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PROFESSIONAL ORGANIZATIONS AND CODES OF ETHICS: AWARENESS AND ATTITUDES AMONG UNDERGRADUATE IS STUDENTS

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Abstract

Gaining recognition of the IS field as a profession offers a number of potential benefits to individual IS practitioners, the IS profession, and the public. We suggest that any concerted effort to increase IS professionalism should begin by ensuring that students preparing for IS careers are: 1) educated about IS professional organizations, 2) aware of the ethical questions that face IS professionals, 3) informed about IS professional organizations' codes of ethics and professional behavior, and 4) accept the appropriateness of the code requirements. This research-in-progress addresses how IS undergraduate programs are achieving these objectives. The concept of professionalism is discussed in this paper, followed by a description of two key IS professional organizations in North America (ACM and CIPS) and their respective codes of ethics. Finally, research questions are presented and the planned research project is described.

Keywords: Professionalism, professional organizations, ethics, IS education

Introduction

The information systems profession has been debating the merits, obligations, and problems inherent with a move toward a strengthened professional identity. While there has been some disagreement over the exact who's, what's, and how's, there has been considerable agreement about the benefits of gaining professional status for qualified IS practitioners and the importance of encouraging high standards of ethical behavior among members of the IS profession.

Motivated by the general interest in how the IS community can facilitate more professionalism within its ranks, this research-in-progress will address two aspects of the professionalism issue: 1) student awareness of IS professional organizations and the importance of professional ethics, and 2) student knowledge of and attitudes toward the actual content of the codes of ethics and professional conduct promulgated by key IS professional organizations. When completed, this research will result in a detailed analysis of the key provisions of the codes of ethics from two key IS professional organizations in North America: the Association for Computing Machinery (ACM) and the Canadian Information Processing Society (CIPS). In addition, data from surveys of upper-level undergraduate IS students will be analyzed to determine how IS programs are educating students about the role of professional organizations and the professional standards these organizations represent.

In this research proposal, the issue of professionalism in the information systems field is introduced, followed by a brief description of the two professional organizations examined in this study, ACM and CIPS, and a comparison of their respective standards for ethical professional conduct. Finally, the plan for data collection and analysis is described.

The Information Systems Profession

Information systems can be defined as the hardware, software, networks, and procedures that function to collect, store, manipulate, or distribute electronic information. Information systems professionals, then, are those individuals who have specialized education related to information systems and are employed in responsible positions to study, design, develop, evaluate, or manage them. Information systems professionals may hold positions with many different titles and may be employed in private industry, education, government sectors.

Moor (1999) argues that the pervasiveness of information systems in modern society, coupled with the lack of public visibility of most computer applications, the potentially severe consequences associated with IS-related failures, and the opportunities for abuse by unethical IS practitioners, makes adopting professional standards essential for the IS field. Professionalism implies a commitment to overarching principles of competence, ethical conduct, self-regulation, and responsibility to public welfare by practitioners in a defined field.

Gaining recognition of the IS field as a profession offers a number of potential benefits to individual IS practitioners, the IS profession, and the public. Professionalism brings with it elevated status and respect to the profession and its members. Membership in a profession, for an individual, is a symbol of dedication to a chosen field, high standards of performance, and personal achievement. Professionalizing IS can also facilitate increased financial rewards for IS practitioners. Professional organizations are frequently allowed to exercise monopolistic controls, such as restricting entry to the profession via educational and experience requirements, setting minimum fees and prices, or prohibiting fee-based competition between members. Self-regulation by professional groups may also insulate the IS field from external intervention by governmental agencies, a risk which is felt strongly by many in the industry.

From a broader perspective, an expanded role of IS professional organizations may promote advancement of the discipline through enhanced collaboration between individuals and groups, improvements in educational programs, and more support for basic and applied research. Adopting professional standards and symbols may also help build public trust in IS-related services and products. Increased trust can lead to greater acceptance of IS innovations and more public support for IS-related initiatives. Finally, through its focus on the promotion and enforcement of standards and codes of conduct, professionalism may mitigate real societal threats associated with incompetent, unethical, or uncoordinated efforts of IS practitioners.

Gotterbarn (2002) states that the IS field, as it stands today, may not fit within the rigid parameters of a traditional profession, but he suggests that information systems is a good example of an "emerging profession", a field that is ripe for transition from "occupational" to "professional" status. Professional IS organizations are attempting to address the developmental needs of the IS field by encouraging rigorous and consistent educational and training criteria and, at the same time, facilitating higher standards of practitioner conduct by promulgating codes of ethics and professional behavior. In the next section, two IS professional organizations are introduced and their respective codes of professional conduct summarized.

Professional IS Organizations

Professional organizations dedicated to supporting and improving the efforts of practitioners in electronic information processing, systems development, and management date back over 50 years. The earliest such group, the Association for Computing Machinery (ACM), was established in 1947. Today, the association maintains over 75,000 members from more than 100 countries around the world. Members are drawn from all areas of industry, academia, and government. The association's stated goal is "to advance the sciences and arts of information processing, to promote the free interchange of information among specialists and the public, and to develop and maintain the integrity and competence of individuals in the field" (ACM, 2004a). The ACM works to achieve this goal by:

1. Providing training opportunities to professional members and support for IS students and university programs;
2. Producing over two dozen journals, magazines, and other publications;
3. Organizing conferences;
4. Supporting networking between professionals via special interest groups and local chapters; and
5. Representing the IS profession, liaisoning with other industry and profession associations, and acting as a resource authority to promote the IS profession with the public and public policy making agencies.

In response to the association's growing awareness that information systems have potentially powerful effects on public welfare, ACM introduced a "Code of Ethics and Professional Conduct" in 1992 to serve as a foundation for ethical decision-making by IS professionals. The Code, which consists of a set of fairly generalized moral imperatives, is operationalized through a set of guidelines. The guidelines are designed to assist members in understanding and applying the imperatives in

the Code. Membership in the association is voluntary, and those members who violate the Code face censure or expulsion from the association (ACM, 2004b).

The Canadian Information Processing Society (CIPS) was organized in 1958. Originally titled the Computing and Data Processing Society of Canada, the name of the group was changed to The Computer Society of Canada in 1965 and to its current name in 1968. CIPS currently has a membership of approximately 7,500 individuals working professionally or studying information systems within the boundaries of Canada. The society is devoted to achieving the following objectives:

1. To advance the theory and practice of information processing in Canada;
2. To promote the free interchange of information about the theory and practice of information processing in Canada and elsewhere;
3. To determine, develop and maintain the integrity and competence of individuals active in information processing in Canada;
4. To establish a public awareness of the potential impact of information systems and to protect the public and individuals against the misuse of information systems (CIPS, 2003, no pp.).

Activities of the society include "sponsoring conferences, publishing papers and journals, establishing liaison with similar organizations inside and outside Canada, promoting education and training programs, establishing information networks for the exchange and dissemination of information, creating Local Sections and supporting Special Interest Groups within the framework of the Society" (CIPS, 2003, no pp.). CIPS is active in promoting the voluntary certification of information systems professionals via its Information Systems Professional (ISP) certification designation. Certification involves a combination of education and professional work experience. Educational requirements may be supplemented or replaced with the completion of subject-specific professional exams offered by the Institute for Certification of Computing Professionals (ICCP), an organization established in 1973 and supported by a consortium of IS professional associations, including both CIPS and ACM.

Like ACM, CIPS also recognizes that, because of their special access to knowledge and information resources, IS professionals must commit to high standards of ethics and integrity in their dealings with clients, employers, colleagues, and the public. A "Code of Ethics and Standards of Conduct" sets the minimally acceptable level of professional conduct for CIPS members. Each member of CIPS must pledge to support the principles of the Code. Possible disciplinary actions for ethical violations by CIPS members range from warnings, to suspension of membership, expulsion from the association, and/or revocation of the ISP certification.

Codes of Ethics

Table 1 presents a summarized comparison of the key rules and obligations presented in the ACM and CIPS codes of ethics and conduct. In Table 1, the rules are organized loosely around the audience of the ethical responsibilities (Responsibility to Society, Responsibility to Clients/Employers, Responsibilities to Users, and Responsibilities to the Profession). Rules that are shared by both organizations are indicated by the presence of a checkmark (√) in the second column.

The ACM and CIPS codes reflect considerable overlap in content. Members of both ACM and CIPS are expected to:

- Contribute to society and human well-being
- Educate the public about computing
- Know and uphold laws relevant to the profession
- Honor property rights
- Acquire and maintain professional competence
- Honor contracts, agreements, & assigned responsibilities
- Honor confidentiality
- Give thorough evaluations of computer systems
- Make full disclosure about systems, qualifications, and possible conflicts of interest.
- Give credit for intellectual work of others
- Uphold and support the code of ethics

The ACM code defines more rules that relate to generalized moral behavior (to avoid harm to others, to be fair, to not discriminate, to encourage social responsibility, and to be honest and trustworthy). The ACM code also specifies the obligation its members have to potential users of their systems (to build systems to enhance the quality of working life, to ensure user input into system design, and to help organizational members to learn about computing). The CIPS code, on the other hand, addresses responsibility to the profession in more detail (to treat colleagues with integrity and respect their rights

to succeed, to share knowledge with colleagues) and adds a responsibility to students that is not addressed in the ACM code (to be supportive and helpful to students). Both organizations require that their members support their codes through their own ethical behavior. CIPS members are also charged with the responsibility to avoid harming the stature of the profession, to decline unethical work, and to report unethical behavior by other members. A final key difference is the amount of detail included in the code about procedures used to enforce the code. ACM members are warned in the code that serious violations could lead to termination of membership. The CIPS code identifies possible penalties for violations, as well as explains the complaint, hearing, and appeal processes relevant to enforcing the code.

Table 1. Comparison of Codes of Ethics

ACM, "Code of Ethics and Professional Conduct"	CIPS, "Code of Ethics and Standards of Conduct"
Responsibility to Society	
Contribute to society and human well-being	√
Educate the public about computing	√
Avoid harm to others	Do not withhold or misrepresent information of public concern
Be fair	
Do not discriminate	
Encourage social responsibility	
Be honest and trustworthy	
Know & uphold laws relevant to the profession	√
	Report illegal activities
Honor property rights; esp. copyrights & patents	√
Responsibility to Client/Employer	
Acquire and maintain professional competence	√
Strive for high quality in work process and product	Do not accept work or give professional opinions outside area of competence
	Do not accept work that you do not have the resources to complete
Honor contracts, agreements, & assigned responsibilities	√
	Further employer/client's legitimate best interest
Honor confidentiality of others' information	√
Respect privacy of others	
Avoid unauthorized use of computer resources	
Support proper & authorized use of computing resources	
Give thorough evaluations of computer systems	√
Make full disclosure about systems, qualifications, and possible conflicts of interest	√
	Accept full responsibility for work performed
Responsibility to Users	
Design & build computer systems to enhance quality of working life	
Ensure that computing systems protect personal privacy and dignity of users & others	
Ensure user input into system design	
Create opportunities for organization members to learn about computing	
Responsibility to Profession	
Give credit for intellectual work of others	√
Accept and provide professional review	Treat colleagues with integrity & respect their rights to succeed
	Share knowledge & skills with colleagues
	Be supportive & helpful to my students
Uphold and promote the Code	√
	Not harm the stature of the profession
	Do not accept work that is unethical
	Report unethical conduct by members
Membership may be terminated if Code violated	Enforcement procedures to discipline Code violators; complaint, hearing, & appeal process

Research Questions and Plan

We suggest that any concerted effort to increase IS professionalism should begin by ensuring that IS students are being adequately prepared for their future careers, not only in terms of skill sets and conceptual knowledge, but also in terms of professional attitudes and behaviors. This preparation should sensitize students to the ethical issues that IS practitioners face and the special ethical responsibilities that are incumbent upon members of the IS profession. It should also ensure that students are familiar with IS professional organizations and the rules and responsibilities that are formalized in their codes of ethics and professional conduct.

Anecdotal evidence and personal experience with undergraduate students leads us to believe that this aspect of IS student education, preparation for professionalism, has not been receiving adequate attention. We believe that upper-division undergraduate IS students are increasingly being sensitized to IS-related ethical issues (thanks, in part, to an increased emphasis on ethics in many business curricula), but they are not well-informed about IS professional organizations or their codes of conduct. We also believe that there may be substantial disparity between students' perceptions of appropriate content of professional codes of ethics and the rules that are currently promulgated by key IS professional organizations. To explore these issues, we have operationalized the following research questions:

1) How well are IS student able to identify IS professional organizations?
2) What do IS students perceive as ethical issues particularly relevant for IS professionals?
3) How accurately can IS students identify the specific ethical rules or standards comprising the codes of ethical conduct promulgated by major IS professional organizations?
4) Which specific ethical rules or standards in such codes of conduct do IS students perceive as appropriate? Which do they perceive as inappropriate?

To answer these research questions, we plan to collect data from upper-division students majoring in information systems in undergraduate programs at universities in North America. A paper-and-pencil survey instrument, customized for U.S. and Canadian subjects, has been developed. The first section of the survey asks if the student plans to pursue a career in information systems. It continues with an open-ended question asking the student what he or she perceives as ethical issues that are particularly important in the information systems field. The second section of the survey asks the student to name all of the IS professional organizations they know and asks if they are familiar with the organizations' code of ethics or professional behavior. Finally, the survey administered to U.S. students includes a listing of the key ethical rules from the ACM "Code of Ethics and Professional Conduct". The survey administered to Canadian students includes a comparable list of ethical rules taken from the CIPS "Code of Ethics and Standards of Conduct". The students will be asked to read each rule and indicate whether or not the rule is, in fact, part of the ethical code for the professional organization. In addition, they will be asked whether or not they believe the ethical rule should be part of the code.

Initially, we plan to pilot our study by collecting data from approximately 100 students at two universities. Data has already been collected from approximately 50 IS students at a large, comprehensive university in the Midwestern United States, and collection from a similar number of students at a medium-sized, primarily undergraduate university in Canada is underway. We will use these data to refine and perfect the survey instrument. A broader sample from numerous North American universities will be drawn for the full study.

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