Internet Ethics

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Abstract: Widespread availability of internet has created new ethical problems. These problems have opened expert discussions to solve internet ethical issues. This paper begins with a look into history of internet and continues with a discussion about the positive roles internet has played in many applications including facilitating group membership, formation of scientific associations, performing certain surgical operations, and the like. Final part of this paper reviews internet abuses and the new and unique ethical problems that they entail. The issues covered in this paper include software theft, copyright violation, privacy intrusion, computer hacking, and weblogging. This paper examines ethical dimensions of the underlying issues and concludes that internet training shall include discussions about internet ethics. **[Farzaneh Farahanipour. Internet Ethics.** Journal of American Science 2012;8(4):113-119]. (ISSN: 1545-1003). http://www.americanscience.org. 15

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Introduction

Information system ethics have attracted new attention in recent years. Information processing has extensively influenced political and social changes. These advancements have presented new and unique ethical problems in internet applications that need to be addressed.

Certain ethical and political concepts with given definitions and applications have been transformed by advancement of information technology. The concepts that have had the most impact are privacy, basic rights, and ethical responsibility.
- Are software hacking, unauthorized copying, computer fraud, and the like unethical and wrong?
- What are ethical responsibilities of computer professionals in respect to these issues?
- What policies should government pursue on these problems?
- Should individuals be free to express whatever they like in internet? Or, should there be restrictions?
- What roles should internet scholars and individuals sympatic to Islamic revolution and cultural play?

These questions have created new research opportunities on internet ethics. Internet ethics gained more importance as widespread computer technology made people gradually aware about problems and issues this powerful tool has created.

History of Internet

Internet is a spread out and limitless network. This large network is formed by a collection of smaller networks that are interconnected through active links among computer nodes. This network initially started by a project under US Defense Department. This project started in 1960s and continued until beginning of 1970s. The name of project was Arpa Net for Advanced Research Project Agency. The primary objective of Arpa Net was to establish a communication network for US Armed Forces. The intended purpose of this network was to supervise armed forces' operations and to take the necessary actions whenever intervention is required (Danet Bernda, 2011).

US Defense Department noticed that US Government had become dependent on its computer network. This dependency raised the question that what would happen if a nuclear attack damaged national computer network. With this question in mind, US Defense Department undertook the task of building a new network in such a way that if a part of network were to damage the rest would continue to function. What interconnects this huge network is a set of protocol called TCP/IP.

University computer systems gradually joined Arpa Net in order to exchange information on many projects across the United States. Computer systems in other countries also linked to this network.

In 1977, the name of network was changed from Arpa Net to Internet. Internet is the largest system that human has designed, engineered, and implemented.

History of Internet in Iran

The first computer connection to internet in Iran was by the computer system in Iran Center for Theoretical Physics Research. The internet connection was established in 1993 and this computer system is still one of active centers for providing internet services in Iran. Iran Center for Theoretical Physics Research is the authorized body for domain registration with .ir suffix. This suffix identifies Iranian domains on internet (Alizadeh, 1385).

Societies increasingly become dependent on communication technologies and information networks for education, communication, information handling, economic planning, market activities, and the like.

Internet is a top ranking information highway that is spread out globally as an important network. This twenty first century information highway has produced extensive cultural changes. Internet is a rich source of information - good or bad, ugly or beautiful, and ethical or non-ethical. The point is where difference societies draw the line between contrasting characterizations (Babayee, 2005).

Internet Evolution

Internet is now fifty years old. It has gone through an extraordinary evolution, deeply affecting social lives of many. Internet has utilized many advanced digital technologies and has challenged print industry and its culture. Internet has created new classes of social beings, has introduced new sets of cultural activities, and has revolutionized traditional social orientations and activities.

The speed of change in internet is so rapid that makes it difficult to review its impact. It is like taking a picture of a rapid moving train. The change in types of internet applications and the volume of interactions are in conflict with many established restrictions, values and norms. For example, wide spread usage of internet by children and adolescence challenges the traditional authority of their parents.

An important development in internet is the change from instrumental use to expressive use. This change of application has facilitated the creation of new generations of media, the extension of social interactions, emotional expression, and innovations.

In early 1980s, researchers believed that internet was cold, lacked identity, and was antisocial. This belief stemmed from the fact that it lacked capability for verbal communication for face-to-face contacts. Virtual domain not only relates to people and their activities, it also relates to information interchange.

The rapid changes and expansion of internet is confusing. These consecutive changes have introduced extensive problems to a certain group of researchers. The researchers who prefer generalization of their research findings conforming to natural sciences or researchers who study the effects of communication on social lives stand up against those researchers who have different views of this technology.

For example, Sherry Turkel regards computer as an extension of self or as the second self. She commented that: "internet users have a timelessly floating sensation. The magic of interaction with computer, even when it is solitary without human interaction, heightens the floating sensation".

Human scientist, Victor Turner, defined internet as "A domain that is different from normal life and abnormal life - it is, rather, a threshold domain". "This is a mid-domain without regulations and expectations that govern daily life. This is an undefined world with probabilities. This is a new domain without a cultural framework. It disguises personal identity at least in written form and reduces functional responsibilities (Gordon Graham, 1386)."

Information Ethics

Ethics is associated with many human activities including information and its related areas, i.e. information systems. Information access is a human right and only information systems and tools can fulfill this right. Information flow in a developing country is not limited merely to top-down - it includes any information that people need to perform their functions.

It is natural to have fears and worries about the onslaught of destructive and filthy information received through internet and the undermining effects they have on ethical and social principles. Societies have a certain information framework. Any information that crosses the established boundaries of this framework can endanger society's wellbeing and security.

In spite of the inherent positive aspects of this global network, its criminal abuse has endangered national security of many nations. The use of filtering and firewalls to block destructive and harmful information leaving only the select useful information is on the rise (Namazi, Mohammad Mehdi, 2005).

Internet is currently an environment with open information interchange where personal information is readily available to anyone interested without limits and through many options. What ethical systems should struggle to do in such an environment to challenge information and communication technology? Do we blame all problems on infrastructural changes or those who reveal and clarify them? Do we look for logical and correct solutions to enforce ethics?

Whenever a field is exposed to technology, it begins to function without control or restrains. Technology has introduced new capabilities for presentation of audio, visual, and textual information. Huge computer storage capacity has made it possible to store images, text, and other materials to be made available to users for different applications. Technology has increased the number of tools and mass production has made them available to many interested users (Babayee Rad, 2005).

Information systems and tools have applications such as entertainment, communication, education, socialization, social control, advertising, promotion, etc. They also have other effects resulting from violence, obscenity, abnormality, and the like that fit within concerns of ethical framework.

How can we define communication when we consider the widespread coverage information and communication technologies provide and the impacts they produce? The answer may lay in the fact that information means shaping knowledge for communication to someone else or to a large group of people. Information means covering the dimensions,

content, and form of knowledge with the intention to transmit and communicate.

Ethics are behavioral views and perspectives that are acceptable to a given society during a given period. Ethics is the ability to differentiate between good and evil. Ethics is defined in a western culture under responsibility as a set of procedures that define the order of actions. That is the reason why there is written and/or unwritten job descriptions for any professional activity.

Information ethics is not the same as reporters' ethics. Media ethics stand apart from individual responsibilities. The scope of ethics covers all established and acceptable norms that certain professional organizations can supervise their survival and continuity. The diversity of information channels and versatility of applicable indexes and scales produce difficulties in implementation of information ethics in its simple form and without considering issues attributed to content. Adaptation of a new technology always produce some unavoidable consequences. (Babayee Rad, 2005).

Knowledge Based Contacts

The primary objective of communication is establishing contact between two parties. Establishing a quality communication requires the development of rules that govern "knowledge to make a contact". A self-regulating communication may be formed based on these rules. This is a way to compensate for the lack of a central control.

A physical presence of parties is not important under the governing rules. Nor is a reliable cognitive process a requirement. Rules of conduct over network are normal and ethical systems, like some of the daily life rules. A collection of more or less fixed but unwritten rules dictates what is right. These rules stem from applications and activities (ibid).

Ethics and Islam

Ethics means internal drive (strong habit) that makes human perform tasks without any need for thinking. When an act is performed repeatedly, it becomes a habit influencing human spirit. Habits pervade the whole being and become internalized. Internalized habits are difficult drop. Mood is referred to a human condition when acting does not come easily, that is prior to an act becoming internalized and settling in (Naraghi, 1983).

Holy Quran commands that proper etiquette and spiritual purification are required conditions for salvation. On the other hand, unethical conducts are the source of human misery and wickedness. Quran states in Surah Shams versus 9 and 10 that those who attempt to purify their soul are saved and those who foul their soul are disappointed.

Prophets came to establish proper ethics, encourage spiritual purification, and develop virtuous people. They attempted to promote and strengthen ethical conducts through centuries. They trained believing followers and produced extraordinary results through their perseverance and struggle.

In view of Islam, ethics are built over faith. Faith matures under ethical conduct. Faith is the foundation of ethics. Ethics without faith has no meaning. Human self-actualization is not possible without faith. Anyone who is interested to reach his whole being should resort to holy ethics and attempt to reach God. Human cannot reach holy status without faith, religious beliefs, and closeness to God.

Positive Aspects of Internet
1- Basic Functions

Different applications of internet such as e-mail, group discussions, direct dialogue, or chat have created new opportunities for people to get to know each other and develop virtual friendship that may turn into real friendship. Unlike industrial revolution that caused separation of human beings, information revolution, with internet as the leading agent, acts as the connecting agent bringing societies closer to each other. Technology has positive results and affects. The influence of internet on human extends beyond personal dimensions. That is why in times of calamity and human misery internet becomes a tool for expression of feelings and sympathy.

2- Membership in Professional Groups

Internet provides facilities for registration of applicants in professional groups. Members of professional groups can receive messages and current information in their professional fields. Both side can watch their activities through internet if they have the necessary tools.

3- Performing Important Surgeries

Certain well-known medical centers perform surgical procedures with specialists in faraway locations anywhere in the world guiding and supervising surgery.

4- Video Conferencing

Video conferencing is obtaining a especial position in many countries as a technical advancement with constructive ethical property. Video conferencing provide facilities to experts around the world to setup discussion meetings on subjects of interest without physically being present in one place. Video conferencing is expected to gain wider applications to replace ordinary costly meetings.

5- Scientific Interchange

Online scientific journals play significant roles in providing professional interchange among

researches and scholars. The number of these journals has been on the rise around the world. However, the rate of increase has been declining compared to five years ago. The number of individuals who access these journals will continue to rise. Scientists publish the results of their works through internet seeking inputs, opinions, comments, and criticisms from others. They also can ask others working on similar projects to provide information or join in cooperation (Dylmaghani & Hejazi, 2005)

Negative Aspects of Internet
1- *Reduced Reading and Lowered Educational Aptitude*
Internet has reduced the need and desire for reading published materials. On the other hand, what is made available through internet does not create the a strong yearning for deep thinking (Tabatabee, Sadegh, 2008, p. 170).

Extensive tendencies among young individuals to access unsuitable internet domains have reduced their educational standing. Students who spend many hours in chat rooms will not have enough time left for studying and socialization. A study on the number of dropouts among new college students in New York revealed that the number had increased with availability of computers and internet. The study showed that 43% of dropouts worked long hours on internet during the night (Walance, Patricia, 2003, p. 332)

2- *Internet Ethical Problems*
Apart from the benefits internet provides to science, research, and communications arena, it has turned into a tool for abuse. Internet has found dangerous and unsuitable uses that create serious abnormal behaviors that lead to ethical problems. Internet currently has many sites that promote immorality and adultery among young generation through films, cartoons, promotions, and pornography. The spread of these sites and their accessibility have turned internet into a tool in the hands of superpowers and internal opposition to use them through preplanned programs to undermine national identities and religious beliefs.

Information age has introduced deep political and social changes to societies. It has also presented new and unique ethical problems that need to be addressed. Information technology has influenced our daily mannerism and activities. It has also changed the ways we look at them. Advancement in information technology has challenged certain traditional principles with given political or ethical connotations. Examples of these principles are ownership, privacy, distribution of power, basic freedom, and ethical responsibility.
The following is a list of some current questions related to individual and organizational ethics in information processing.

- What are ethical responsibilities of computer professionals?
- Who should take the blame for software errors?
- Is computer hacking unethical?
- Is software copying without prior permission of its owner wrong and unwarranted?
Some other questions in information processing relate to public policies.
- Should individuals feel free to use internet to express their views without any encumbrance?
- Should government extend all limitation imposed on print industry to include internet networks?

The intention of raising these questions is to determine if government should treat the bulk of information that come through internet from foreign sources with the same controls they have imposed on books and newspapers. What security measures government bodies should adopt in order to safeguard privacy of individuals? What are civil responsibilities of government in this respect? (Shahryari, 2006)

1. *Computer Abuse*
Solomon and O'Brien discovered that software theft was only a minor problem before computers enter homes and offices about 20 years ago. Fast and inexpensive duplication capabilities have provided opportunities to many to use computer technology. This technology has crossed the professional boundaries and has entered into public domain. Internet has expedited this trend (Sanjeev Phukan, 2002)

Communication networks have increased the transfer speed for transmission of pictures, voice, films, and information. Computer technology has facilitated new and innovative ways for man-machine interactions. It has also made human-to-human interaction over a virtual space possible.

Human-to-human interaction is the building block of culture. That is the reason why societies should be sensitive about computer ethics. With the spread of computer technology, its abuse has increased tremendously. Computer abuse may present severe consequences by passage of time. Computer abuse increased three fold from 1990 to 1993 of which 40% was virus attacks, computer crimes, and copyright violations.
The following is a list of major computer abuse.
- Unauthorized database access and modifications of data entry for financial gains.
- Destroying, preventing, or abusing computer output
- Computer database modifications or altering software programs by any means other than virus malware
- Data or software theft
- Using unauthorized and/or unlicensed software
- Using computer facilities for unauthorized personal use

- Privacy invasion by disclosing personal data, violating colleague's rights, and/or disclosing owners' information
- Data destruction by accessing computer systems through public networks
- Computer processing sabotage or interference by inflicting intentional damages to computer processing or facilities (Eslami, et al, 2007, pp. 409-410)

2.   *Software Copyright Violation*

How Islamic scholars should view an ethical problem in order to devise a rule on unauthorized software duplication. One of the main principles of Islam declares that the primary requirement for using things is to obtain permission from its owner. This principle considers obtaining permission an inherent right of owners unless otherwise is stated.

Unauthorized software duplication reduces income of the software producer resulting to low motivation for producing better or other software. This loss is a good reason for religious scholars to search Islamic primary references (i.e. Quran and tradition) to find teachings that could help them to devise ethical rules on these issues. The following are the two versus that may be useful for this purpose:

1- O ye who believe, Eat not up your property among yourselves in vanities. But let there be amongst you traffic and trade by mutual good-will (Nesa/29)

2- Ye who believe, fulfill (all) obligations (Maedeh/1)

The first verse commands not to destroy others' property.   Unauthorized reproduction and use of software (destroying others' property) can bankrupt software producers.   The second verse commands people to observe their obligations and fulfill their contracts. Software producers ask users to sign an agreement before using their software. Software users should comply with their agreements in order to remain within ethical boundaries.

The copyright issue can be looked at from a different angle. The intellectual right is a complex issue worthy of careful contemplation. Protection of software and information rights faces several issues that need detailed study. The issue of using others' properties without permission not only includes physical properties or material things but also includes people's ideas and thoughts. Intellectual property of software is an asset, therefore duplication and/or use of software without producer's permission is unethical and illegal.

When a software can be upgraded by several individuals, how much intellectual right each one will have? When a group of organizations collectively invest to produce a software, they should be able to obtain the intellectual right of that software to gain economic benefits. There is no discussion about the intellectual right of software. What is in question is the

extend of this right. Parker, Aesop, and Baker believed that software producers do not have the right to publish incomplete software.

Unlimited right is not also justify because it may stand in the way of technology development, which is not beneficial to society. For example, a software producer may decline public distribution of its software in order to draw the maximum gain from limited offer. Producer's right to take such approach is in question because this practice is against the interest of society. Therefore, intellectual right should be subject to some limitations.   These limitations can strike a balance between intellectual rights and public interest (Eslami, et al, 2007, pp. 403-406).

3. *Privacy*

Information technology has facilitated storing large volume of data on small storage medium - the volume of information which previously needed many vaults for safe keeping. Information technology also has made it possible to recover data that was not possible at all or was difficult to recover in the past.

Many organization keep private information of individuals. Collection of individuals' information may take place without their knowledge or consent. Every individual has the right for privacy. This is the basic right for maintaining control over one's life.

Advancement of computer technology has increased capacity and speed of data processing leading to lower cost of data handling. These developments have encouraged formation of numerous data centers. The activities of these data centers and the services they provide, inevitably, may compromise individual's privacy. There are two categories of privacy, namely, consumer's privacy and employee's privacy.

Data centers such as advertising agencies, insurance companies, credit companies, and retailers maintain information on their customers. They use their databases for information control or business activities. The consumer information they maintain in such databases are examples of customers' privacy.

Employees have four privacy rights, namely, the right to control or limit access to personal data they provide to employer, the right to choose another job outside the present work environment, the right to have own opinion and/or thoughts, and the right or freedom of expression.

Offices and workshops increasing recognize the right of employees to have control over their work. There should be assurance that employee supervision will not easily result in violation of their privacy (Eslami et al, 2007, p. 377)

Database centers provide numerous advantages. Higher efficiency, more equitable distribution of social benefits, and effective supervision of crime prevention are some of the advantages these data centers. Governments point out to these benefits in an attempt to justify their intrusion of privacies. However, they

have failed to convince individuals to condone and accept such government actions.

US passed a bill in 1974 to prevent government agencies from creating centralized databases on private information of certain targeted individuals when the uses of data were not clearly defined or sufficiently justified. Other countries have established organizations to protect privacy of individuals. These organizations have the authority and power to control activities of government agencies and private companies who maintain databases on private citizens. Some critiques still believe that neither laws nor controlling organizations had been able to provide sufficient safeguard to individuals' privacy (Shahriari, 2009).

Andrew S. Chiu reported in an article about his findings from a business poll that showed 82% of individuals with user profile had some sort of worries. Internet records online user activities and trace users through user profiles. With expansion of business distribution channels and unexpected business competitions, a need arose to store limited information about users on their users hard drive to collect information about their characteristics and their needs (Chiu, A. S. 2000).

Abusing personal information of individuals is unethical. Information processing ethics includes discussion about issues such as unauthorized access to private information, the boundaries of private information, and access to private information under emergency or legal mandate. For example, Islam prohibits looking into someone else's letter. This also applies to electronic mails. Access to private information under legal mandates include tracing viruses, violation of system security, examining offensive behavior, protection of legal or intellectual property right, enforcing legal requirements or prohibition, protection of national or social security. Only competent persons should examine these issues.

4. Computer Hacking

Computer hacking is an unethical activity specific to virtual domain, even if it is done for good intention. This unethical activity may have positive applications such as hacking foreign sites that may have attacked us.

Computer professionals who specialize in hacking do not see it as a game. They use hacking to attack and inflict damage to individuals or organizations. However, hacking has turned into a game for some young internet users who resort to this unethical activity to examine their capabilities or satisfy their needs. Some ordinary users undertake hacking sites and weblogs in order to increase their knowledge and gain experience (Shir Kavand ,2008).

5. Weblogging

Ethics is a relative issue in weblogging. Something that is not condoned in Iranian weblogs may be completely acceptable in other countries. Unfortunately, the reference weblogs with highest readers do not respect ethics. If they were to observe ethics in their writings, others would follow. When they cross the ethics boundaries, others begin to use the same verbiage and style.

The number of active and influential weblogs stands at hundred thousand. This number is much higher than the number of official newspapers, magazines, and journals in print. Therefore, we are facing a huge volume of content exposure with thousands of unethical materials.

Weblogs are classified into general, personal, and professional. Ethics in professional weblogs refer to observation of scientific principles such as observing copyright rights and obtaining permission from author. Profanity is the major issue in general or personal weblogs. Although unethical weblogs make a low percentage of total weblogs, they have a large number of visitors. This large number of audience makes unethical issues of these weblogs important.

A number of webloggers are against legally controlling professional weblogs and believe the responsibility of observing ethical codes should rest on serving agents. To prevent selective treatment of unethical issues, government or an organization with legal expertise should identify examples of unethical issues. This approach should provide the legal guidelines on weblog ethics and prevent confusion (weblog ethics, 2008).

It is wrong to say that new technologies drive human towards perfection and those who have access to these technologies are perfect people. Such blessings as property, children, material things, intelligent, talent, and nonmaterial things are double-edge sword. They can be used for good or bad deeds. Even the noblest sciences are not the ultimate pupose for human because they are mental, transferable, and learned concepts. These are lifeless tools and human inventions for well-being of human kind. Sciences are not dirty, evil, disposable, or objectable per se. Nor are they inherently holy, desirable, or admirable. They are testing tools. More tools may mean higher elevation and transcend or deep decline and downfall. Less tools may mean limited transcend and limited downfall (Mesbah Yazdi, 2005).

Conclusion

Internet issues have become more complicated. The number of people who use IT at home or at work is rising. More people can post content on internet. Extended activities on internet brings up ethical issues such as intellectual property rights, data ownership, copyright laws, computer theft, intrusion of privacy, and computer hacking.

There is no difference between public ethics and information systems ethics. Issues related to information system ethics are included in public ethics.

Computer ethics are probably more diverse than typical human activities. Therefore, it may be more difficult for users to determine what computer activities are ethical and which ones are unethical. For example, users who condone copyright infringement may not equate it with stealing from someone's purse. Or, hackers who make unauthorized access to a computer system may never think of it as being similar to making an authorized entry to someone's house. If these computer users see their actions as theft, many of them would become fearful of committing such acts.

It may be prudent to include ethical training in internet and computer education in order to reduce unethical computer activities. Those who sympathize with Islamic culture and Iranian revolution can promote correct internet usage through effective and up to date publications and books. Let us hope that we could witness increasing levels of adherence to ethics with advancement of technology.

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