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DEVELOPING A SET OF SCENARIOS FOR ENHANCING STUDENT AWARENESS OF BUSINESS ETHICAL ISSUES

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Abstract:

This paper reports on a study of ethical issues as identified in the Information Systems literature. The review of the literature was conducted with the aim of identifying categories of ethical issues posed by computing related technologies. It uses the categories identified there to build a set of scenarios for use in the classroom with the objective of raising student awareness of those issues. The paper draws on previous work and previously developed scenarios, and the authors' classroom experience with those scenarios, to provide a new set related to the literature. The set is provided as part of this paper and colleagues are invited to use it as part of their teaching and for additional research. It is hoped that such use will continue the refinement of the scenarios.

Keywords: ethics, information technology, information systems, teaching ethics

I. INTRODUCTION

Information technology has become an inherent part of modern society. As businesses continue to grow larger and increasingly complex, their reliance on IT is amplified (Pemberton, 1998). This increasing dependence on information technology, (indeed many would argue that IT/IS is central to business operations) demands an understanding of ethics regarding its use. Many college students are graduating with misconceptions about ethical and unethical behavior in IT, and therefore carry ethical ambiguity into the workforce (Calluzo & Cante, 2004). By ensuring that students are, at the very least, introduced to the most common ethical categories of information technology, including: access, accuracy, intellectual property, piracy, and property, ethical information technology practices in business will come to be less ambiguous and therefore, more common.

This paper draws on earlier work published at IAIM by Niederman and Taylor (2010). In that paper, the authors presented a set of scenarios developed by an iterative process aimed at student understanding for use in classroom discussion and for evaluation by students. After conducting a review of the IS literature, this paper presents a set of similar scenarios more specifically aimed at covering the range of ethical issues defined there. The scenarios are attached as an appendix – they are not seen as final or ideal at present, but rather as part of an iterative process to further develop them. Each of the categories identified in the literature are considered from three perspectives – business, personal and community. Future research will determine the extent to which ethical values vary by perspective.

A brief word on the scenarios – to date, the authors have used the scenarios as primarily a classroom aid to promote discussion and awareness. Colleagues are invited to use the scenarios in the classroom and to collect data for further analysis: demographic, group v individual, differing perspectives, etc. In this way it is hoped to build a greater understanding of student view of ethical issues and provide an insight into how they might be better equipped to deal with such issues in the business world and in their professional and personal affairs.

II. BACKGROUND

Writing in 1986, in an opinion piece for MIS Quarterly, Richard Mason suggested there were four essential areas to be considered (Mason 1986). Privacy – what must be revealed and under what conditions and safeguards, what can be kept private? Accuracy – who is responsible for authenticity, fidelity and accuracy, who is accountable and how are errors overcome? Property – who owns information and what is a fair price for it, who owns the media channels and who should have access to them? Accessibility – what information should be obtainable and under what conditions and safeguards?

Mason's 1986 thoughts were prescient indeed. Many of the issues he raised there are with us today, and writ large. He predicted the growth of IT's capacity for surveillance, communication, storage, computation and retrieval and the threat inherent in the demand for more information for decision making. He predicted the frustrations and anguish that result from mis-information or inaccuracy in computer driven information systems. He raised concerns over intellectual property many years ahead of Napster and raised the question of access to (and payment for) information that had been previously available in public libraries.

A decade later, Mason (1995) followed up the use of information technology in society, suggesting it is creating a rather unique set of ethical issues that requires the making of new moral choices on the part of society and has spawned special implications for its members. Technology itself is not the only, nor

necessarily the most responsible, cause of these issues. All ethical questions arise initially out of human agency. Technology, due to its capability to augment mental and physical powers of human beings, does stand in the role of a co-conspirator. The hire of power-enhancing capabilities makes technology an inducer of sorts, a necessary but not sufficient underpinning to many of the ethical issues we face today.

In a follow-up to Mason's 1986 article, Conger, Loch, & Helft, (1995) sought to answer the questions: are these social issues empirically verifiable constructs and second, what consensus exists on the factors? A field survey of 79 business professionals and students identified 12 factors which were grouped into five clusters: ownership, access, motivation, responsibility and privacy. These constructs identified additional dimensions and complexity to extend Mason's definition of key ethical issues. The importance of separating the computer user who experiences the ethical dilemma from the stakeholder(s) who deal with the consequences of the dilemma was identified. Their study also demonstrated some consensus within the survey items. Consensus exists that it is unethical to profit from non-job, computer-related acts. Consensus also exists that personal use of company-owned information technology resources is acceptable. The other items show little consensus, identifying areas of necessary discussion within the computing professions to determine ethically consistent and appropriate computer uses. (Conger, Loch, & Helft, 1995).

Floridi & Sanders, (2002) provide a critical analysis of the debate on the foundations of computer ethics. Starting from a discussion of Moor's classic interpretation of the need for computer ethics caused by a policy and conceptual vacuum, five positions in the literature are identified and discussed: the "no resolution approach", (computer ethics can have no foundation); the professional approach, (computer ethics are solely professional ethics); the radical approach, (computer ethics deals with absolutely unique issues, in need of a unique approach); the conservative approach, (computer ethics is only a particular applied ethics, discussing new species of traditional moral issues); and the innovative approach, (theoretical computer ethics can expand the meta-ethical discourse with a substantially new perspective). In the course of the analysis, it is argued that, although computer ethics issues are not uncontroversially unique, they are sufficiently novel to render inadequate the adoption of standard macro-ethics, such as Utilitarianism and Deontologism, as the foundation of computer ethics and hence to prompt the search for a robust ethical theory. Information ethics is proposed for that theory, as the satisfactory foundation for computer ethics. Information ethics is characterized as a biologically unbiased extension of environmental ethics, based on the concepts of data-entity/infosphere/entropy rather than life/ecosystem/pain. In light of the discussion provided in this paper, it is suggested that computer ethics is worthy of independent study because it requires its own application specific knowledge and is capable of supporting a methodological foundation, information ethics.

In a wide ranging and perhaps somewhat more esoteric paper, Mingers & Walsham (2010) suggest ethics is important in the information systems field as illustrated by the direct effect of the Sarbanes-Oxley Act on the work of information systems professionals. They point to a substantial literature on ethical issues surrounding computing and information technology in the contemporary world, but note that much of this work is not published nor widely cited in the mainstream information systems literature. The purpose of their paper is a focus on Habermas's discourse ethics. Discourse ethics is different from other approaches to ethics as it is grounded in actual debates between those affected by decisions and proposals. Recognizing that the theory could be considered rather abstract, the paper discusses the need to pragmatize discourse ethics for the information systems field through, for example, the use of existing techniques such as soft systems methodology. In addition, the practical potential of the theory is illustrated through a discussion of its application to specific information systems topic areas including Web 2.0, open source software, the digital divide, and the UK biometric identity card scheme. They suggest ways in which the paper could be used in information systems research, teaching, and practice, highlighting in again an MISQ interest in this area.

There is little doubt that this is an area of concern to the IS community and to the wider business community. As we have already seen, students are entering the work-force ill-equipped to deal with these issues (Calluzo & Cante, 2004). The development of a range of scenarios to promote discussion and alleviate misunderstanding can help (and in the experience of the authors has helped) to address these issues. The authors believe that tying the scenarios to the ethical issues identified in the literature will strengthen their value and enable further research to be conducted both in the area of individual perspectives in regard to ethics and into ethics teaching practices.

III. METHODOLOGY

Research was conducted through electronic journal publications. It began with four articles deemed particularly relevant [Banerjee, Cronan, and Jones (1998), Calluzo & Cante, (2004), Niedermand and Taylor (2010) and Richardson, Courtney, and Haynes, (2006)]. Each article was reviewed to determine ethical information categories. Categories were identified by if the article referenced specific examples of ethical dilemmas in information technology, identified ethical categories in information technology, or if research on ethics in information technology was included. After review, each article's references were examined for further articles relevant to the study. This was supplemented by a further search of the mainstream IS literature. An article's relevance was determined by key words, which included: *computer*, *ethics*, *ethical*, *Information Age*, *information technology*, *information systems*, *software*, and *technology*.

Articles deemed relevant were then identified using the journal databases: Academic Source Complete, Business Source Complete, and Web of Science. Each article's abstract was reviewed to determine if its content would provide data for the study. Articles hypothesized to contain information relevant to the

study were then reviewed. The review's purpose and method was identical to that of the study's initial four articles. If the article provided such information, its references were then reviewed with the method used to examine the original four article's references. The articles considered to be relevant were then located using the academic journal databases stated previously. Their review was performed with the method used for all previous articles.

IV. RESULTS

Upon each article's review, the ethical categories included in the article were recorded. To determine the most common IT ethical categories, the categories recorded were examined and every category present was accounted for in a table. Category occurrences were then tallied and the five with the highest overall score were considered to be the most common ethical categories of IT. Figure 1 illustrates the top five categories and the corresponding articles in which they were located.

Figure 1

Information Technology Ethical Category Presence in Article

#	Access	Accuracy	Intellectual Property	Piracy	Privacy
Article 1	#	ö#	; #	ö#	ö#
Article 2	#	#	; #	ö#	ö#
Article 3	#	ö#	#	#	ö#
Article 4	ö#	ö#	; #	ö#	ö#
Article 5	ö#	ö#	; #	#	ö#
Article 6	#	ö#	; #	#	ö#
Article 7	#	#	#	#	#
Article 8	ö#	ö#	; #	ö#	ö#
Article 9	ö#	ö#	; #	#	ö#
Article 10	#	#	; #	ö#	ö#
Article 11	#	#	#	#	ö#
Article 12	ö#	ö#	; #	#	ö#
Article 13	ö#	#	; #	#	ö#
Article 14	#	#	; #	#	ö#
Article 15	#	#	#	ö#	ö#
Article 16	ö#	#	; #	#	ö#
Article 17	#	ö#	; #	ö#	ö#
Article 18	ö#	#	; #	#	ö#
Article 19	#	#	#	ö#	#
Article 20	#	#	; #	#	ö#

The results largely bear out the original Mason (1986) categories of Privacy, Accuracy, Property and Accessibility. The literature does suggest one variation – that of Piracy. It could be argued that this falls under Property, however the authors believe that taking into account the World Intellectual Property Organization ("What is Intellectual Property?") describing intellectual property as, "creations of the mind or intangible assets" with the ethical concern being property rights regarding intangible assets, of which information is the most common (De George, 2010) and the Laudon (1995) definition of piracy as unauthorized reproduction of works under copyright, a distinction is warranted.

Based on these results a set of scenarios was developed. They are attached as Appendix A. They differ somewhat in wording and focus from the Niederman and Taylor (2010) scenarios but in many cases they achieve a similar objective. It may well be that some of the Niederman and Taylor scenarios may work better in place of some of these. The Appendix A scenarios have been expanded slightly from the Niederman and Taylor ones to cover all five categories identified in the literature as outlined above and

the three perspectives of business, personal and community. The perspectives of personal and community are considered important as key areas to which the students can relate and then consider their responses to the business scenarios in the light of those to the other areas. The ubiquity and pervasiveness of IT in everyday life infers an increasing encounter with circumstances which intertwine across multiple areas of life. (business, personal, and/or community)

To date the scenarios have been field tested to ensure clarity, sense, understanding and lack of ambiguity.

V. CONCLUSION

The authors believe that the work on identifying ethical categories has provided a sound underpinning to the scenarios for classroom discussion, going some way to strengthening the already very useful Niederman and Taylor (2010) scenarios. Colleagues are welcome to use the scenarios and the authors are happy to collaborate on further research based on data collected from classroom use. It is hoped that further use and conference discussion will continue to refine the surveys and enhance the raising of business ethics relating to the use of IT in the minds of students.

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Appendix A

Ethics Exercise

This survey contains a number of scenarios addressing possible ethical dilemmas relating to the use of IS/IT. There is no absolute right or wrong answer. Demographic questions will help us understand whether your background affects your ethical behavior. We just want to understand your perceptions regarding those stated actions. Please read each scenario carefully and answer the survey honestly. Please complete the entire survey and answer all the questions. The survey is completely anonymous (WebCT only provides a list of those who have completed the survey – it is not linked to any data you input) so you should feel free to answer as you feel, not what you think we might want to hear.

Demographic Questions

D1. Degree:

D2. Year of Study (1/2/3/4):

D3. Age (round to nearest year):

D4. Gender (Male/Female):

D5. Citizenship(s) (e.g. US, China):

If you have multiple citizenships, state all.

D6. Race (circle one)   White   Black/African American   Asian/Asian American   Hispanic   Native American

D7. Religion: (e.g. Buddhist, Christian, Hindu, none if you have no dominant religion):

D8. Years of work experience (Tick one only):

☐ None

☐ Less than 6 months

☐ 6-12 months

☐ More than 1 year, but less than 3 years

☐ 3-5 Years

☐ More than 5 years

D9. Cadet or ROTC? (yes/No)

Please think through the next question carefully

D10. Generally speaking, rate (1 to 3) the TOP three **Candidate Ethical Principles** you can most relate to (1 for the one you can MOST relate to. This would be the principle you most often apply in your daily life).

☐ **Golden Rule** (Do unto others as you would have them do unto you)

☐ **Immanuel Kant's Categorical Imperative** (If an action is not right for everyone to take, it is not right for anyone)

☐ **Descartes' rule of change** (If an action cannot be taken repeatedly, it is not right to take at all)

☐ **Utilitarian Principle** (Take the action that achieves the higher or greater value)

☐ **Risk Aversion Principle** (Take the action that produces the least harm or least potential cost)

☐ **Ethical "no free lunch" rule** (Assume that virtually all tangible and intangible objects are owned by someone unless there is a specific declaration otherwise)

Please consider each of the following scenarios now.

1.   Your professor uploads all notes onto a database online. Because you have a laptop, you're able to access the notes 24/7, but many students don't have such easy accessibility. Distribution of notes this way is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

2.   Your company decides to replace its customer service phone system that is manned by knowledgeable staff and extensively used by a wide range of customers for one that is entirely online. This decision is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

3.   Your local library enforces a new rule that a copy of one's driver's license or other government issued photo ID must be on file for users to attain access to the library's computers. In most cases acquiring such ID requires a fee to be issued. This new rule is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

4.   You produce a new app for smart phones that you use for keeping track of when homework is due. You give it away to your classmates but do not tell them that it occasionally malfunctions and does not do what it is supposed to do. Your action is

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

5.   The software company that you work for has just released its newest software. The ads for this new software claim that your phone and computer are able to sync wirelessly if the software is installed. The company withholds from the ads that the new software also completely changes the interface of the prior operating system. The company's action is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

6.   You read a news article stating that the company that produces your cell phone was aware that the phone's design resulted in dropped calls, but decided to produce it anyway. The company's action is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

7.   You have purchased some software for a video game. You see a way to make the game run much faster and include several additional cool features. With a coding guru buddy, you open the underlying code and rewrite it. You post the new version to your website and charge $10 per hour for players to use this new version. Your action is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

8.   You have invested your life savings and taken a mortgage on your house to develop a new software application that helps hospitals manage the flow of patients through their emergency rooms during busy periods. Testing shows that service quality rises 15% with use of your software. A larger health information systems firm gets wind of the application and designs and builds one with identical features but in a different programming language (to be compatible with their larger ERP). The market for your system dries up completely and they offer you nothing in the way of compensation arguing that the idea is obvious and being in a different language they couldn't have stolen your code. The company's action is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

9.   Your local community club uses software to keep the accounts in order. An expensive license fee is required each year to use the software but you are able to make significant modifications to the old system by re-writing large segments of it which provides a great deal more functionality. You give your new system away to any club that wants it. Your action is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

10.   Your college is offering expensive word processing software to students for free. You already have it installed, but you have a friend that is in need of it. You get the access code allotted to you and give it to your friend so that they can install the software on their computer. This behavior is

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

11.   Your boss asks you to install new software on 200 computers, even though only 190 licenses were purchased. He tells you that at the time the company was unaware that 10 more licenses were needed, and that since buying in bulk requires purchasing 50 licenses or more, that the company would have to pay full price for the software. You decide to install the software on all 200 computers. This behavior is

	Acceptable		Somewhere between		Unacceptable
	5	4	3	2	1

On what additional circumstances might it depend?

_____

_____

12.   Company A recently released a cellular phone that is like none other on the market. Not soon after, Company B releases a phone almost identical to Company A's, but at a much cheaper price. You decide to purchase Company B's, even though the news recently reported that the Company B breached copyright laws. Your behavior is:

	Acceptable		Somewhere between		Unacceptable
	5	4	3	2	1

On what additional circumstances might it depend?

_____

_____

13.   A coworker has been in poor health recently. Though he has missed many days of work, he is not providing many details about his illness to his coworkers. You do know that he is receiving treatment at a local hospital where your wife /husband works. You would like to know more about the situation and ask your wife/husband to determine additional details. Making and filling this request is:

	Acceptable		Somewhere between		Unacceptable
	5	4	3	2	1

On what additional circumstances might it depend?

_____

_____

14.   Your company asks you to sign a document granting permission for your emails received on your personal email, which you can access at work, to be monitored. This request is:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

15.   Your local community club keeps records about all the people in your community, birthdays, food likes and dislikes, education, illnesses etc. In order to raise funds to build a community swimming pool the club executive proposes selling these records to local businesses so they can send community members targeted emails that may be of interest. This would be:

Acceptable   Somewhere between   Unacceptable

5   4   3   2   1

On what additional circumstances might it depend?

_____

_____

--- The End ---