It must also be mentioned that morality is related to law but different from it.

Moreover, the fact that prophet Mohammad (S.A.W) said that the purpose of him being messenger was to perfect the magnificence of "*Akklaq*" indicates that moral values and ethics are very much central to the Muslim life. The Hadith is that "I have been sent to perfect good characters" " إنما بعثت لأتمم مكارم الأخلاق" Reported in Sahih Al-Bukari. These values must be incorporated at every single point and dimensions of ICT. Information and communication technology must not only

consist of the hardware and software, but also the Peopleware which is Heartware [2].

Ethics means distinguishing between moral and non-moral behavior. We are told that moral judgments are sentences in which words such as good or bad, and ought to occur. The problem with this definition is that these words may occur in non-moral statements, such as "This is a good car" or "This Bridge ought to be built from such and such material". Sometimes the context in which the statement is used shows whether the statement is moral or non-moral. A second criterion of distinguishing what is moral from what is non-moral is determining whether a statement is intended to be prescriptive and action guided. As an illustration, statements: you should respect your parents; fulfill your promise. But the property of being prescriptive is common among ethics, religion and law. The third characteristic of moral judgment is that moral judgment is considered to be overriding, and more importantly, has priority over other judgments such as aesthetic, legal, and religious judgments. However, this is not always the case, for religious prescriptions may override moral prescriptions.

B. The concept of ethics from western point of view

Ethics is defined by Webster`s third international unabridged Dictionary of the English language as "the discipline dealing with what is good and bad, right and wrong, with moral duty and obligation." Ethics is a part of philosophy, not science. As (John Horg 2013), noted science journalist and author, says: "Science tells us that there are limits to our knowledge. Relativity theory prohibits travel or communication faster than lights. Quantum mechanics and chaos theory constrain our predictive ability. Evolutionary biology keeps reminding us that we are animals, designed by natural selection, not for discovering deep truths of nature, but for breeding. The most important barrier to future progress in science – and especially pure science – is its past success. On the other hand, philosophy does not place limitations on our knowledge. It deals with question of quality, not quantity. It is not so much concerned with measuring amounts of things as it is with understanding ideas and concepts.

C. The concept of ethics in ICT

The approach taken here is practical between ICT professional and human or people. Computer and information technology ethics is an emerging field and continues to define new theories exploring our moral and human nature in the context of changing technologies [3].

III. SOME ASPECTS OF ETHICS IN ICT

• Privacy

Privacy is the ability of an individuals or group to seclude themselves or inform about themselves and there by revel themselves selectively [3].

Privacy from Islamic point of view

In order to respect the privacy of each Muslim society or community ICT expert must remind themselves about this verse

of holy Quran, Allah (S.W.T) said in holy Quran that: (يَاأَيُّهَا الَّذِينَ ءامَنُواْ لاَ تَدْخُلُواْ بُيُوتاً غَيْرَ بُيُوتِكُمْ حَتَّى تَسْتَأْنِسُواْ وَتُسَلِّمُواْ عَلَى أَهْلِهَا ذَلِكُمْ خَيْرٌ لَّكُمْ لَعَلَّكُمْ تَذَكَّرُونَ) Q24:27 O you who believe! Enter not houses other than your own, until you have asked permission and greeted those in them; that is better for you, in order that you may remember. Also in another verse Allah (S.W.T) said that (يَاأَيُّهَا الَّذِينَ ءامَنُواْ اجْتَنِبُواْ كَثِيراً مِّنَ الظَّنِّ إِنَّ بَعْضَ الظَّنِّ إِثْمٌ وَلاَ تَجَسَّسُواْ وَلاَ يَغْتَب بَّعْضُكُم بَعْضاً أَيُحِبُّ أَحَدُكُمْ أَن يَأْكُلَ لَحْمَ أَخِيهِ مَيْتاً فَكَرِهْتُمُوهُ وَاتَّقُواْ اللَّهَ إِنَّ اللَّهَ تَوَّابٌ رَّحِيمٌ) Q49:12 O you who believe! Avoid much suspicion; indeed some suspicion is sin. And spy not, neither backbite one another. Would one of you like to eat the flesh of his dead brother you would hate it. And have "Taqwa" of Allah (S.W.T). Verily, Allah (S.W.T) is the One Who forgives and accepts repentance, Most Merciful.

The prophet Mohammad (S.A.W) said that: "Beware of suspicion, for suspicion is the worst of false tales. and do not look for the others' faults, and do not do spying on one another, and do not practice "Najsh", and do not be jealous of one another and do not hate one another, and do not desert (stop talking to) one another. And O, Allah's worshipers! Be brothers!" Reported in Sahih AlBukari. The above verses and Hadith are about the protection of privacy and our Islamic religion is very strict in this area.

• Digital intellectual property

In this sector we turn our attention to a set of issues that arise around the ownership of software. When software is protected by copyright, trade secrecy, or patent law, it becomes a form of intellectual property [3].

Digital Intellectual property from Islamic point of view

ICT experts and computer users have to be careful with issue of digital intellectual property as stress by the holy Quran. Allah (S.W.T) said in holy Quran (وَتَعَاوَنُواْ عَلَى الْبِرِّ وَالتَّقْوَى وَلاَ تَعَاوَنُواْ عَلَى الإِثْمِ وَالْعُدْوَانِ وَاتَّقُواْ اللَّهَ إِنَّ اللَّهَ شَدِيدُ الْعِقَابِ) Q5:2 Help you one another in Al-Birr and At-Taqwa, but do not help one another in sin and transgression. And have "Taqwa" of Allah (S.W.T). Verily, Allah (S.W.T) is severe in punishment.

And the Prophet Mohammad (S.A.W) mentioned in Hadith that "He who cheats belongs not to us; not a true Muslim" Reported in Sahih Muslim.

• Computer and Online crimes

This refers to criminal exploitation of the internet. Computer crime is the deliberate theft or criminal destructions of computerized data services and the computer abuse which is the using of computer for unethical purpose. Online crime is also a big and common issue around the world. However, the criminalization declaring certain forms of behavior illegal and imposing fines or jail terms for failure to comply.

Computer and online crimes from Islamic point of view

Islam as a religion frown at crimes the example can be trace to the Hadith of the prophet Mohammad (S.A.W) He said, "They are: (1) To join others in worship with Allah, (2) To be

undutiful to one's parents. (3) To kill a person (which Allah has forbidden to kill) (i.e. to commit the crime of murdering). (4) And to give a false witness. "Reported in Sahih Al-Bukari.

Also the Prophet Mohammad (S.A.W) said "Whenever a person is murdered unjustly, there is a share from the burden of the crime on the first son of Adam for he was the first to start the tradition of murdering" Reported in Sahih Al-Bukari. Online crime can lead to the death of bearer.

- **Hacking**

In the early days of computing, many of the pioneers in the field had a sense of the importance of the technological development that was underway and had distinctive ideas about how the internet should develop. Some early pioneers called themselves "Hackers" they meant by this was that they were computer enthusiasts. "Hacking" referred to the feats such enthusiasts were able to accomplish; they would spend hours figuring out how to do clever things with the new technology, things that had never been done before. Hackers make different attempts to penetrate information systems from usually outside the organization. There are several reports and numerous incidents of people who invade computer networks for personal thrills, criminal mischief, and for monetary gains [4].

Hacking from Islamic pint of view

Muslim scholars are against hacking as stated it in the holy Quran. Allah (S.W.T) said in holy Quran (وَلاَ تَعْتَدُواْ إِنَّ اللَّهَ لاَ يُحِبُّ الْمُعْتَدِينَ) Q2:192. Do not transgress not the limits; Truly, Allah likes not the transgressors. Also, Allah (S.W.T) said that

(وَلاَ تَجَسَّسُواْ وَلاَ يَغْتَب بَّعْضُكُم بَعْضاً) Q49:12 do not spy, neither backbite one another. Therefore, ICT expert should not be like that even computer users.

- **Information security**

Security in general is the quality or state of being secure, that is, to be free from danger (Merriam-Webster Dictionary). In a more operational sense, security is measure that is taken to guarantee the safety of a country, person, thing of value, etc. (Oxford Advanced Learners Dictionary). Schneier reckons that security is about "preventing adverse consequences from the intentional and unwarranted actions of others" [5].

Nevertheless, are all policies, guidelines, procedures and technical tools used to safeguard information technology, system from unauthorized access, alterations, theft and physical damage. As organization continues to store critical data on networks the problems of unauthorized penetration are also growing. The major threats to computer information can be intentional or unintentional. The unintentional are disaster ranging from fire or electrical failure, hardware malfunction, software errors, and user errors. Intentional disaster on security include computer crime, which is the illegal use of computer hardware, software or data result in monetary theft or destruction of valuable data or services and the other computer abuse that is using computer for unethical purpose [6]. Information security from Islamic point of view:

Regarding to information security in Islam, the Prophet Muhammad (peace be upon him) has been reported to have said that the believers are like a body, if one part of the body catches a fever, the whole body suffers. This Prophetic tradition, Sardar argued, inspires Muslims on the importance of the issue at hand. He asserts that if Muslims take the Muslim world to be a body, a holistic system, then one knows that every activity of such system requires an internal flow of information between the parts. In the human body system, this is exactly what the brain functions, that is, as a center of coordination between all organs by which the whole body can function well and properly. It was further reckoned that if the believers are to behave like a body, then the free flow of information is essential for the survival of this body. In other words, the notion of the Ummah does not make sense unless there is unrestrained communication; hence Muslims will behave as a coordinated body [10].

Also, an obvious history of *Dhul-Qarnayn* is a typical example of security from Islamic perspective. Allah (S.W.T) thought us how to guide ourselves from our enemies through this story. Allah (S.W.T) commands *Dhul-Qarnayn* to duct a wall and lit fire to it. As in the holy Quran, Allah (S.W.T) said that (ثُمَّ أَتْبَعَ سَبَباً حَتَّى إِذَا بَلَغَ بَيْنَ السَّدَّيْنِ وَجَدَ مِن دُونِهِمَا قَوْماً لاَّ يَكَادُونَ يَفْقَهُونَ قَوْلاً قَالُواْ يِذَا الْقَرْنَيْنِ إِنَّ يَأْجُوجَ وَمَأْجُوجَ مُفْسِدُونَ فِى الأَرْضِ فَهَلْ نَجْعَلُ لَكَ خَرْجاً عَلَى أن تَجْعَلَ بَيْنَنَا وَبَيْنَهُمْ سَدًّا قَالَ مَا مَكَّنِّى فِيهِ رَبِّى خَيْرٌ فَأَعِينُونِى بِقُوَّةٍ أَجْعَلْ بَيْنَكُمْ وَبَيْنَهُمْ رَدْمًا ءَاتُونِى زُبَرَ الْحَدِيدِ حَتَّى إِذَا سَاوَى بَيْنَ الصَّدَفَيْنِ قَالَ انفُخُواْ حَتَّى إِذَا جَعَلَهُ نَاراً قَالَ ءَاتُونِى أُفْرِغْ عَلَيْهِ قِطْراً) Q18:94

They said: "O Dhul-Qarnayn! Verily, Ya'juj and Ma'juj are doing great mischief in the land. Shall we then pay you a tribute in order that you might erect a barrier between us and them".

- **Espionage**

Apart from hacking and other computer crimes the vulnerabilities of contemporary systems open the opportunities for committing commercial espionage. It is the accessing of organization information with consent or approval from the organization using technology. It can be seen as spying of organization information [7].

Espionage from Islamic point of view:

Allah (S.W.T) said in Holy Quran that (وَلاَ تَجَسَّسُواْ وَلاَ يَغْتَب بَّعْضُكُم بَعْضاً) Q49:12 do not spy, neither backbite one another. Therefore, ICT expert should not be like that even computer users.

- **Information protection**

Information protection is important to effectively safe guard our information from unauthorized users. It requires some policies and guidelines to achieve this. Different methods, procedures, and policies can affect the overall activities of computerized information. According to information protection and control must ensure the following:

• The security and reliability of computer hardware.

• The security and reliability of the software.
• The security of the data files.
• Consistence and correct computer operation.
• Proper management of system development.

Table: General Control of Information System

Control	Examples
Hardware	Restrict access to machines , terminals and checking for equipment malfunction
Software	Require logs of operations, systems activities and restricting unauthorized users
Data Security	Using password, restricting access to terminal to limit access to data files
Operations	Establishing procedures for running computer jobs correctly, establishing back up, and recovery procedures for abnormal or disrupts process
Systems Development	Require management review and audit of each new information systems project or conformity
Management	Establishing formal written policies and procedures, segregating job functions to minimize frauds, error and providing supervision and accountability.

Information protection from Islamic point of view

Allah (S.W.T) said in holy Quran (يَاأَيُّهَا الَّذِينَ ءَامَنُواْ لاَ تَدْخُلُواْ بُيُوتاً غَيْرَ بُيُوتِكُمْ حَتَّى تَسْتَأْنِسُواْ وَتُسَلِّمُواْ عَلَى أَهْلِهَا ذَلِكُمْ خَيْرٌ لَّكُمْ لَعَلَّكُمْ تَذَكَّرُونَ - فَإِن لَّمْ تَجِدُواْ فِيهَآ أَحَداً فَلاَ تَدْخُلُوهَا حَتَّى يُؤْذَنَ لَكُمْ وَإِن قِيلَ لَكُمُ ارْجِعُواْ فَارْجِعُواْ هُوَ أَزْكَى لَكُمْ وَاللَّهُ بِمَا تَعْمَلُونَ عَلِيمٌ) Q24:27-28. The interpretation of this verse is that O you who believe! Enter not houses other than your own, until you have asked permission and greeted those in them; that is better for you, in order that you may remember. And if you find no one therein, still enter not until permission has been given. And if you are asked to go back, go back, for it is purer for you. And Allah is All-Knower of what you do.

E-government: Transparency, Accountability and Trust

E-governments consist of digital interactions between a government and citizen, government and business, government and employees and between government and government/agencies [8].

E-government: Transparency, Accountability and Trust from Islamic point of view

References [2] the idea of e-government in Islam was noticed due to the need of having transparency accountability and direct interaction. An evidence is seen in the holy Quran (وَإِذْ قَالَ رَبُّكَ لِلْمَلَـئِكَةِ إِنِّي جَاعِلٌ فِى الأَرْضِ خَلِيفَةً قَالُواْ أَتَجْعَلُ فِيهَا مَن يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ قَالَ إِنِّي أَعْلَمُ مَا لاَ تَعْلَمُونَ- وَعَلَّمَ ءَادَمَ الأَسْمَاءَ كُلَّهَا ثُمَّ عَرَضَهُمْ عَلَى الْمَلَئِكَةِ فَقَالَ أَنبِنُونِى بِأَسْمَاءِ هَؤُلآءِ إِن كُنتُمْ صَـدِقِينَ - قَالُواْ سُبْحَنَكَ لاَ عِلْمَ لَنَآ إِلاَّ مَا عَلَّمْتَنَآ إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ - قَالَ يَـاءَادَمُ أَنبِئْهُم بِأَسْمَآئِهِمْ فَلَمَّا أَنبَأَهُم بِأَسْمَآئِهِمْ قَالَ أَلَمْ أَقُل لَّكُمْ إِنِّي أَعْلَمُ غَيْبَ السَّمَـوَاتِ وَالأَرْضِ وَأَعْلَمُ مَا تُبْدُونَ وَمَا كُنتُمْ تَكْتُمُونَ) Q2:30-33

And (remember) when your Lord said to the angels: "Verily, I am going to place (mankind) generations after generations on earth." They said: "Will You place therein those who will make mischief therein and shed blood, - while we glorify You with praises and thanks and sanctify You." He (Allah) said: "I know that which you do not know."And He taught Adam all the names (of everything), then He showed them to the angels and said, "Tell Me the names of these if you are truthful.") (32. They (angels) said: "Glory is to You, we have no knowledge except what you have taught us. Verily, You are the Knower, the Wise.") (33. He said: "O Adam! Inform them of their names," and when he had informed them of their names, He said: "Did I not tell you that I know the Ghayb (unseen) in the heavens and the earth, and I know what you reveal and what you have been concealing")

The idea of transparency accountability was clearly stated in the Holy Quran where Allah (S.W.T) said (وَمَا خَلَقْتُ الْجِنَّ وَالإنسَ إِلاَّ لِيَعْبُدُونِ) Q51:56

And I created not the Jinn and mankind except that they should worship me (Alone).

Men are clearly guided by Allah (S.W.T) as mentioned in verse which is (كِتَبٌ أَنزَلْنَـهُ إِلَيْكَ مُبَـرَكٌ لِيَدَّبَّرُواْ ءَايَتِهِ وَلِيَتَذَكَّرَ أُوْلُو الأَّلْبَبِ) Q38:29

(This is) a Book which We have sent down to you, full of blessings, that they may ponder over its Verses, and that men of understanding may remember.

IV. CONCLUISON

Above all, despite diversity in religion, region, culture, ethics origin etc, yet ICT is capable of uniting everyone under one umbrella due to its significant in human existence. However, the ICT system developers must always bear in mind the Islamic ethics surrounding their work. The purpose and way in which they develop any ICT system must be in conformity with Islamic ethics. If this is beard in mine then they will have double benefits of their work; financially and spiritually.

REFERENCES

[1]. Hassan, A. (2010). Ethics from an Islamic perspective: Basic issues. *ICE*, 5.

[2]. Noordin, M. F. (2009). *Ict and Islam.* Malaysia: IIUM Press.

[3]. Barger, R. N. (2008). *Computer Ethics: a case study-based approach.* UK: Cambridge Universiy press.

[4]. Wikipedia. (2011, 3 28). Wikipedia . Retrieved 12 5, 2013, from Wikipedia : http://en.wikipedia.org/wiki/E-Government

[5]. Johnson, D. G. (2008). Computer ethics: analyzing
[6]. information technology. USA: President Press.

[7]. Zulhuda, S. (2010). Information Security in the Islamic Perspective: . IEEE, 7.

[8]. Kenneth C.Laudon, J. P. (1998). Information System and the Internet. Orlando: The Dryden Press.

[9]. Al-Bukary. (2010, 4 3). Sahih Al-bukary. Retrieved 10 12, 2013, from Sahih Al-bukary: http://www.sahih-bukhari.com/

[10]. Kather, I. (1999). Tafsser Ibin Kather. Madinah: Dar Al-Harameen.