



An overview of Information and Computer Technology Ethics in the United Arab Emirates

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Abstract

The UAE as a young and quickly rising nation has undergone a fast transformation in a relatively short span of time into a financial, industrial, tourist and strategic hub of the region. With the increasing significance of information and computer technology and the associated risks, it is important to gain insight into both the ethical environment as a whole, and specifically where it applies to information and computer technology.

The objective of this paper is to discern the ethical strengths, weaknesses and areas of concern in the UAE employment market as a whole, covering the private and public sectors and contrasting them to evaluate their separate development paths. This applies to the ethical environment as a whole, but specifically to the field of ICT ethics which is the main focus of this document.

This study briefly covers several models of ethical behaviour and decision making in order to construct a suitable model for the evaluation of the ethical environment in the UAE workplace. The model thus derived is used in the design of a questionnaire which was distributed to a broad sampling of the UAE employment sector.

The results of this survey showed a better awareness and implementation of computer ethics in the private sector than in the public sector. The survey identified several areas of weakness, and makes recommendations for improving the ethical environment through awareness, education, enforcement, and the fair and equitable treatment of employees where it comes to computer ethics issues.

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Chapter 1 | Introduction

1.1 General Introduction

Although the United Arab Emirates is a relatively young country compared to the rest of the modern countries, it has managed to exceed the expectations of the world to what can be achievable by a country in a span of thirty years. The U.A.E. over the years since it's constitution in 1971 managed to put together a very well established economy and political system that have led to it being a leader in the financial, industrial, and technological sectors globally. (World Fact Book, 2009)

The United Arab Emirates today enjoys a level of modern technology and infrastructure equivalent to western countries, placing it, if one were to judge by this consideration alone, in the ranks of developed nations. The Readiness of Information and Computer Technology ranking published in the Global Information Technology Report places the UAE at the 27th rank globally (GITR 2008-2009). This ranking, described by the GITR as the Networked Readiness Index (NRI) has seen the UAE advance from 29th globally the previous year. The report also indicated the rank of government prioritization of Information and computer technology as the 5th highest globally, and also notes that the UAE is the 27th globally in terms of Internet Access in schools. Other noteworthy figures published in the report are the ranking of the UAE as the 29th in terms of High-speed Broadband penetration, and the 1st in terms of mobile telephone subscribers. (GITR, 2009)

The importance the government is giving to Information and computer technology indicates the commitment to extend the reachability of ICT to each and every individual in the country as part of the government vision of the future. (U.A.E. Year Book, 2009)

The U.A.E. promotes corporate governance and ethical behavior in its public and private sectors as evidenced by the establishment of a corporate governance institute (Hawkamah) which aims to assist the country in implementing sustainable corporate governance strategies in line with the government's mission and objectives. (WAM, 2009)

Ethics is the "branch of knowledge concerned with moral principles governing or influencing personal conduct" as defined in the Oxford English Dictionary. Some other definitions have also been given in the various literature on the subject and it can be agreed that ethics addresses the question of right and wrong of human relationships and actions.(OED)

Computer Ethics is concerned with ethical situations that have computer or Information technology involved in it whether it is on individual basis or corporate. Computer Ethics as an independent field of enquiry has been debated for a long time and the main question that was always raised in debates is whether ethical situations when actually related to the use of computers are unique problems or not when compared to general ethical situations (Tavani, 2002).

The wide spread of the internet and the client server architecture have increased the importance of having computer ethics as a separate domain of research, prior to that the ethical issues studied were focused on standalone computer related issues which were relatable to existing framework of ethics. (Weckert, 2001)

1.2 Overview of the dissertation

This paper shall discuss the subject matter of both the ethical environment in the United Arab Emirates in general terms and the specific field of Information and Computer Ethics which is this papers primary topic.

The dissertation will discuss the topics in four main heading as follows:

Chapter 1 will cover a brief introduction about the subject and will also list the aims and objectives of the dissertation. The chapter will also cover a brief definition of the environment in which the study will be conducted.

Chapter 2 will cover the literature review of Ethics and ethical behavior in organization in general and aims to provide a working definition of ethics and factors that influence the ethical decision making. The chapter will also discuss the specific field of information and computer ethics and shall address the arising concerns related to computer ethics.

The chapter will also discuss different models of ethical decision making that have been chosen from the various literature in order to better understand and analyze both the motives and the outcomes of ethical decision making process as well as the various societal pressures and external influences.

The conclusion of the chapter shall also summarize in brief the finding of this author, subjective as they may be and shall attempt to formalize the behavioral model by which the finding of the research included in subsequent chapter shall be analyzed.

The implementation of the study would be covered in chapter 3 which will include the questions that will be used in the survey and details about the samples to be surveyed.

Chapter 4 will cover the analysis and results of the research and then will conclude with the recommendation for organization in public and private sectors in the United Arab Emriates and a brief summary of the findings.

1.3 Defining the Environment

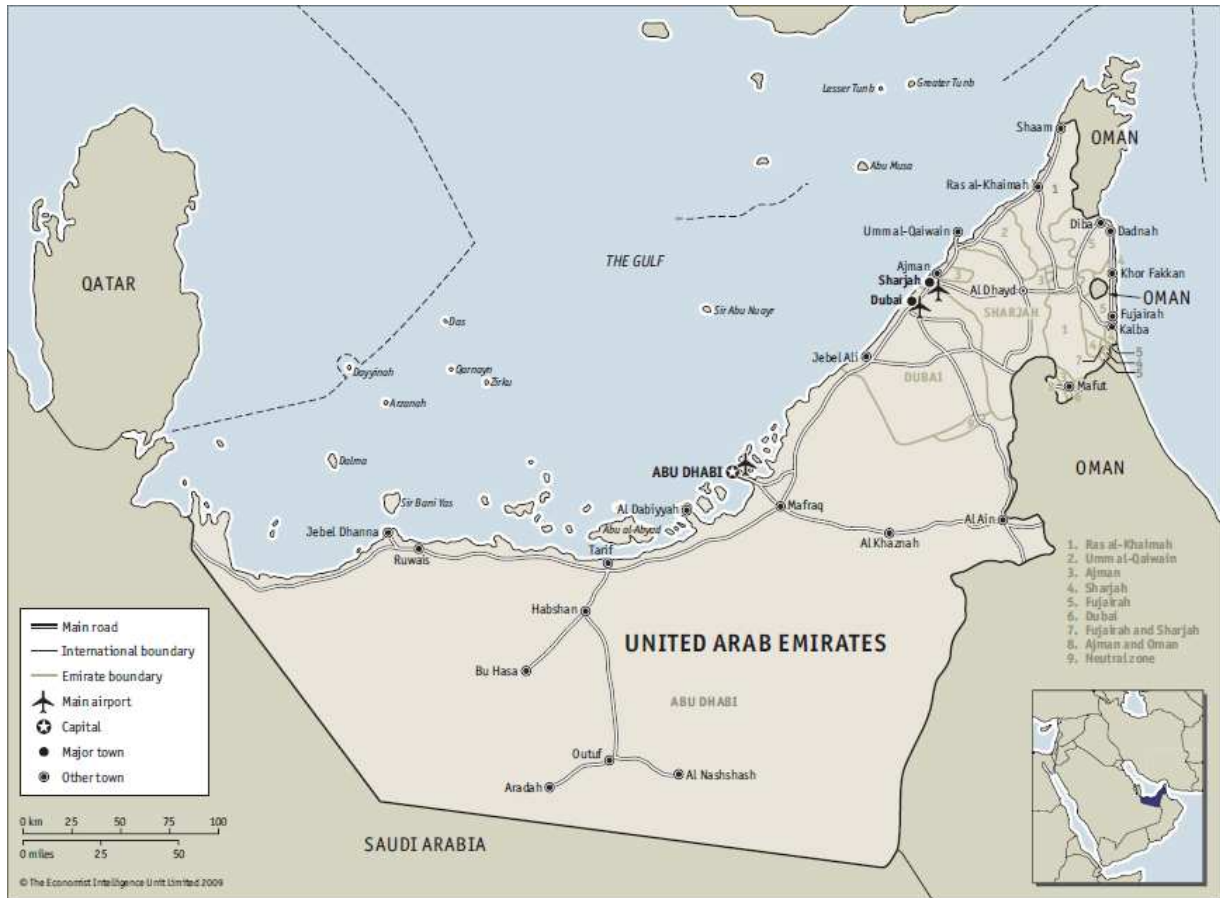
1.3.1 The United Arab Emirates

The United Arab Emirates was formally established on the 2nd of December 1971 after gaining independence from Great Britain to form a constitutional federation of six emirates, Abu Dhabi, Dubai, Sharjah, Ajman, Umm-Al Quwain, and Fujairah. Ras Al Khaima joined the federation later in 1972. (U.A.E. Year Book, 2009)

Abu Dhabi is the capital of the United Arab Emirates, and the ruler of Abu Dhabi is the president of the United Arab Emirates who was elected by the supreme council which is made up of the seven rulers of the seven emirates. (WFB, 2009)

In 1962 Abu Dhabi was the first of the emirates to export oil followed by some of the other emirates at a later stage. The oil industry attracted foreign investors from around the globe along with labor force and expatriates who today forms more than seventy five percent (75%) of the population in the UAE. (WFB, 2009)

The total land area of the United Arab Emirates is 83,600 sq km including islands and 77,700 sq km without including the islands. The U.A.E. is located between the Sultanate of Oman and the Kingdom of Saudi Arabia in the Arabia Peninsula in the Middle East. U.A.E.'s cost line falls on the Persian Gulf and the Gulf of Oman and it extends for a total of 1,318 km. These recorded figure are of the costline before the land reclamation projects of the Dubai palms, Palm Jumairah, Palm Jebal Ali and Palm Deira which have effectively extended these numbers but the new figures are yet to be determined. (U.A.E. Year Book 2009)



Map of United Arab Emirates (WFB)

The estimated population of the UAE as of 2009 is four million seven hundred ninety eight thousand and four hundred ninety one (4,798,491), this estimate was derived from the results of the 2005 census which noted a growth rate in the population of approximately three percent and seven tenths of a percent (3.689%). According to the Human Development Indices (2008) the United Arab Emirates has a relatively high Human Development Index and was ranked thirty first among global countries. According to a statistical study published as an appendix to the 2009 statistical report of International Monetary Fund on the United Arab Emirates the recoded gross domestic product is seven hundred twenty nine billion and seven hundred million Emarati

Dirhams or the equivalent of one hundred ninety eight billion and six hundred sixty million United States Dollars. (World Economical outlook, 2009)

The United Arab Emirates currency is the Emarati Dirahm (AED or Dh) and the exchange rate to the United States Dollar is AED 3.67 per one US Dollar. The Emarati Dirham has been official pegged to the US dollar since February 2002 and it is expected to stay pegged for the next two years or even more.(IMF, 2009)

The United Arab Emirates industries consist of petroleum (Oil and Gas) and petrochemicals, ceramics, aluminum, cement, fertilizers, commercial ship repair, tourism, transport, construction materials, boat building, financial services, real estate, and services industries which has undergone a remarkable expansion in the past two years. The estimated production growth rate as of 2008 is seven percent and seven tenth of a percent (7.7%) according the World economic outlook 2009. The UAE has one of the fastest growing economies according to historical statistics and current projection by the ministry of finance in their investment climate report. The United Arab Emirates made a strategic objective to reduce their dependency on oil and gas revenues which they managed to achieve, according to the CIA world fact book which stated that the nation reduced their dependency on oil and gas to twenty five percent (25%) by diversifying their economy.(WFB 2009, IMF 2009)

The United Arab Emirates enjoys a relatively liberal socioeconomic environment which is expected to be sustained according to analysts' reports. The U.A.E. also enjoys strong relations with west especially France, USA, and the UK which forms the base of its foreign policy while it continues to reaffirm its strong relations with the countries in the region, Middle East and Asia (EIU 2009).

When it comes to technology the United Arab Emirates has established itself in recent years as a regional technological hub, with major representation and presence of the big players in the technology industry. The U.A.E. is also in the forefront of infrastructure

development and pioneering projects such as modern fiber-optic networks which caters to the growing demands for enhanced connectivity to the World Wide Web and other networks and media. The country also enjoys the highest penetration of cellular phone technology in the region, and is the home of the Arab world only satellite mobile telephone and broadband internet service provider. (GITR, 2009 and UAE Year book 2009)

According to published figures by the United Arab Emirates largest Internet Service provider (ISP) Etisalat, there were approximately 1,150,000 active internet users as of 2008. According to interviewed individuals in several organizations in the public and private sector, all of their organizations provide a sort of access to the World Wide Web, either it is a limited restricted access or open access depending on the internal policies of each organization. (GITR, 2009)

There are two major employment sectors in the UAE, the first one is the public sector which mainly consists of the government entities such as ministries, military, departments, municipalities, public works, and similar organization. The second is the private sector which is business organizations that are run privately for profit and are not controlled by the federal or the state government such as a private joint stock companies (PJSC), or Public joint stock companies (PJS).(UAE Macroeconomic report, 2007)

1.4 Statement of the Dissertation

This dissertation will attempt to analyze the ethical behavior of employees in the public and private sectors in the United Arab Emirates, the analysis will focus mostly on the determining the awareness of general ethics and ethics related to the use of information, and computer technology (ICT) “computer ethics”.

The research will also try to obtain through this study a brief understanding on how organizations are addressing ethics in both the public and private sectors in the United

Arab Emirates. The research will be conducted through questionnaires and brief interviews with individuals who are employed in both private and public sectors.

The finding will be analyzed and the final results will be reviewed to identify the status of ethical environment in both the environments the public and private sectors in the United Arab Emirates, this will be followed by the conclusions and recommendation.

1.5 Aim and objectives

1.5.1 Aim of the dissertation

The aim of the dissertation is to derive a better understanding of the perception of ethics and ethical behavior in the corporate environment in the United Arab Emirates. The study will focus on Ethical behavior related to Information and Computer Technology (ICT).

The dissertation also aims to find how different organizations are addressing ethics with in the corporate environment. This paper will attempt to suggest suitable criteria to study and analyze the general ethical behavior and computer ethics.

After the analysis, gaps will be identified if any exist, and recommendations will be put forth to improve the awareness of Ethical behavior and computer ethics.

1.5.2 Objectives

The objectives of the dissertation are to understand:

1. The awareness of ethics in general and computer ethics in specific among both private and public sector employees in the UAE.
2. The importance and application of computer ethics and the perceived value to the individuals surveyed
3. The use and utilization of organizational tools pertaining to ethical behavior such as formal, written codes of ethics , and the extent to which address the particular issue of ICT ethics.
4. The variance of the results of this study between the public and private and different levels of responsibility with in each sector as applies to perception and awareness of ICT ethics.

Chapter 2 | Ethics and Ethical Behavior

2.1 Defining Ethics

The study of Ethics is a broad and venerable enterprise, as old as recorded history. The rules of Ethical behavior are, and have as far as we know been one of the major concerns, area of education and teaching, and fields of inquiry of mankind; it is a major part of all religions, and the study of correct and right conduct has been a motivating force and a large part of the legacy of the founders of Eastern philosophy (Confucius, Menicus) and Western philosophy (Socrates, Aristotle)

Some argue that ethics is a set of rules or principles that governs one's moral decision making process. (Johnson 1985)

Ethics as a broad philosophical study may be outside the scope of this paper; this paper will be concerned primarily with the practicable and applicable implications alone, and as part of a brief discourse into the more widely accepted Ethical principles that form the coherent social contract encompassing the commonly acknowledged rules of Ethical behavior, this chapter will also attempt to define the prohibitions and admonitions common to Ethical Cultures.

The Oxford English Dictionary defines ethics as the “branch of knowledge concerned with moral principles governing or influencing personal conduct”. The Merriam-Webster Collegiate Dictionary has four different definitions of Ethics which are as follows:

- *“the discipline dealing with what is good and bad and with moral duty and obligation”*
- *“a set of moral principles”*
- *“a theory or system of moral values”*

- *“the principles of conduct governing an individual or a group” Merriam-Webster Collegiate Dictionary*

Every one defines Ethics in a different way which ever definition one chooses to adopt, it can be agreed that ethics addresses the question of right and wrong of human relationships and actions.

The discipline of ethics evaluates the right and wrong in an action, a system, or so. In this evaluation it looks at whether this certain action should be promoted or reformed and if so why?

It is well known that the study of ethics has been around as long as recorded history and it is noteworthy to mention that the study is driving more attention as science advances and businesses grow. Now a days we see literature on Ethics related to medical practice, corporate and business ethics, and lot of other fields. As the human race evolve and advance more and more new ethical issues are introduced that adds complexity into the field of ethical studies.

Corporate ethics has been gaining importance day after another as globalization evolved and different cultures started mixing in the corporate environments to create multicultural environments with in corporations. The economies of different countries are getting closer and connected to each other to create a more interacting global economy. Trade laws are evolving; global communication is easier than it ever was. (Singhapakdi and Karande 1998)

All of these factors mentioned above and many others introduce many new ethical dilemmas and add more complexity in to the understanding of corporate ethics and the study of ethics in general. Therefore the study of ethics will continuously evolve and more new concerns will arise that will need to be addressed.

A number of developing countries are now promoting corporate social responsibilities, business ethics, sustainable reporting and corporate governance to enhance the perception and understanding of ethical behavior within its economical system.

Stakeholders have realized the importance of corporate governance and the benefits that may be gained from having good corporate governance. (McGee and Preobragenskaya 2006)

Ethics addresses the way humans treat one another, what is right or wrong, it has got to do with the way people decide what is good or bad. This paper takes a closer look at certain areas of concern with is the study of Ethics rather than ethics in general.

Being ethical is not necessarily doing what an individual feels is right or not doing what he or she feel is wrong. Ethics should not be confused with religion although most religions advocate high ethical standards, not all people are religious but religion can provide the motivations for ethical behavior. Following the law or doing whatever society accepts is also not necessary to be ethical, in some cases laws or accepted behavior by societies may deviate from what is ethical.

Ethics are typical means of conduct that distinguish between what is known to be acceptable and unacceptable behavior. Although it is known that a lot some common ethical norms can be identified, the interpretation, application, and balancing of these norms may vary between individuals based on their own values and experiences.

2.2 Influencing Factors

The practical judgment of whether or not an action is ethical draws from what are the ethical first principals. The so called Golden Rule of ethics is Reciprocity, the idea that we should treat others as we would want to be treated.

“None of you [truly] believes until he wishes for his brother what he wishes for himself.” *Prophet Muhammad, An-Nawawi's Forty Hadith 13 (p. 56)*

"So in everything, do to others what you would have them do to you, for this sums up the Law and the Prophets."

Jesus, Mathew 7:12

Tsze-kung asked, saying, 'Is there one word which may serve as a rule of practice for all one's life?' The Master said, 'Is not RECIPROCITY such a word? What you do not want done to yourself, do not do to others.'

Confucius, Analects, Chapter 23, James Legge Translation

Do not to your neighbor what you would take ill from him.

Pittacus, Fragment 10.3

Reciprocity admonishes the individual to act on the belief that others are entitled to the undoubtedly fair treatment to which one feels that he himself is entitled. Accepting the Golden Rule as the canonical first principal, the examiner gains a personal, human understanding of Ethics.

The statements of the Golden Rule above take both the forms of the imperative and prohibitive, which brings to focus the common belief that if what one should do is important, then what one should not do is even more so.

It is often a higher priority not to do wrong than to do right. This is no more clearly emphasized than in the Latin motto "***primum nil nocere***" or "First, do no harm.

'Whosoever believes in Allah and the Last Day, then let him speak good or remain silent.'

Prophet Muhammad, narrated by Abi Hurairah in Saheeh Al-Bukhari

This is in essence the Social Contract, not in the political sense of Locke and Rousseau but in the sense embodied by the ancient Greek philosopher Epicurus

Natural justice is a pledge of reciprocal benefit, to prevent one man from harming or being harmed by another.

Epicurus, Sovereign Maxims 31

This is in light of the commonly held principal "it is easier to do harm to someone than to do good for them" *Plato, Meno 94-95, quoted in Routledge Philosophy Guidebook to Plato and the Trial of Socrates, Thomas C. Brickhouse, Nicholas D. Smith - 2004*. One is not to suppose however that the avoidance of error is enough; although this passive, negative benevolence is a great resource, Ethical behavior cannot be restricted to the avoidance of stepping on toes. Epicurus also touches on reciprocal benefit as well as the prevention of harm in the above quote, and other writers have written about the idea of moral duty.

Man, no doubt, owes many other moral duties to his fellow men; such as to feed the hungry, clothe the naked, shelter the homeless, care for the sick, protect the defenseless, assist the weak, and enlighten the ignorant.

Lysander Spooner, Natural Law

Altruism however is optional. Spooner continues to write

But these are simply moral duties, of which each man must be his own judge, in each particular case, as to whether, and how, and how far, he can, or will, perform them.

Lysander Spooner, Natural Law

The idea here is that not everyone has to do it, but someone does.

A state is not a mere society, having a common place, established for the prevention of mutual crime and for the sake of exchange.... Political society exists for the sake of noble actions, and not of mere companionship.

Aristotle, Politics III

Aristotle states the Greek Social Contract succinctly, and while the noble ends are assigned to society as a whole, Politics III also outlines a separation of roles in society;

implying that it is the duty of the leaders of society to espouse these goals, and if they do not perform it they are in fact in blameworthy default.

Some altruistic feeling must however exist in everyday life. The Islamic *Zakat* or charity tax is not optional for example. The privileged are seen to have a duty to those less privileged.

He is not a believer, he who eats to his fill, whilst his neighbor besides him goes hungry." *Prophet Muhammad, Saheeh al-Bukhari 112*

It is an Ethical principle therefore to prevent harm. Would it be Ethical not to prevent a crime if it was in one's power to do so? It may also be said that it is morally reprehensible not to go out of one's way to save a person that is drowning.

The few paragraphs earlier shows how ethics was historically addressed by religion and philosophy.

Over the years unethical practices have lead business globally to bankruptcy and individual investors to financial loss and in some cases this have lead to the slowdown or crash of a countries economy. Cases as the crash of Enron, and other financial scandals such as Parmalat, Ahold, or MCI-worldcomm have been experienced globally by many countries (Elliot and Schroth 2002). Cases have been disclosed with delayed financial discloser, manipulation of financial data, doubtful IPOs, internal corruption which have lead to bankruptcy. Unethical behavior by top management, entrepreneurs, and in some cases by professionals such as lawyers, bankers, analysts, or accountants has been noted to be the common factor that led to such bankruptcy (Hamilton, 2002).

A recent series of incidents in the United Arab Emirates which shook investors' confidence was directly related to typical unethical behavior by top level management. The bribery scandals that was conducted by top management in several financial institutions such as Dubai Islamic Bank and Tamweel and real estate firms such as Nakheel and Deyaar have caused the questioning of investors and slowed down the market for some time, luckily these cases were at their early stages and the type of fraud was not related directly the financial flow of the organizations itself therefore did

not lead to compromising financial losses nor bankruptcy of any of the organizations (Zawya, Sunday, Jun 08, 2008).

These companies have suffered a bad reputation and will continue to suffer for a long time. Cases like this forced organizations and companies to push the priority of corporate governance and adopt concepts such as Corporate Social Responsibility (CSR). As in the United Arab Emirates, the Government of Dubai is now promoting accountability and sustainable development by introducing strict measures such and stronger punishment and development of a strict insider trading laws.

With these measures and such cases that ruined the reputation of once reputable organizations, we cannot conclude that organizations and individuals within will start or are now on the path of proper ethical conduct. Business environment evolve, environmental changes both gradual and dramatically sudden are possible in a developing country, such environments are affected by external forces locally and globally, it is unpredictable what kind of ethical behavior will arise from an aggressive competitive market. Despite the number of historic incidents or ethical misconduct in the UAE and globally we see today a series of fraud and ethical misconduct that were never seen several years ago in UAE for example.

Certainly press today addresses Corporate Governance and ethical conduct more than ever addressed previously and it is noticed that key business leaders are promoting ethical conduct and Corporate Governance in press and in corporate newsletters as noted by several individuals from different organizations in the UAE in an informal discussion. Yes, some improvement is noticed but this can't conclude that these individuals, organizations, or the industry are in line with the promoted ethical conduct noting again the series of incidents mentioned earlier.

Forms of unethical conduct varies in ranges at management levels and can also occur at lower levels in an organization which are considerably frequent but usually do not reach the press therefore they are not addressed properly. Let's take for example a sale representative of a reputable airline ticketing agency accepts a small amount from the

customer in order to put his or her name at the top of a waiting list, or a sales person holds an airline ticket that was purchased for a low fare until the flight is closed to sell it at a higher premium. Although the examples mentioned are addressed today, they were not looked at until this was publicly practiced by travel agencies themselves to increase profitability. Airline companies today have measures in place to avoid such fraud just like every other organization fraud and abuse department looks after such cases.

Just like this type of unethical behavior, there are many other cases that have not been addresses or in some cases not noticed because they are at lower levels in organizations. The issue here is that sometimes personals drive themselves to believe that such practices are ethical until proven otherwise, and some are just under external pressure and believe that they are entitled due to the position they are in.

Unethical conduct is also common at higher level such a the board of directors or top level management in an organization, for example large multinational organizations tend to move most of their assets and cash flow to other countries to avoid taxation and it has become common that organization move their operations to different countries to avoid the high cost of human resources.

Unethical practices vary and they are countless, there is no certain ways to group them but Andy Crane and Dirk Matten in their book Business Ethics have listed the major forms or classes of unethical conduct which include but are not limited to disregard of agreements, unfair competition, unjust treatment towards stake holders by abuse of power or due to conflict of interest, unfair communication by for example false delivery of financial data.

It is common that the most reported major ethical misconducts are the conflict of interest and the abuse of power. Conflict of interest is commonly reflected today in business in which the interest of an individual contradicts with the interest of the business or organization he or she works for.

2.3 Ethics in the IT Industry

2.3.1 Computer Ethics

Technology in and of itself is unconcerned with ethics, morality and right and wrong; technology is only concerned with the practical, useful application of science for gain. While science, medicine and technological advancement have contributed inestimably to lessening disease and hunger and improving the standard of human life in many places, it has not led to universal happiness, justice or wealth as was foreseen (Grunwald, 1999) nor has it been universally positive; people have become far more efficient at killing each other for one thing, and the rapid flow of information has created many opportunities for knowledge unfairly gained to be misused and exploited. Several authors have referred to this problem as the ambivalence of technology (Mitcham, 1994).

The problem lies that while the great technological advancements of the past had for the most part localized effects, and the growth of technology being linear, slow and progressive, modern technology is characterized by the potential of universal effects and exponential growth. Particularly in Computer Systems, exponential growth in technology is the rule; Moore's Law which states:

The complexity for minimum component costs has increased at a rate of roughly a factor of two per year ... Certainly over the short term this rate can be expected to continue, if not to increase. Over the longer term, the rate of increase is a bit more uncertain, although there is no reason to believe it will not remain nearly constant for at least 10 years. That means by 1975, the number of components per integrated circuit for minimum cost will be 65,000. I believe that such a large circuit can be built on a single wafer is axiomatic. *Gordon Moore 1965*

Gordon Moore, "Cramming more components onto integrated circuits", Electronics Magazine 19 April, 1965

While this may seem remote, mundane and irrelevant to the field today, Moore's law continues at the same rate and has done so for 43 years, making today's computers roughly 8.8 trillion times more powerful than when the law was formulated. Furthermore, the far off future that the original paper spoke off has been estimated to be 600 years off (Krauss, Starkman 2004).

It is the accelerating growth in the rate of technological advancement that makes the effects more relevant. The total number of Internet users grew from 0.4% of the world's population in 1995 to 15.7% in 2005 (Over a billion people.) More and more, as the application of information technology becomes ubiquitous, our information, banking details, livelihoods, social interaction and entertainment are more and more bound to a medium where we and our personal private information are "between 10 and 150 milliseconds away from every creep on the planet."

The problem of computer ethics and the ambivalence of technology is that there are no new challenges; our private information has always and will always be important; so will our medical history, bank account numbers, identities, and our personal affairs; technology only makes it more convenient to obtain and abuse information. Infinitely more convenient in fact. Whereas a malicious person previously had to lie, cheat, steal and break in to your Doctor's office late at night to obtain your medical records, which may well be much more effort than those records are worth, today all it takes for those records to be known to the world is negligence or malice on the part of an IT worker, a misplaced USB drive or laptop, a weak password, or a vulnerable system. (Straub and Nance, 1990)

Information Technology poses major risks and introduces new ethical situations and issues. Although it brings a great value to businesses and organizations, IT and because of miss use, caused major loss to many businesses and organization globally (Marshall, 1999). Organizations and business have suffered because of successful

intrusion attempts by outsiders, such attempts have disrupted the integrity and availability of data and in many cases resulted in financial losses of these organizations, although such incidents were caused by outsiders, insiders have been noted to be the main threat (Trembly, June, 1999), for example an insider may have unknowingly or knowingly introduced a virus, Trojan, worm, or any kind of malicious software to his or her corporate network which caused the leakage of information or the loss of data. An estimate of US\$ 265 billion dollars per year in total losses to businesses is considered conservative (CSI Survey 2000) and an average of US\$ 300,000 dollars in losses was recorded in 2008 to individual businesses that have had computer fraud or abuse incidents (CSI Survey 2008). Followed by incidents of laptops and portable devices theft, the second-most frequently occurring incident was network and computer abuse by insiders (CSI Survey 2008). Only one percent of the respondents in the year two thousand and eight CSI/FBI Computer Crime and Security Survey did not have a formal Information Security Policy, while eighteen percent of them were developing one and sixty eight percent had a formal Information Security Policy (CSI Survey 2008).

2.3.2 Defining Computer Ethics

Computer ethics is defined as the ethical situations where a computer is 'essentially involved' (Moor, 1985) Anderson argues that most of the available studies on computer ethics nowadays were mainly done on computer professionals, rather than the general public that is using computers (Anderson 1994). Johnson's defines three main areas or uses of the internet that raise ethical questioning or arguments and those areas are: 1. Scope, 2. Anonymity and 3. Reproducibility. (Johnson's 1997) Scope means that the internet covers a combination of access factors like no other media does.

Computer ethics not only faces individuals using the internet, or a question asked to individuals at their work place, but goes to the extent to corporate practices. (Darren

2002) For Instance there are huge corporations that have their entire business under the question is it ethical or not. I am taking the example of an advertising company that operates in the internet banner and pop-up advertising business space. Darren Charters had an entire study that had a very interesting conclusion. Darren concluded that such a company beyond any doubt invades personal privacy, in whatever context privacy is used, yet it is still ethically justified on the basis that its benefits by far exceeds the realizable harm. (Darren 2002)

The foundation of defining privacy was that other people, groups, and entities should not act in a way that intrudes on an individual's seclusion or solitude (McCloskey, 1980) however, this definition evolved with time (McCloskey, 1980). It was this concept of privacy that was initially established as a legal right. However, the expansive nature of the definition caused difficulties in its application. (Darren 2002)

Knowledge, can be used ethically and unethically, same thing applies to technology. Technology is a double-edged sword depending on how intended to be used, this was acknowledged way before the technology got as powerful as it is today. Terrell Bynum (2005) Computer Ethics as a legitimate independent field of applied ethics has been a debated subject for a long time and one of the debates questions was whether the ethical issues related to the use of computers are actual unique problems in comparison to applied ethics in general. Tavani (2002) On one side of the debate are those who believe that there are some ethical issues relate to the use of computers that are unique and have never been encountered before the introduction of computers, therefore cannot be addressed or analyzed by the traditional ethical framework. On the other hand are those who believe that computer related ethical issues are not unique and those issues can be related to cases that did not involve computers in the past.

It has been argued that computer ethics is unique because computers and technology in general have introduces new moral issues which require new moral classifications and descriptions in new moral categories. Or on the other hand some computer technology related ethical issues have introduces complexity and extremely broadened

existing moral framework which calls for new ethical or moral principles to help understand and explain those issues. Tavani (2002).

Computer ethics as a field of research was introduced in the 1940s first by professor Norbert Wiener, who foresaw several of the ethical issues today related to the use of computers, he believed that to integrate computer technology with society a lot needs to be changed and it will take long before the society adopts to it, he suggested changes such as, changes in government laws, changes in industries policies, introduction of a new codes of conduct in professional organizations.

In the 1990s a noticeable interest and growth in Computer Ethics began, the subject was given more attention in universities, new journals were constantly published and research centers were established with undivided focus to the subject. Bynum (2000)

Computer ethics domain rose as a field of inquiry with the increasing importance of information and computer technology. Previous to the wide spread availability of internet access and client server architecture, computer systems were isolated and information was localized, and the ethical issues studied focused on standalone computer issues which were relatable to existing ethics framework.

The subject of computer ethics was driven by areas of concern such as the responsibility of computer professionals, mainly software engineers, intellectual property and software piracy. Although these concerns are still important the areas of focus will continue to shift as new concerns are introduced with the evolution of technology. Today for example new concerns arise with advancements in computer networks and in particular the Internet. Hoven and Weckert (2008)

2.3.3 Arising Concerns

Technology is gaining extra abilities day after another such as the ability to gather data, store it and share it. This advancement in technology comes with its benefits but also has its drawbacks since such powerful access to information can introduce easier means of invasion of an individual's privacy. Record keeping and association between different pieces of information may pose a threat to an individual by making his or her information more visible to an unauthorized person. Weckert (2001)

An example of invasion of privacy is the practice of employee activities monitoring at a work place. Employers tend to monitor all activities that happen on their systems to make sure that employees are working on any illegal activities or activities that degrade the performance of the network or abuse the company resources which are provided to the employees for business use. Employers believe that they are morally entitled to monitor the activities of their employees because they are using systems and resources which are owned by the employer and are in place only for business related activities. Some argue that it is the employer's right to prohibit certain activities but there is a limit to what they can monitor. Introna (1997)

Another area of concern is responsibility, which covers the responsibility of an individual, the organization, service providers, and the government. In a situation where an application is found to be vulnerable to external attack for example the developer that developed the application must be held responsible. Another noteworthy case is when an individual entrusts his or her data to a system known to be vulnerable; the individual must then accept the risk of data loss or compromise, and will bear full responsibility legal or otherwise. Weckert (2001)

New issues like the ones mentioned earlier will arise and will need to be addressed, for example content delivery and the way the content is displayed is another area that is worth exploring these usually tend to lean in favor of an advertiser for example when looking at internet search technology such as services provided by Yahoo or Google today. Content of computer ethics will continue to change as new issues like these

evolve which will eventually also lead to a change in the way computer ethics is practiced or perceived

Broadly speaking, computer ethics field is looking in focus at software, hardware, network, and network extends beyond the local network with the penetration of the Internet, which raises many concerns in the field of computer Ethics. These concerns extend to e-commerce; banking, for example automatic teller machines, access control and surveillance systems which are today all interconnected with each other some way or another using computer network and Internet protocol

Information and Computer technology (ICT) and computer science academics have been constantly studying the possibility of Integrating Ethics into the MIS and computer science curriculums. Researchers believe that it is difficult to teach ethics directly without integrating it to a certain curriculum; however research finding have shown that if a person was confronted with an ethical issue, he or she can discuss, analyze and answer questions related to that ethical issue in a socially acceptable manner. (Cohen and Cornwell, 1989)

Cohen and Cronwell in their article where concerned about teaching information ethics in Management information systems and Information Systems classes, they categorized their concerns in three main concerns.

Concern 1: Where should ethics be taught?

Concern 2: Which pedagogical mechanism should be used?

Concern 3: Question for exploring the ethics issues in Information Systems.

The reasoning for the pedagogy they developed involve (1) the relationship of personal maturity to ethics (2) “the importance of repetition, challenge, and practice in developing a personal set of ethics”. Studies have shown that classes have shown significant improvement in performance on Information system ethics questionnaires when such treatment was applied. (Cohen and Cornwell, 1989)

Professional organization such the Association of Computing Machinery (ACM), Data Processing Managers Association (DPMA), Institute of Electrical and Electronics Engineers (IEEE) have taken the lead in the field of computer ethics by developing and distributing codes of ethical conduct related to the use of information systems and the profession itself. In order for these codes to be affective, all organization should communicate the code of ethical conduct to all members of the organization and should also make sure that all members are aware of the reasons and purposes behind this code of ethical conduct and should also make sure that they are committed to it and are willing to apply its guidelines in an appropriate manner and a are also willing to make these codes of ethical conduct part of their personal codes of ethics in order to make it effective. (Pierce, Margaret Anne; Henry, John W, 1996)

It is obvious as mentioned earlier that law influences the decision making process of an individual but many researchers view existing laws as inadequate when the case is related to computer ethical issues. Even cases that arrive at courts often get improperly or inefficiently assessed due to lack of knowledge in the field. Sacco, VF, and Zureik, E.(1990).

Laws related to computer ethics issues where not as stiff as it should be when relating it to the impact of a certain unethical action when computers are involved because these actions are either not weighed properly or the impact was not visible to an individual who lacks experience in the technology.

Individuals who commit crimes because they don't follow a formal code of conduct not only they impact their personal state but also puts the organization they work for in a position where it is legally liable and vulnerable to prosecution. (Gardner et al, 1989)

Pierce and Henry suggests several ways in which the influence of computer or information systems related legislation can be strengthened such introducing more laws to cover the gaps, also introducing stronger penalties, while keeping all stakeholders informed of the liabilities of criminal acts related information systems, Management support to reinforce policies and punishment of the violators is also necessary.

Ethics researchers in general recommend the dissemination of the formal code of ethics to all employees and stakeholders to guide and help all parties develop a better ethics decision making process within the organization. (Nixon, Wiley and West, 1992; Lee and Yoshihara, 1997) In many organization employees relied on their personal judgment or their own informal code of ethical conduct, when an organization formally introduces a formal code of ethical conduct it often differs from what individuals believed to be an acceptable behavior from their understanding of their informal code of conduct. (Sims, 1998)

In other words organizations that have a formal code of ethical conduct which does not address Computer and Information Technology related Ethical issues have employees rely on their own personal informal code of ethical conduct in situations involving Computer and Information Technology related ethical issues which assists them in the decision making process in ethical situations related to Computer and Information Technology. Therefore it is the same case when it comes to introducing a new code of ethical conduct in an organization or an institution as mention earlier, when an organization introduces a formal Computer and Information Technology related code of ethical conduct it is often that is differs from what an individual believed to be an acceptable behavior from their understanding of their own informal code of ethical conduct in Computer and Information Technology related issues.

Although a formal Code of Ethical Conduct is essential in an institution or organization it is not enough to influence the personal code of ethical conduct of an individual. Here leaders, management, direct line managers, and supervisors must play their role in being the models of ethical behavior for the employees when facing situation that requires an ethical decision to be made. These models build a major part of the overall Informal Code of Ethical conduct and in addition to that all other employees within an organization form the organizational culture which influences the informal code of ethical conduct. (Genfan, 1987; Christensen 1992)

2.4 Ethical Behavior Models

2.4.1 Ethical Models Study and Review

The Social Cognitive Model and Ethical Self-Efficacy

The Social Cognitive Model (SCM) is one of the oldest and most used and agreed upon ethical models. (Feng-Yang 2001) External factors affect ethical decisions. This model links three simple factors together, those are supposed to govern ones ethical judgment and ethical values. The factors are **Person**, **Behavior**, and **Environment**. (Bandura, 1986)

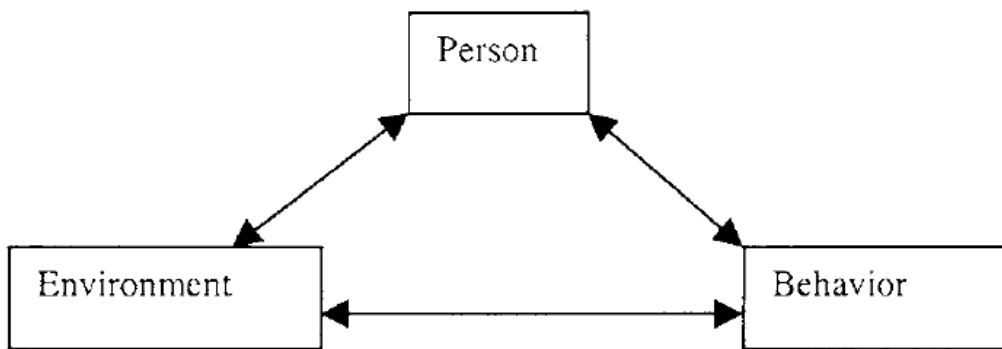
Personal factors are present in the form of affections and personal thoughts, these thoughts could be affected by personal experiences and beliefs, education, religion and mental state (Bendura 1986). Behavioral factors refer to patterns, goal settings, emotional states, strategies an actions taken towards such elements of behavioral factors. (Bendura 1986). Finally, Environmental factors are those such as social norms, peers encouragement, comparison with peers

In this framework, all three factors operate as interacting determinants that influence each other. (Bandura, 1986)

The simplicity of this model and the ease of implementation and testing of such a model make it more of a popular one.

The model states that a person's judgment over whether a practice is ethical or not depends on the all of the three above mentioned factors. For Example, let us consider

the acceptance of a bribe in two different locations. In UAE, an official employee is very unlikely to accept a bribe, moreover is very likely to inform the authorities of such an incident, which is not surprisingly often reported in media, and that is mainly due to the 'person' factor in which that individual official employee compares himself to peers whereby accepting a bribe is not common. Whereby if the same scenario happens, let's say, in Egypt that official employee is more like to accept it as peers very often do that in various levels of the chain of authority. Having said that; the other two factors will definitely have an effect on the decision taken or judgment made.



The social cognitive model and ethical self efficacy (Figure 1)

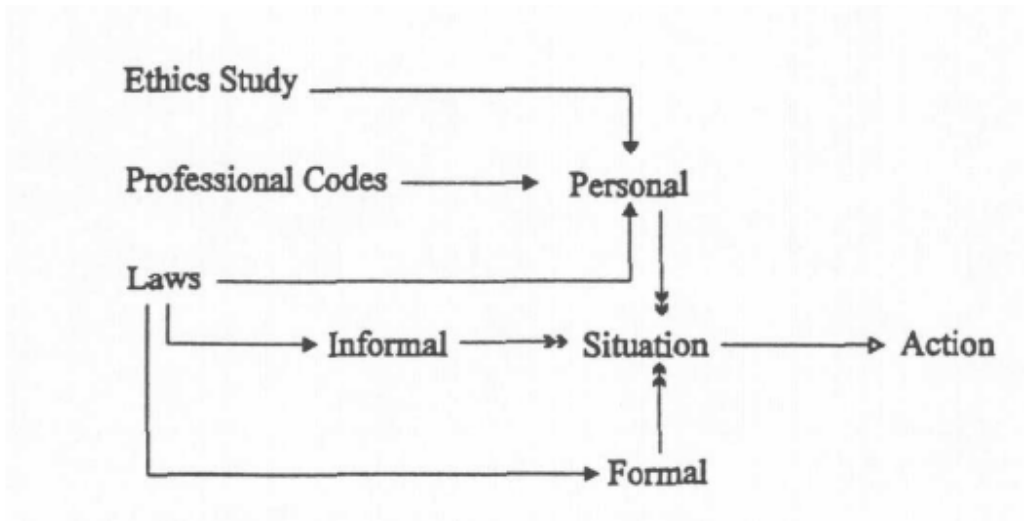
Computer Ethical decision making model

In setting up a model for Computer Ethics, this writer has surveyed the literature available covering ICT ethics and proposed models. Based on analysis of several proposed models, several common factors between these models were identified, and both the areas of overlap as well as the differences between these models were analyzed.

It is worth noting that in recent years, Information and Computer Technology ethics has become an area of increasing concern. The importance of further study stems from the significant societal effects of the abuse of Information and Computer technology

(Marshall, 1999; Straub & Nance, 1990) which is more and more becoming a common concern of both business and IT professionals (Cappel & Windsor, 1998.)

Henry and Pierce (1994) proposed a model for ethical decision making “based on one’s personal code of ethics, the informal code that exists in the workplace, and formal company codes.” This model is illustrated below in figure 2:



Computer ethical decision making model (Figure 2)

Pierce and Henry argue that people’s ethical decision making process is highly affected by the formal code of ethics and the informal code of ethics. (M. Pierce and J. Henry 1996) Pierce and Henry define formal or professional code of ethics as being the written code of conduct or written code of ethics that is formally adopted by an organizational body for example a company or a governmental institution and communicated to the stakeholders of that particular body (M. Pierce and J. Henry 1996). For example an employee working for ABC industries will definitely be influenced by ABC industries code of ethics, specially that this employee has been educated that wise and his or her employment contract requires him or her to do so. They then define informal code of Ethics as being that generally accepted between certain groups of people for instance a group of employees in a certain company or a group of people coming from the same background (M. Pierce and J. Henry 1996). Let’s go back to our ABC industries

employee for another example, even though the internal regulations at ABC Industries does not formally prohibit employees from speaking loud while at their desks, as long as it is informally agreed upon between staff, or because everyone at their desks tend to be quiet and polite, the employee at ABC Industries will find it improper to speak loud, and will more often than not refrain from speaking loud, and look unfavorably upon those who do otherwise; that is due to the informal code of conduct between that group of people.

According to M. Pierce and J. Henry, there is one more further and very important element or factor that affects the ethical decision making rational or ethical decision making process of an individual, and that is "Law". (M. Pierce and J. Henry 1996) Law is the overall governing body of all ethical decisions, thus law even supersedes the formal and informal code of conducts discussed above and thus is considered to be an indirect effect on the personal code of conduct.

This model places strong emphasis of the Ethical environment as a factor in ethical decision-making. The informal laws, norms and accepted practices are given equal billing with formal, written laws and the personality of the individual. It has been noted that peer-pressure, or the behavior expected from the individual, is a major and well studied cause of un-ethical decision making. Pressure from subordinates causes people to behave unethically (Wahn, 1993) and when in ethical doubt, the individual often bases their decision on the behavior and accepted norms of the group (Witkin & Goodenough, 1997.) Henry and Pierce, on this evidence, consider the informal code within a peer group a significant influence on ethical decision making.

The written, formal code of ethics in a professional environment is the second factor in this model. The practice of adopting a formal, written code of ethics, as noted in The Ethical Research Center's 1990 paper, *Creating a Workable Company Code*, has increased in significance and application. From only 40% of American companies adopting the practice in 1964 to 85% in 1987 (*Creating a Workable Company Code*, 1990.)

The reasons for adopting this practice however are not what they seem. While the written code of ethics purports to be a guideline for ethical behavior within the company, 78% of companies employing the practice had as a primary motivation for doing so increased legal protection, and 66% for increased public goodwill. (Creating a Workable Company Code, 1990.)

It can be inferred from these results that providing the company's employee with a workable guideline for ethical behavior is not generally primary motivation for adopting the practice (Henry & Pierce, 1994.) The practice is however beneficial, as these codes can provide clear guidance to the professional in an ethical dilemma.

Also under this proposed model, the study of Ethical Theory – either directly and deliberately or through exposure to various ethical theories and frameworks, is a significant factor in decision making. Ethics study, or perhaps more appropriately the exposure to ethical issues, effects the individual code of ethics indirectly but not insignificantly.

Ethical theories provide a construct by which the reasoning for decisions of right and wrong may be justified and internalized (Johnson, 1985) particularly when the decision is in conflict with the organization's informal code of ethical conduct, a also provide a framework for justifying such decisions (Henry & Pierce, 1994.)

This paper in which this model is presented also cites professional codes, provided by the Association for Computing Machinery (ACM) (Anderson, Johnson, Gotterbarn, & Perrolle, 1993) the Data Processing Managers Association (DPMA)(DPMA, 1989), the Institute of Electrical and Electronics Engineers-Computer Society (IEEE-CS)(IEEE, 1987), and the Institute for Certification of Computer Professionals (ICCP) as an example of professional codes of conduct. The paper also goes on to enumerate the common themes in a number of such professional codes as identified by Martin and Martin (1990) as: personal integrity, personal accountability for work, responsibility to employer, responsibility to the profession, privacy of information, conflict of interest,

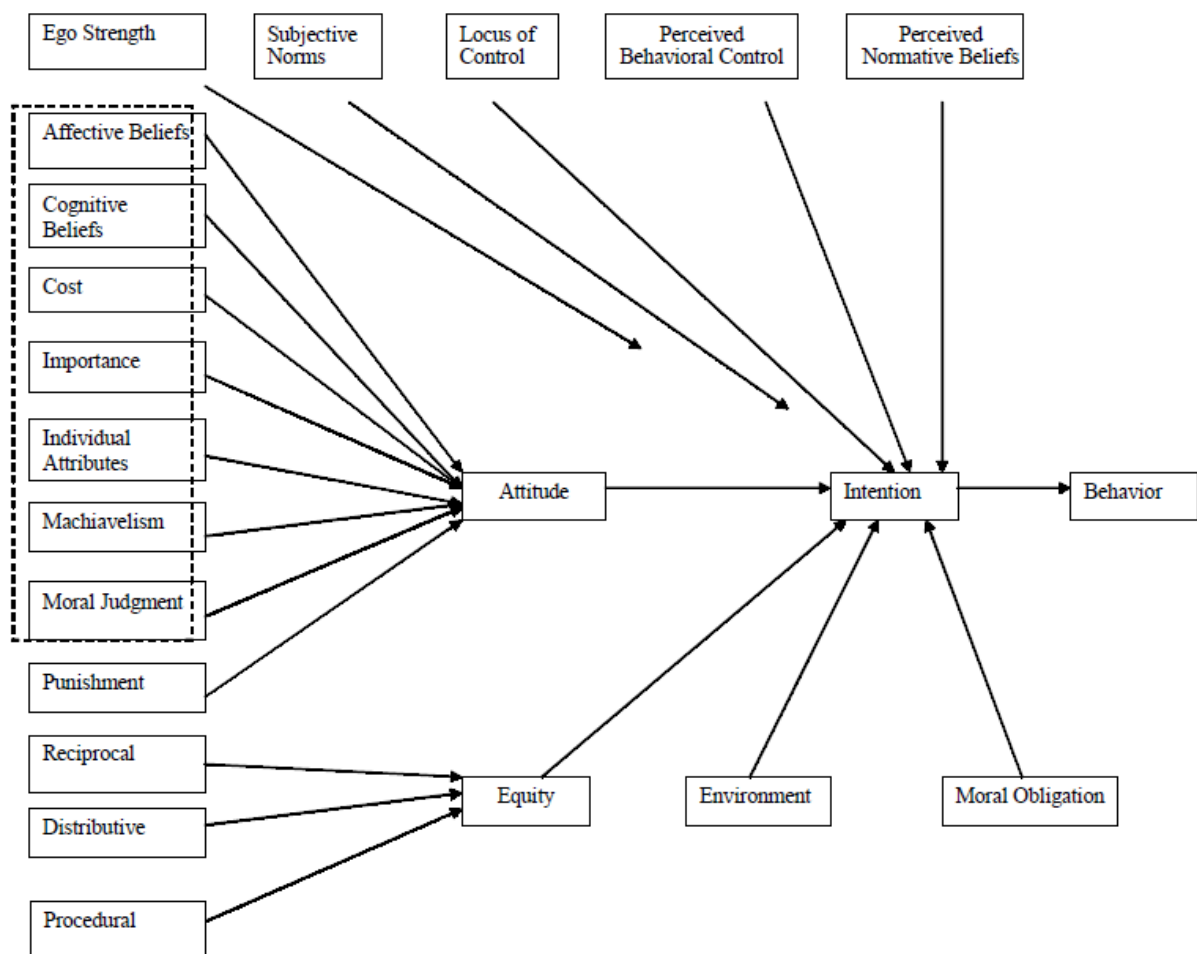
dignity of people, public safety, participation in professional societies, and increased public knowledge about technology.

While this model is laudable in its intention to provide a framework for understanding the process by which the individual arrives at an ethical decision, a more nuanced model may be desirable. The emphasis is clearly on extraneous, modifiable factors. The internal factors, thought processes, cultural and religious influences, and psychological processes are not clearly defined.

The model presented here is however clear-cut, practical, and very formal; this model is in this writer's opinion very strongly applicable to organizations desiring to understand professional ethics in order to influence them. Far from being simplistic, this model is realistic, pragmatic and workable for organizations, educators and legislators as it can be used to generate tangible changes in the ethical environment and ethical behavior within an organization or group.

General Ethical Behavior Model

Cronen and Douglas (2006) Propose a general ethical behavior model, illustrated below:



General Ethical behavior model (Figure 3)

This model is particularly noteworthy in that it adds the more tangible concepts that contribute to the less clearly defined mental constructs that lead to behavior.

The theory of Reasoned Action (TRA) which may be summarized as "the person's perception that most people who are important to him or her think he should or should not perform the behavior in question" (Ajzen and Fishbein, 1975) features along with the theory of Planned Behavior (TPB) which is a later extension, both asserting that "intention to perform a behavior is based on one's attitude toward the behavior, the social influence to perform/not perform the behavior (subjective norms), and one's control over performing such a behavior (perceived behavioral control) (Ajzen, 1991)"

Theory of Planned Behavior (TPB) is used to study on general behavior on of them is the study of Ethical behavior. In the TPB model the attitude construct is the most matching one to to ethics judgment when comparing it to perceived behavioral control, intention, subjective norms, or behavior. Attitude and ethical judgment were both used to explain intention or behavior, and the ethical behavior was explained using TPB. Banerjee, Cronan, & Jones, 1998; Dubinsky & Loken, 1989; Flannery & May, 2000; Randall & Gibson, 1991).

The proposed model above includes the following factors:

- Attitude and personal normative beliefs (TPB)
- moral judgment (Kohlberg, 1969; Rest, 1986),
- ego strength,
- locus of control,
- organizational climate (Trevino, 1986),
- environmental (Bommer et al., 1987) and
- individual attributes.
- Equity theory

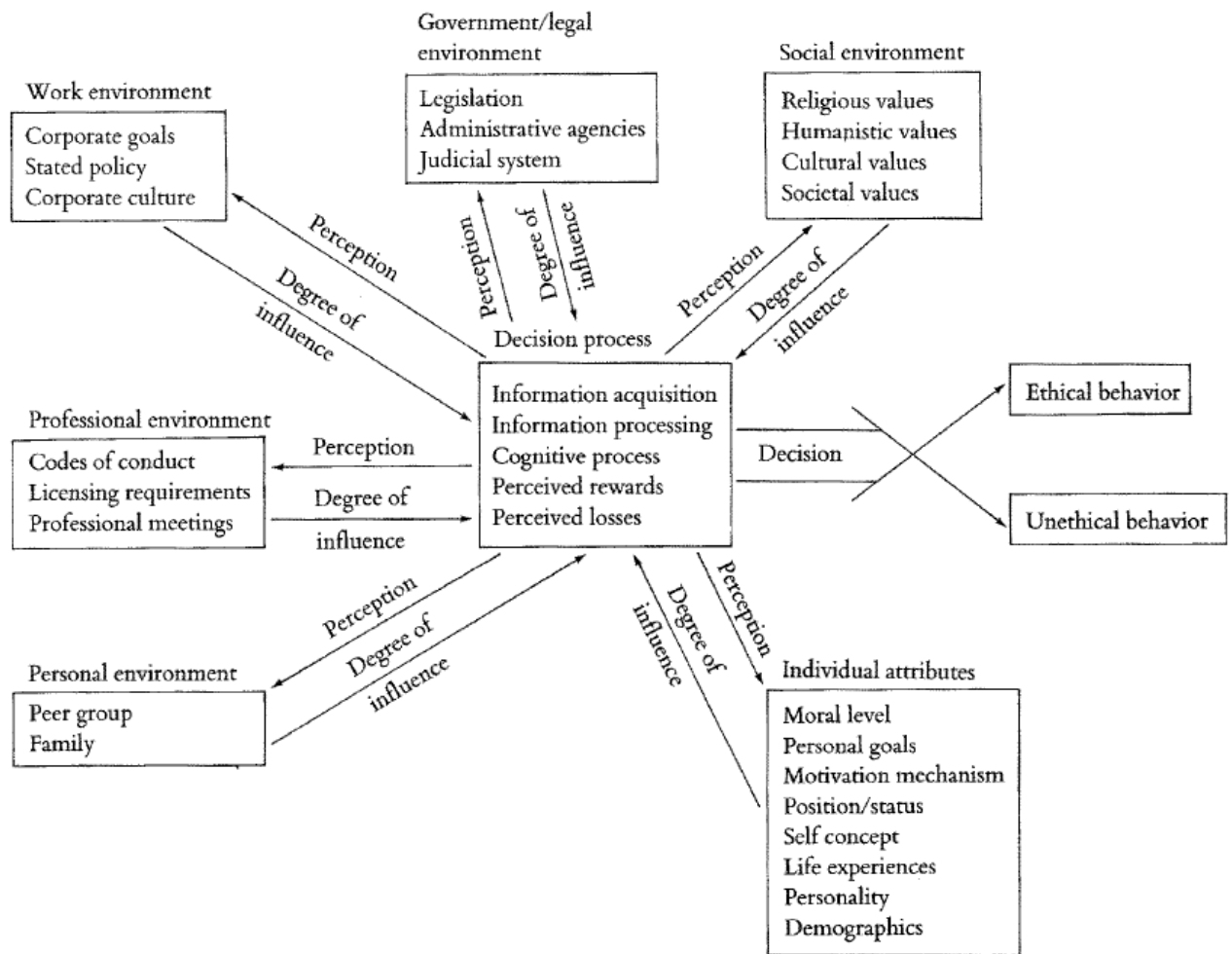
In this model the fairness of IT decision making is evaluated using the Equity theory (Adams, 1963, 1965; Walster, 1973, 1978), and it is suggested that the perception of non-fairness could lead to unethical behavior (Joshi, 1989; Glass & Wood, 1996)

In the field of social psychology much of the literature agrees that by far the most important and significant is that of attitude (Allport, 1935), which can be attested to by the sheer amount of research printed on this subject. Behavioral intention was found to be highly influenced by the attitude of an individual. Attitude was proven by research to be the best predictor of an individual's intention Trafimow and Finaly (1996).

Among the reasons for which attitude has been assigned a greater importance is the fact that attitude is subject to external influence such as persuasion. This directly implies the persuasion through the change of attitude can to to a change in intentions.

Behavioral Model of ethical and unethical decision making:

An interesting model for ethical and unethical behavior is presented below.



Behavioral Model of ethical and unethical decision making (Figure 4)

Containing the wide spectrum of ethical influences taken from the available literature, the authors propose the following categories: the individual's social environment, government and legal environment, professional environment, work environment, personal environment and individual attributes. (Bommer, Gratto, Gravander & Tuttle, 1987.) This approach adds the decision process as an intermediary process between the influencing factors and the decision taken.

The model is interesting in that it differentiates between the actual degree of influence of a factor and the perceived degree of influence, and in that it presents a binary outcome of either an ethical or an unethical decision.

While this model is laudable in its inclusivity and detail, it manages not to be too complex, and inclusive of both the practical, tangible influences and the nuances of the decision making process. The model does not specifically suggest what if an action is morally correct or incorrect but in fact it looks closely at the beliefs and attitudes of the decision makers concerning a certain action they took. The model investigates the reasons, causes, and factors that influence a decision maker to behave in a certain way either ethically or unethically. Unlike many of the factors some of the factors involve the moral reasoning of an individual the model also helps to identify these factors.

Next I will look at the suggested influencing factors of the model to understand its definitions.

Bommer defines in his paper the term social environment as the as “the set of humanistic, religious, cultural, or societal values” which are usually shared by group members in a certain organization. These groups can sometimes break into sub groups that an individual belongs to. The writer also suggest two influencing factors of the social environment, the first one is that evidence show that individuals with not stick the values when it comes to making ethical decisions at work unless these values are incorporated with the social values within the working environment. Second is the fact that some social values are not suitable to guide the ethical decision making of an individual within an organization.

The second factor is the Government and legal environment which is defined as the set of laws and values or policies that are enforced by a formal authority. Here the writer suggests that although a lot of individuals will refrain from any act that is formally prohibited by law some exceptions exist and these exceptions have factors that influence them to proceed with such action although punishment is involved and the

reasons sometimes can be because a law is not actively enforced for example or because of the complexity of the crime it is not strictly prosecuted.

The third factor is the Professional environment which is defined by the writer as “institutionalized professional context” where an individual works. Individuals in a professional environment see who see themselves as professional will try hard to introduce high ethical standards into their ethical decision making, such behavior is view as efforts from an individual to adhere his or her personal values.

Work environment is the fourth factor in the model and this factor suggests several sub factors that influences the decision making process of an individual these are: corporate goal, stated policy, and corporate culture. The writer mentions that these factors are in many cases supporting conflicting decisions in a certain situation.

The next two factors are the personal environment and the individual attributes. The personal environment involves peer groups related to the individual outside work and family. The individual factors of this model include moral level, personal goals, motivation mechanisms, status, self concept, life experiences, personality, and demographic variables.

Conclusion

Although the models studied in the above chapter are admirably suited to the specific application of understanding the ethical decision making process, and each model adopts a different view on the examination of this process, the models presented are too focused on the decision making process itself and are not particularly suited to gaining awareness of the ethical environment as a whole.

This paper elects to employ a broader model which, while lacking in depth of understanding, will provide a breadth of understanding suited to the scope of this paper. As discussed earlier, the aim is to assess the level of understanding and awareness of Ethics and computer ethics in both, private and public, sectors in the United Arab Emirates. Most, if not all, the models above will help shape the new model to be

adopted by this paper in a way or another. It is, however, crucial to maintain the simplicity of it in order to cater to the recipients, which might or might not be heavily knowledgeable about ethics. Part of the simplistic approach is to adopt a survey methodology for this model. Several questions will be asked, with a specific purpose behind each question, which will be discussed.

Before the candidate attends to the survey, he/she is briefed about ethics in general, and then guided through the questions. This is to assure that both we and the candidate are on the same page, plus engages the candidate to the survey in a serious manner. All questions have 5 choices to be answered: Totally agree, Partially Agree, Neutral, Partially Disagree, and Totally disagree. The method of analysis and computation of results will be discussed in later in section 3.1.2 under “Method of Analysis”

As part of the aims, the first question is to assess the understanding of ethics in as simple questions as possible:

- a. I know exactly what ‘Ethics’ mean.

This question, as simple as it looks, meets the exact requirement of assessment needed. In section 2.4.1, under the review of Ethical models, the SCM model had 3 elements, among which is “person” and that referred to the perception of ethics, and the environment surrounding. We totally agreed on that and believe that the first step of building a perception on ethics is to actually know what it is. Thus that question was the first in the newly formed model.

The second questions aim is to take the assessment a step further, and link it to the objective of this paper (comparison of ethical understanding and computer ethics practice between the public and private sector) and the question is:

- b. It is important to maintain ethical standards at work.

We are still at this part of the model, just discovering the perspective of the candidate on ethical standards, and its importance at the work environment.

The next three questions, which are:

- c. My employer has formally communicated what our ethical standards are
- d. My employer made us agree and sign on a specific code of conduct.
- c. Our 'Code of Conduct' is signed off by each and every employee

These three questions take the survey into a more detailed manner, to explore further the implementation and perhaps the employers' perspective of ethical standards. This touches upon Henry and Pierce (1994) model, which emphasizes the importance of professional codes, as an influencer on personal ethical manner and standards. The difference between the three is to identify organizations that simply post ethical standard on a website, or shelved in the HR department and the companies that have part of their employees (usually small employees) sign and agree, and finally identify the organizations that take ethical standards seriously in terms of codes and implementation on all staff.

The next phase shed the light on another important objective of this paper, which is the same study on computer ethics. This section constitutes of five questions that will be asked here and are tailored to address computer ethics specifically rather than general ethics.

The final phase of the model (survey) is made up of ten questions that will test the perception of computer ethics and computer ethical standards. These questions (all questions are stated in the next section) will test the candidate's thoughts over playing games at work, using the organizations computers for personal matter, chatting and such matters over ten questions. This section will help put together data to test employees in UAE, in both private and public sectors, and their perspective, thoughts, seriousness when it comes to computer ethics.

Overall, the model tailored for this paper is a survey of 3 sections, with 20 questions in total. This survey will provide us with data over ethical standards and computer ethics in the country, which will then be analyzed. Means of analysis will be discussed in the next section.

Chapter 3 | Implementation of the Model

3.1 Method

In order to better understand the ethical environment, general ethics awareness, ICT ethics awareness and IT ethics as they apply to IT professionals in the United Arab Emirates This study proposes to tackle the dearth of Information and studies specific to the UAE by gathering primary information through distributing a questionnaire.

This questionnaire will be distributed to employees of the private sector, and public sector within the United Arab Emirates and at different levels of responsibility within their respective organizations.

In addition to the questionnaire several candidates in both sectors will be interviewed with the same questions to gather more detailed answers which will be a reference to verify the validity of the answers from respondents.

The survey that they will attend to is split to 3 sections as discussed at the end of chapter 2. Phase 1, will have five questions addressing ethics in general, phase 2 will have 5 similar questions addressing computer ethics, and the phase 3 will have 10 questions assessing candidate computer ethics thoughts and perspective through various scenarios.

3.1.1 UAE Ethical Business Model

This paper have discussed so far what ethics stands for, and highlighted computer ethics and how it encounters our daily lives. And having discussed various computer ethics models, and some ethics measurement instruments, this paper will be introducing a new model (as illustrated end of chapter 2), partially based on the models studied, with the objectives to infer the following:

- The awareness of ethics in general and computer ethics in specific among both private and public sector employees in the UAE.
- The importance and application of computer ethics and the perceived value to the individuals surveyed
- The use and utilization of organizational tools pertaining to ethical behavior such as formal, written codes of ethics , and the extent to which address the particular issue of ICT ethics.
- The variance of the results of this study between the public and private and different levels of responsibility with in each sector as applies to perception and awareness of ICT ethics.

The model will test the above through a survey. This survey will include employees only, at various levels. The objective is to survey 200 candidates, out of which 100 work for governmental bodies, be it local governments at the different emirates, or federal government of the United Arab Emirates, and the other 100 work for private organizations be it international or only local. The split made that wise, in order to compare results from both to get an indication if, at all, there is a difference between private and public sector when it comes to ethics and computer ethics.

Questions of the survey give the candidates 5 options to choose and answer out of, and those are:

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Results of candidates pertaining to the public sector will be segregated from those pertaining to the private sector, so even though the survey allows anonymity in terms of name and employer, the candidate should specify the sector he or she belongs to at the header of the survey.

3.1.2 Model Questions

Below are details of each section of the survey:

Awareness of Ethics in General

Most of the models studied actually test the candidates for knowledge of ethics in general. What the new model will do more is to test the extent to which employers have formalized the subject 'Ethics' and whether there are a set of guidelines or a code in the organizations employees work for. This sections also tests whether the guidelines, if any, were addressed to all or certain people.

This section will ask the following questions:

A. I know exactly what 'Ethics' mean.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

B. It is important to maintain ethical standards at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

C. My Employer has formally communicated what our 'Ethical Standards' are.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

D. My Employer made us agree and sign on a specific 'Code of Conduct'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

E. Our 'Code of Conduct' is signed off by each and every employee

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Awareness of Computer ethics

Now that we have already identified the knowledge and awareness of Ethics in general, the study requires that we test the awareness and penetration of computer ethics specifically. And that will be done through the set of questions below. This section will also test if the agreed ethical standards were addressed to computer professionals only or all users of computers.

F. I am absolutely aware of what 'Computer Ethics' refer to

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

G. It is important to maintain computer ethical standards at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

H. Employer has formally communicated this 'Computer Ethical Standards'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

I. My Employer made us agree and sign on a 'Computer Code of Ethics'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

J. 'Computer Code of Ethics' was signed by all employees

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Perceptions about computer ethics

Having tested the above from the candidates, it is now important to understand the different perceptions that people regard ethics and computer ethics, and study whether any differences in perceptions exists between the private sector employees and the public sector employees.

The following questions were introduced to the questionnaire to meet these sections requirements.

K. Employees playing games at work, during work hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

L. Employees playing games at work, after working hours is not unethical

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

M. Employees using a company computer for personal use during working hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

N. Employees using a company computer for personal use after working hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

O. It is fine and ethical to 'Cyber Chat' while at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

P. It is fine and ethical to install company licensed programs on personal computers

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Q. It is fine and ethical to print, scan, copy personal documents at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

R. It is fine and ethical to use company e-mail for informal communication with friends outside work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

S. I think computer ethics is only relevant to IT professionals, and does not to others

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

T. Ethical codes and standards are not as important as they sound

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

The above survey was conducted on 200 candidates, half of them came from the private sector and the other half came from the public sector.

All of the questions above are agreed upon and are similar to questions used in the models studies in this paper. I have interviewed 10 candidates from both sectors, 5 from the public and the other 5 from the private sector and asked them the same questions in the interview to insure that they have understood the questions properly and are answering to the correct understanding, the results of these interviews will follow with the rest of the results.

To help avoid random answers from the candidates due to the questionnaire being long and not understandable, I have asked all the candidates interviewed the following questions.

- Do you think the questionnaire is long and boring? (10 out of 10 answered NO)

- Do you feel that this questionnaire has nothing to do with you? (9 out of 10 answered NO)
- Would you be interested in filling another similar questionnaire? (7 out of 10 answered YES)

From the positive answers to the questions above, I was confident to go ahead with disseminating the questionnaire to the intended candidates.

Method of Analysis:

To analyze the answers and in order to derive a numerical value indicating the ethical perception or environment, I have given the multiple choice answers in each question scores from 0 to 1 based on the type of the answer as follows in reference to the asked question:

For the questions from A to J the following weights were given to the multiple choice answers:

Weight	1	0.75	0.5	0.25	0
	1	2	3	4	5
	TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

For the questions from K to T the following weights were given to the multiple choice answers:

Weight	0	0.25	0.5	0.75	1
	1	2	3	4	5
	TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

The score in both of the tables above actually represent how ethical the choice is 0 being (unethical), 0.25 (partially unethical), 0.5 (Neutral), 0.75 (partially ethical), 1 (ethical).

For example to find the overall weight of question A when looking at the results from the of the responses of the public sector we do the following:

Weight	1	0.75	0.5	0.25	0
	8	17	4	22	49
	TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Here the responses from 100 candidates from the public sector for question 1 is 8 answered totally agree, 17 partially agree, 4 are neutral, 22 partially disagree and 49 totally disagree.

$$((8 \times 1) + (17 \times 0.75) + (4 \times 0.5) + (22 \times 0.25) + (49 \times 0)) / 100 = 0.28$$

The result of the overall weight of question A is 0.28 which is just above partially disagree. This answer can be considered as the answer from the public sector overall for question A.

In designing this questionnaire, the variance between the significance of a question in determining whether an individual showed ethical or unethical inclinations, or the state of the ethical environment they are in. The importance of each question in determining the ethical environment was taken into account, and suitable weights were derived. These weights intend to reflect the importance of the question, and are affected by multiplying the numerical score of the tabulated results by their respected weights and deriving a normalized average or weighted arithmetic mean of the results of the various questions.

For all of the above questions in the questionnaire the importance of each was ranked from 1 to 3,

The meaning of the ranks is as follows:

- 1 is low importance
- 2 is medium importance
- 3 is high importance

Below are the ranks of all questions:

Q. NO.	Question	Importance
A.	I know exactly what 'Ethics' mean.	3
B.	It is important to maintain ethical standards at work	3
C.	My Employer has formally communicated what our 'Ethical Standards' are.	2
D.	My Employer made us agree and sign on a specific 'Code of Conduct'	3
E.	Our 'Code of Conduct' is signed off by each and every employee	2
F.	I am absolutely aware of what 'Computer Ethics' refer to	3
G.	It is important to maintain computer ethical standards at work	2
H.	Employer has formally communicated this 'Computer Ethical Standards'	2
I.	My Employer made us agree and sign on a 'Computer Code of Ethics'	3
J.	'Computer Code of Ethics' was signed by all employees	1
K.	Employees playing games at work, during work hours is not unethical.	2
L.	Employees playing games at work, after working hours is not unethical	1
M.	Employees using a company computer for personal use during working hours is not unethical.	1
N.	Employees using a company computer for personal use after working hours is not unethical.	1
O.	It is fine and ethical to 'Cyber Chat' while at work	1
P.	It is fine and ethical to install company licensed programs on personal computers	1
Q.	It is fine and ethical to install company licensed programs on personal computers	2
R.	It is fine and ethical to use company e-mail for informal communication with friends outside work	1
S.	I think computer ethics is only relevant to IT professionals, and not everyone	2
T.	Ethical codes and standards are not as important as they sound	1

Table 1 (Importance ranking of the questions)

To derive overall scores for both the public and the privates sectors, I have chosen to derive the weighted arithmetic mean of each sector and will use the importance ranking above to do so.

I will first multiply the scored of all questions with their corresponding ranking as follows:

The results for the public sector

QUESTION NUMBER	QUESTION RANKING	PUBLIC SECTOR	MULTIPLIED
A	3	0.2825	0.8475
B	3	0.3475	1.0425
C	2	0.1925	0.385
D	3	0.0825	0.2475
E	2	0.1125	0.225
F	3	0.2525	0.7575
G	2	0.4075	0.815
H	2	0.2375	0.475
I	3	0.175	0.525
J	1	0.17	0.17
K	2	0.44	0.88
L	1	0.3125	0.3125
M	1	0.3825	0.3825
N	1	0.395	0.395
O	1	0.33	0.33
P	1	0.4425	0.4425
Q	2	0.2175	0.435
R	1	0.34	0.34
S	2	0.4825	0.965
T	1	0.5875	0.5875
		37	10.56

Table 2 (Public sector scores for each question)

$$E_i = 10.56/37 = 0.29$$

The general ethical index of the public sector is 0.29.

The results for the private sector

QUESTION NUMBER	QUESTION RANKING	PRIVATE SECTOR	Multiplied
A	3	0.77	2.31
B	3	0.76	2.27
C	2	0.55	1.10
D	3	0.53	1.58
E	2	0.32	0.63
F	3	0.60	1.81
G	2	0.65	1.31
H	2	0.47	0.94
I	3	0.42	1.25
J	1	0.18	0.18
K	2	0.61	1.23
L	1	0.55	0.55
M	1	0.59	0.59
N	1	0.42	0.42
O	1	0.84	0.84
P	1	0.51	0.51
Q	2	0.71	1.42
R	1	0.68	0.68
S	2	0.63	1.27
T	1	0.53	0.53
		37	21.39

Table 3 (Private sector scores for each question)

$$E_i = 21.39/37 = 0.58$$

The general ethical index of the private sector is 0.58.

Chapter 4 | Recommendations and Conclusions

4.1 Introduction

The questionnaire was disseminated to 200 candidates, 100 from the public sector and 100 from the private sector. The respondents' results were tabulated and scored, and the results have been analyzed and studied to explore the implied strengths, weaknesses, and areas of concern as raised by the survey.

This analysis presented in this chapter will explain therefore the significance of each of the questions in the survey, examining the answers with reference to it, and will also compare and contrast the results of the survey between the private and public sector respondents.

4.2 Results & Analysis

This survey covered a broad cross-section of the U.A.E's working population as indicated by the tables of attributes of the respondents as shown below.

<i>Educational level in the public and private sector</i>		
Educational Level	Public sector %	Private sector %
Bellow High School	1	0
High School	17	3
Undergraduate	80	89
Graduate	2	8
Professional Certifications	0	0

<i>Gender in the public and private sector</i>			
Gender	Public sector %	Private sector %	
Male	63	79	
Female	37	21	

<i>Age distribution in the public and private sector</i>			
AGE	Public sector %	Private sector %	
Below 20	9	1	
20 to 30	71	68	
30 to 40	12	21	
40 to 50	7	10	
Above 50	1	0	

A comparison of the results between scores of the public sector and private sector answers:

QUESTION NUMBER	PUBLIC SECTOR	PRIVATE SECTOR	DIFFERENCE
A	0.28	0.77	0.49
B	0.35	0.76	0.41
C	0.19	0.55	0.36
D	0.08	0.53	0.45
E	0.11	0.32	0.20
F	0.25	0.60	0.35
G	0.32	0.65	0.25
H	0.19	0.47	0.23
I	0.08	0.42	0.24
J	0.04	0.18	0.01
K	0.44	0.61	0.17
L	0.31	0.55	0.24
M	0.38	0.59	0.21
N	0.40	0.42	0.03
O	0.33	0.84	0.51
P	0.44	0.51	0.07
Q	0.22	0.71	0.49
R	0.34	0.68	0.34
S	0.48	0.63	0.15
T	0.59	0.53	-0.06

Table 4 (Public and Private sectors scores for each question and the difference)

A. I know exactly what 'Ethics' mean.

B. It is important to maintain ethical standards at work

Designed to gage the individual's perception of their own awareness of ethics, the results of the first question (A) shows a big differences between public and private sector employees with the private sector scoring higher. This, coupled with the results of the second question (B) which is designed to measure the perceived importance of ethical practices indicates that the public sector in the UAE has a less developed ethical environment in than the private sector. It is important to have short pause at this result for a second. If anything, it evidences that staff of the private sector and more aware and knowledgeable of what ethics and ethical standards are. Thus this makes them more likely to adapt and implement such standards in comparison to the public sector. It is therefore necessary to add to our recommendations, a more sophisticated approach in educating the public sector staff and introducing them to ethics. It is especially important before implementing ethical codes; otherwise it will definitely cause resistance and tension.

Although these questions are very broad they serve to indicate the general perception of the work environment and provide a useful light by which to view the results of subsequent questions.

C. My Employer has formally communicated what our 'Ethical Standards' are.

D. My Employer made us agree and sign on a specific 'Code of Conduct'

E. Our 'Code of Conduct' is signed off by each and every employee

The third question [C] received a score of 0.55 in the private sector and 0.19 in the public sector indicating in both cases that ethical expectations are not as clearly communicated as they should be furthermore this again shows significant divergence between both sectors with the public sector much lower. This means that not only there

is a gap in “ethics” understanding and acceptance between the public and private sector as indicated in the first section, but even the implementation and adoption of formal ethical standards or codes in the private sector in the United Arab Emirates is considered limited and requires more attention and investment.

Furthermore the results of question [D] also exhibit the same trend and indicate that one factor in the general lack of ethical awareness is the lack of formalized rules and guidelines for ethical behavior, or in other words lack of a formalized code of ethical conduct. In question [E] which measures the enforcement of these codes shows a score of 0.11 in the public sector and 0.32 in the private sector which indicates that although the codes are present sometimes the enforcement is lacking and the execution is weak. As huge as this subject is, and as important as the international community sees ethics, it seems that we in the United Arab Emirates are still not doing quite enough towards it. It is evident that the private sector is by far ahead of the public sector. Yet, both are not yet touching the final line of “wide acceptance and implementation of ethical standard”

F. I am absolutely aware of what ‘Computer Ethics’ refer to

Much like question [A] this question attempts to gauge the personal perception of computer ethics in both the public and private sector in the United Arab Emirates. The results calculated indicate that the awareness of computer ethics is lower than the awareness of ethics in general. The results also shows a large difference between the public and private sectors, the recorded score of the private sector is 0.60 and the score of the public sector is 0.25, this indicates that the public sector in the U.A.E. has a less developed computer ethics environment than the private sector.

This information tells us that it becomes even more critical when it comes to computer ethics, as the knowledge and general awareness is less in comparison to ethics in general. We say this is critical as the IT industry in general in UAE is pretty advanced, moreover, companies and public sector entities are heavily dependent on IT in all fields. It is critical with all the weight the IT industry has, to have very little, if anything at all, awareness of what computer ethics are, what computer ethical standards can be

implemented and what should be implemented. This is another factor that will definitely feed into our recommendation section.

G. It is important to maintain computer ethical standards at work

Question [G] aims to measure the perceived importance of computer ethics in the work environment, much like question [B] which aims to perceive the importance of ethics in general. The results of this question indicates a lower awareness of computer ethics in the private sector compared to general ethical awareness, and the same goes for the public sector where the results showed a lower score in comparison to the scores of the public sector in the awareness of ethics in general.

This result is not at all surprising having gone through the results above. As awareness of computer ethics is very low in the first place, even fewer people will think it is actually important at work place. It is important to highlight that this is only a reflection of the candidates' perception, and this paper does not by any mean underestimate or undervalue the importance of computer ethics at the work place, whether it is private or public.

H. Employer has formally communicated this 'Computer Ethical Standards'

This question aims to discover to which measure to what degree the guidelines for acceptable and unacceptable use have been communicated. Private sector employees surveyed returned a score of 0.47, and public sector employees surveyed returned a score of 0.19. The same pattern of the public sector scoring lower is reflected here also.

In other words, part of the blame of the very limited awareness between staff of computer ethics, is to be taken by the employers themselves, as very little have actually any written or agreed upon ethical standards when it comes to IT and related items.

I. My Employer made us agree and sign on a 'Computer Code of Ethics'

Building upon the values measured by question [H], this question measures the extent to which the Computer Code of Ethics or the guidelines for acceptable and unacceptable computer use has been formalized. Results gathered for the private sector show 0.47, and for the public sector 0.08, indicating that the practice is not generally adopted in the public sector, and only partially adopted in the private sector. Again, the number shows even fewer companies formalizing their computer ethics standards, if they any in the first place.

J. 'Computer Code of Ethics' was signed by all employees

This question, gauging perceived equality and strength of enforcement of the code of ethics returned low scores for both the private sector (0.18) and the public sector (0.04). This again shows the lack of faith of employees in the measures taken, and the perceived lack of fairness in the enforcement of ethical guidelines. The trend continues, and the numbers of companies going to the extent of having staff agree and sign on the standards is even further less.

K. Employees playing games at work, during work hours is not unethical.

L. Employees playing games at work, after working hours is not unethical

M. Employees using a company computer for personal use during working hours is not unethical.

N. Employees using a company computer for personal use after working hours is not unethical.

O. It is fine and ethical to 'Cyber Chat' while at work

The above questions are designed to measure the ethical perceptions related to working time and company equipment. The results are consistently lower for the public sector than the private sector, with the differences between personal or entertainment use during and after working hours not being very marked in either sector. This may be

attributed to the fact that no loss of property rights can be considered to occur due to this use. It is worth noting however that the use of instant messaging and chat which is strongly discouraged by many IT departments seems to be viewed as more unethical in the private sector.

Overall, as the private sector's awareness of ethics and computer ethics was stronger, and as more private companies had written or at least agreed upon ethical standards, more staff from the private sector than public found the above actions to be unethical.

P. It is fine and ethical to install company licensed programs on personal computers

Q. It is fine and ethical to print, scan, copy personal documents at work

The questions above deal with questions of property and ownership, as they represent a tangible cost to the company or an opportunity cost to the developer of the software. The results for the public sector show a higher respect for intellectual property with a score of 0.44 than for tangible property with a score of 0.22, perhaps because of the difference in value where the cost of printing a document is much lower than the price of software licenses. The scores for the private sector however show a higher respect for tangible property at 0.71 than for intellectual property, which with a score of 0.51 still scored higher than in the public sector; this could be attributed to the perceived detriment where economy in the use of printing services is better enforced.

R. It is fine and ethical for the company to monitor employees' computers without telling them

This question aims to gauge the perception of the employee's expectation of privacy. Public sector employees replied with answers that, in the aggregate, showed a lower expectation of privacy at 0.34, while private sector employees scored higher at 0.68. While it is accepted practice to monitor employee activities, the law in many countries states that employees must be informed and made conscious of this fact.

The surprising element is that many of those who found it normal to use work computers for non work related items, or use of computer software personally just

acceptable, turned completely when it came to being monitored and thought this was not the right of the company, and that was absolutely unethical.

S. I think computer ethics is only relevant to IT professionals, and not everyone

This question aims to address issues of personal responsibility among the UAE workforce, where employees in the public sector scored 0.48 compared to private sector employees who scored 0.63. This shows more feeling of responsibility, or perhaps culpability, in private sector staff.

T. Ethical codes and standards are not as important as they sound

This final question aims to measure the perceived importance to individuals surveyed of the general field of computer ethics and how it has been presented to them. Both public sector and private sector employees were slightly positive at 0.59 and 0.53 respectively, with the public sector scoring slightly better.

The results of this survey and the interviews performed both show a marked difference between the scores recorded for the private sector and those recorded for the public sector, with both sectors showing medium to low scores when it comes to the awareness, knowledge, and valorization of computer ethics. The results show that the public at large, as represented by the sample surveyed, could be better and ideally must be better.

4.2.1 Results of the interviews

To further approach the goals and objectives of this paper several individuals were interviewed from the public and private sector to have a clear view of what the attendants understanding and make sure that the questions are clearly understood and

not misinterpreted. I have also asked the candidates several general questions regarding the questionnaire and its subject and mentioned earlier. Following are the questions:

- Do you think the questionnaire is long and boring? (10 out of 10 answered NO)
- Do you feel that this questionnaire has nothing to do with you? (9 out of 10 answered NO)
- Would you be interested in filling another similar questionnaire? (7 out of 10 answered YES)

These questions were asked to candidates that were interviewed who were ten, five of them from the public sector and the other five from the private sector. The purpose of the questions above is to understand how the candidates will perceive the questionnaire.

In the first question I am trying to make sure that the questionnaire is not long to avoid having candidates fill in the answers randomly just for the sake of finishing it. All of the interviewed candidates found the questionnaire to be simple and showed interest in it.

The second question aims to find out how relevant do the candidates see the questionnaire to them. Nine out of them answered no to it being not relevant which shows that the candidates believe that the questions are related to their day to day activities and that they can relate some of the questions if not all to actual situations in their working environment.

The third question was general to whether the candidate would be willing to answer another similar questionnaire covering the same subject again. This is a general question that complements the first two to understand the general interest in the subject and understand the willingness of the candidate to read and understand the questions before answering them. Seven out of ten candidates showed the interest in answering another similar questionnaire in the future.

All ten candidate where separately interviewed to insure that no external factors influences the way they answer the questions. All candidates were given a printed copy of the same questionnaire and where given the chance to go through it before I interviewed them.

I went through that same questions and asked them each question and after getting there answer I asked them for the reasons behind their answer. For example in question one the questionnaire I asked each candidate to explain to explain to be what is ethics to understand that what they think they know is actually correct or close to being correct.

Similar to question one I went through all of the questions and asked the candidate to elaborate on the reasons behind the answers. The objective here is to measure the suitability of the questions for the chosen sample of candidates in the public and private sector.

After completing these interviews, I was confident that the questions are clear and suitable to be disseminated to the public and private sector.

Apart from these interviews, several other interview where conducted with professionals in the public and private sector, for instance an interview with an individual who is heading the risk management department in an organization the private sector in Dubai indicated the lack of transparent communication with employees regarding the code of ethical conduct when it is related to computer use. The individual suggested that the lack of management support is the main reason behind the lack of attention to this subject.

The light was shed on the necessity of management support earlier in this paper, and the importance of proper communication to all stake holders. When asked on what are the steps taken to improve this, it was mentioned that the Risk management department is preparing separate information security policy which is intended to communicate the acceptable use of Information Technology and Information in general.

Another interview took place with an individual in the human resources department in a government entity; the entity did not have a department to look after risk or information security. The individual indicated that the entity does not have a code of ethical conduct and that they do not intend to have one since the government of Dubai has one. When asked whether the code of ethical conduct of the government of Dubai is communicated within the entity, the answer was no.

This demonstrates again the lack of communication of the code of conduct. After reviewing the code of conduct of the government of Dubai the code was also generic and did not cover Information and Computer Technology related matters.

An interview with an information security engineer in a telecom company in Dubai showed that they have a code of ethical conduct and an Information Security policy. The organization had all employees sign and agree to comply with it. It is noteworthy that a lot of the employees still do not follow the information security policy properly as indicated by the engineer. To further understand the environment several employees from different departments were interviewed, all of them commented on the information security as being very long (20 pages) and they did not understand a lot of the words in it.

The above mentioned only serves to reaffirm the importance of a clear well communicated written code of conduct that address in a brief and clearly understandable fashion the most important point in information ethics or code of conduct.

4.3 Recommendations for the organizations

The recommendation to the public and private sector in the U.A.E. is to form a code of ethical conduct that covers both general forms of accepted ethical behavior and Information technology related ethical codes.

Commitment to the Codes of Ethical conduct is necessary, therefore organizations should insure that the codes are properly communicated and reasons behind its guidelines are clearly explained to all stake holders. Organizations employees should sign and agree to comply with the code of ethical conduct. Organizations should also insure that they are able to apply the guidelines and enforce it if necessary with means of censure up to and including termination.

Management are the role models of behavior to all employees therefore management should before anyone else be in compliance with the code of ethical conduct with no exceptions. Employees tend to believe that if an action is not mentioned it is not prohibited, therefore it is highly recommended to make the code of ethical conduct as comprehensive and clear as possible.

Although it is not mandatory, it is also highly recommended to have a separate code of ethical conduct that addresses Information and Computer Technology ethical related issues sometime referred to as Information Security Policy, all employees should sign that they have read, agreed, and will comply with the Information Security Policy in order to be able to use the organizations resources.

Ethics and computer ethics is an important issue confronting our today's societies; it is complex and touched many behavioral factors. This research touched a small part of all of what ethics is about, therefore further research into this subject is essential and recommended.

In the research it was noticed that a lot of the Information Technology Departments do distribute a computer acceptable use policy or similar even if the organization does not have a general code of ethical conduct, our recommendation is to

4.4 Summary & Conclusion

This paper covers a research on ethics and ethical behavior in general and computer ethics in specific. The study was conducted in the United Arab Emirates and covered the public and private sectors of its economy.

The study of Ethics is broad, very old, and has been a field of inquiry of mankind. Ethics is a set of rules or principles that governs one's moral decision making process (Johnson, 1985). Oxford English dictionary defines ethics as the "branch of knowledge concerned with moral principles governing or influencing personal conduct. In general ethics addresses the right and wrong of human relationship and actions.

Computer ethics is defined as the ethical situation where a computer is involved (Moor, 1985). The technological advancement has been in an accelerating growth for a long time and same goes to the ethical situation related to computers, the more complex technology becomes the more complex and unique computer related ethical issues become.

Several ethical behavior models were studied and understood, but as there have not been many studies on the matter of computer ethics in the United Arab Emirates this paper has elected to utilize a more simplified model as being more appropriate for the scope of this inquiry.

The research will study the ethical behavior in general and computer ethics in the public and private sectors in the UAE, the objectives of the model used in this research are to understand the following:

- The awareness of ethics in general and computer ethics in specific among both private and public sector employees in the UAE.
- The importance and application of computer ethics and the perceived value to the individuals surveyed

- The use and utilization of organizational tools pertaining to ethical behavior such as formal, written codes of ethics , and the extent to which address the particular issue of ICT ethics.
- The variance of the results of this study between the public and private and different levels of responsibility with in each sector as applies to perception and awareness of ICT ethics.

A questionnaire was disseminated among 200 candidates split equally between the public and the private sectors, ten candidates where interviewed to better understand the motivation behind their answers.

Commitment to the Codes of Ethical conduct is necessary, organizations should insure that the codes are properly communicated and reasons behind its guidelines is clearly explained to other organizations and individuals. Organizations should also insure that they are able to apply the guidelines and enforce it if necessary by incorporating it into their own policy.

Appendix 1 | Results of the survey from the public sector

A. I know exactly what 'Ethics' mean.

8	17	4	22	49
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

B. It is important to maintain ethical standards at work

7	18	21	15	39
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

C. My Employer has formally communicated what our 'Ethical Standards' are.

1	2	12	43	42
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

D. My Employer made us agree and sign on a specific 'Code of Conduct'

1	2	4	15	78
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

E. Our 'Code of Conduct' is signed off by each and every employee

0	1	7	28	64
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

F. I am absolutely aware of what 'Computer Ethics' refer to

5	9	6	42	38
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

G. It is important to maintain computer ethical standards at work

5	8	22	39	26
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

H. Employer has formally communicated this 'Computer Ethical Standards'

1	0	8	54	37
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

I. My Employer made us agree and sign on a 'Computer Code of Ethics'

0	1	3	24	72
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

J. 'Computer Code of Ethics' was signed by all employees

0	1	1	12	86
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

K. Employees playing games at work, during work hours is not unethical.

16	34	19	20	11
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

L. Employees playing games at work, after working hours is not unethical

31	39	14	6	10
TOTALLY	PARTIALLY	NEUTRAL	PARTIALLY	TOTALLY

AGREE	AGREE		DISAGREE	DISAGREE
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M. Employees using a company computer for personal use during working hours is not unethical.

29	30	12	17	12
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

N. Employees using a company computer for personal use after working hours is not unethical.

24	38	9	14	15
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

O. It is fine and ethical to 'Cyber Chat' while at work

28	39	16	7	10
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

P. It is fine and ethical to install company licensed programs on personal computers

12	25	45	10	8
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Q. It is fine and ethical to print, scan, copy personal documents at work

38	50	4	3	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

R. It is fine and ethical to use company e-mail for informal communication with friends outside work

29	38	12	10	11
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

AGREE	AGREE		DISAGREE	DISAGREE
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I think computer ethics is only relevant to IT professionals, and not
S. everyone

12	22	42	9	15
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

T. Ethical codes and standards are not as important as they sound

11	10	21	49	9
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Appendix 2 | Results of the survey from the privet sector

A. I know exactly what 'Ethics' mean.

38	34	26	2	0
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

B. It is important to maintain ethical standards at work

42	27	25	4	2
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

My Employer has formally communicated what our 'Ethical Standards'

C. are.

24	16	37	2	21
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

D. My Employer made us agree and sign on a specific 'Code of Conduct'

27	17	24	4	28
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

E. Our 'Code of Conduct' is signed off by each and every employee

22	10	4	0	64
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

F. I am absolutely aware of what 'Computer Ethics' refer to

22	23	30	24	1
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TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE
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G. It is important to maintain computer ethical standards at work

32	15	39	10	4
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

H. Employer has formally communicated this ‘Computer Ethical Standards’

20	6	39	11	24
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

I. My Employer made us agree and sign on a ‘Computer Code of Ethics’

12	20	29	1	38
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

J. ‘Computer Code of Ethics’ was signed by all employees

7	9	7	2	75
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

K. Employees playing games at work, during work hours is not unethical.

7	23	14	30	26
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

L. Employees playing games at work, after working hours is not unethical

13	27	3	42	15
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

M. Employees using a company computer for personal use during working

hours is not unethical.

16	16	10	33	25
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

N. Employees using a company computer for personal use after working hours is not unethical.

22	32	20	7	19
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

O. It is fine and ethical to 'Cyber Chat' while at work

9	13	35	29	41
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

P. It is fine and ethical to install company licensed programs on personal computers

12	29	20	20	19
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Q. It is fine and ethical to print, scan, copy personal documents at work

2	10	10	59	19
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

R. It is fine and ethical to use company e-mail for informal communication with friends outside work

8	12	9	42	29
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

S. I think computer ethics is only relevant to IT professionals, and not

everyone

7	9	40	12	32
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

T. Ethical codes and standards are not as important as they sound

13	26	22	15	24
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Appendix 3 | Questionnaire Sample

PLEASE DO NOT WRITE YOUR NAME ON THE PAPER

Introduction

This study aims derive a better understanding of the perception of ethics and ethical behavior in the corporate environment in the United Arab Emirates. The study will focus on Ethical behavior related to Information and Computer Technology (ICT). The study also aims to find how different organizations are addressing ethics with in the corporate environment.

Personal Information

Please answer the following questions by marking the boxes next to the answers that describes you best. The answers of these questions are necessary for the analysis of the results of this questionnaire.

Education Level	<input type="checkbox"/> Below High School	<input type="checkbox"/> High School	<input type="checkbox"/> Undergraduate
	<input type="checkbox"/> Graduate	<input type="checkbox"/> Professional Certification (ex: CISSP)	
Gender	<input type="checkbox"/> MALE	<input type="checkbox"/> FEMALE	
Age Group	<input type="checkbox"/> Below 20 years	<input type="checkbox"/> 20 to 30 years	<input type="checkbox"/> 30 to 40 years
	<input type="checkbox"/> 40 to 50 years	<input type="checkbox"/> Above 50 years	
Nationality	<input type="checkbox"/> Emarati	<input type="checkbox"/> Other _____	
Position	<input type="checkbox"/> IT Proffetional	<input type="checkbox"/> Managerial	<input type="checkbox"/> Non-managerial
	<input type="checkbox"/> IT Management		
Religion	_____		

A. I know exactly what 'Ethics' mean.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

B. It is important to maintain ethical standards at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

C. My Employer has formally communicated what our 'Ethical Standards' are.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

D. My Employer made us agree and sign on a specific 'Code of Conduct'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

E. Our 'Code of Conduct' is signed off by each and every employee

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

F. I am absolutely aware of what 'Computer Ethics' refer to

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

G. It is important to maintain computer ethical standards at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

H. Employer has formally communicated this 'Computer Ethical Standards'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

I. My Employer made us agree and sign on a 'Computer Code of Ethics'

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

J. 'Computer Code of Ethics' was signed by all employees

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

K. Employees playing games at work, during work hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

L. Employees playing games at work, after working hours is not

unethical

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

M. Employees using a company computer for personal use during working hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

N. Employees using a company computer for personal use after working hours is not unethical.

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

O. It is fine and ethical to 'Cyber Chat' while at work

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

P. It is fine and ethical to install company licensed programs on personal computers

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

Q. It is fine and ethical to print, scan, copy personal documents at work

1	2	3	4	5
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TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE
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R. It is fine and ethical for the company to monitor employees computers without telling them

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

S. I think computer ethics is only relevant to IT professionals, and not everyone

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

T. Ethical codes and standards are not as important as they sound

1	2	3	4	5
TOTALLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	TOTALLY DISAGREE

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