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Indicative Markers of Leadership provided by ICT Professional Bodies in the Promotion and Support of Ethical Conduct

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Abstract

Most countries with a mature Information and Communications Technology (ICT) industry have at least one professional body (PB) that claims to represent its members working with such technology. Other ICT PBs operate in the international arena. These PBs may differ in membership criteria, jurisdiction and even objectives but all profess to promote high ethical and professional standards. This study seeks to determine the common indicative markers that demonstrate that an ICT PB is offering leadership in identifying, promoting and supporting ethical conduct amongst a variety of constituencies including its own members and beyond. An extensive literature review identified over 200 prospective markers covering a broad range of potential activities of an ICT PB. These were grouped into nine major areas: ethical professional practice; continuous professional development; research and publication; education of future professionals; members' career development; social obligations; professional engagement; preserving professional dignity/ reputation and regulation of the profession. These markers were arranged hierarchically in a word processing document referred to as a "marker template". An analysis of selected ICT PBs websites was undertaken to confirm and refine the template. It will be used in the future for a comparative study of how professional bodies offer leadership to their various constituencies in the area of ethical conduct.

Keywords

Ethical Leadership Markers, Ethical Conduct, Information and Communications Technology Professional Body

Introduction

A profession is an occupation or career with a defining interest that requires considerable training and dedicated study to serve a body of specialized knowledge in the interests of society. A professional body (PB) is an organization, usually non-profit, that exists to further a particular profession, and protect both the public interest and the interests of its member professionals. Most countries have at least one organisation that claims to be a PB for those working in the Information and Communications Technology (ICT) domain. Examples are the Australian Computer Society (ACS), the British Computer Society (BCS) and the Canadian Information Processing Society (CIPS). Their mission is to advance the theory, practice and application of information technology and to promote high ethical and professional standards amongst their members.

Some ICT PBs extend their influence beyond national borders attracting an international membership: for example the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronic Engineers (IEEE). The membership of the third group of ICT professional bodies ("umbrella" bodies) comprises other PBs rather than individual professionals. Examples include the Federation for Information Processing (IFIP), the Council of European Professional Informatics Societies (CEPIS) and the South East Asian Regional Computer Confederation (SEARCC). Such PBs provide a networking function, advancing cooperation and facilitating information exchange between their member societies.

There are many ways that an ICT PB can promote and support the professional and ethical conduct of its members. At the very least is the provision of a Code of Conduct to be followed by its members. At the very best the nature and level of promotion and support is comprehensive. One where the PB recognizes it has a responsibility not only to its members but a range of constituents. These constituents include the wider community as well as government, industry and fraternal organisations for example. Moreover, it is concerned not only with the ethical conduct of its members but the ethics of ICT itself. ICT artifacts can confer benefits but can also harm. ICT professionals cannot be ethically neutral in regard to the design, development and use of artifacts. An ICT PB should provide leadership here in terms of discussion and expert opinion for a range of domains including the ICT profession, government, industry, fraternal organisations and the wider community.

This paper reports on an extensive literature review and a website analysis of a number of ICT PBs regarding the various ways in which ethics and ethical conduct are promoted and supported. These are referred to as indicative markers. It extends the exploratory study by one of the authors (Sandy 2005).

Research Question and Method

Research Question

The investigation reported in this paper addresses the research question of what are the indicative markers of leadership provided by ICT PBs in the promotion and support of ethical conduct of its members and other constituencies. Specifically, how can such support and promotion be identified and usefully classified.

The work reported here does not explicitly address whether ICT is truly a profession, which is certainly arguable as it does lack some of the important hallmarks typical of more traditional professions (Windt and Appleby 1989; Coady and Bloch 1996; Martin 1998; Werth 1999). Worldwide there are efforts to professionalise computing. In Australia, members of the ACS have received professional standing, the first country to achieve this recognition. The IEEE and ACM had a joint steering committee on the establishment of software engineering as a profession. As Gotterbarn (1999) explains the committee worked to define Software Engineering practice and its required body of knowledge and educational curricula including ethics. The Software Engineering Code of Ethics and Professional Practice was approved by ACM and IEEE CS in 1999.

An evaluation of individual ICT PBs in terms of the leadership provided is not within the scope of this paper. Such an evaluation is the subject of future research using the indicative markers template presented in this study and so is not reported here.

Research Method

In order to address the research question a comprehensive literature review¹ was undertaken including research studies directly relevant to the question. In addition the review included exploration of basic concepts such as values, morality and ethics, ethical theories, computer/ cyber ethics, ethical leadership and professionalism and professional/ ethical conduct. The review comprised Ethics Centres, Web Sources, Journals, Conference Proceeding as well as monographs and Ethics List Servers and Online Debates. Areas and activities where a PB showed ethical leadership (offering leadership in identifying, promoting and supporting ethical conduct) to its various constituencies were collected. We refer to these as indicative markers. They were analysed and grouped together in a bottom up manner using basic techniques of ontological engineering i.e. markers with similarities were placed in the same group and those with differences were placed in different groups. Like markers were clumped together i.e. generalized. Gradually families of markers became apparent in a bottom up manner. These large groups were subdivided and hierarchical trees were formed for each family, generalizing and specializing as appropriate. The process was iterative. The 200 markers so identified and structured above were incorporated into a data collection template for use in the second phase of this study.

In the second phase of the study the marker template was used to collect data to conduct an analysis of the websites of selected ICT PBs to confirm and further refine the template². The ICT selection mix aimed to include PBs commonly regarded as the most influential in the world such as the ACM USA, IEEE USA and the CIPS. Also included were some PBs regarded as less influential such as Computer Society of India (CSI) and the Computer Society of South Africa (CSSA). There was an attempt to include in the sample PBs from every major geographic area, that is, North America, Australasia, Asia, Europe and Africa. None was included from South America primarily because the few PBs with a web presence were unsuitable. They were either not accessible in English or only had a minimum subset of their activities documented on line. Other PBs was selected because they had both national and international memberships, for instance ACM and IEEE. In addition several ICT "umbrella" bodies such as the IFIP were included. A detailed analysis of the websites of 17 PBs was undertaken to identify how each promoted and supported professional and ethical conduct of its members and ICT ethics amongst its constituencies. This took 300 plus hours and produced 300 plus pages of data for analysis. These results, together with the relevant literature, were used to identify what we refer to as indicative markers of leadership provided by an ICT PB in the promotion and support of ethical conduct by its members and other constituencies. The list of websites analysed are provided as an Appendix.

¹ The literature review is available on request from the first named author.

² In practice the process was iterative and not strictly sequential between the two phases of the investigation.

Research Studies

There have been a number of research studies that have explicitly addressed Codes of Ethics. However, very little empirical work has been undertaken on the many other ways that PBs promote the relevance of ethics in the ICT domain and other means of supporting and encouraging the ethical conduct of professionals and other constituencies. This study has as its major aim to document and classify these many ways.

One of the more comprehensive studies in this area and an early fore runner of our study was conducted by Berleur and Brunnstein (1996) under the auspices of the IFIP between 1992 and 1994. Thirty-one codes from 20 IFIP members were analysed and compared on a set of criteria, which on close examination turned out to be a subset of our markers. The authors noted, "such codes do not solve all problems but rather create awareness, supplement the law and reinforce ethical behavior. Robin et al. (1989) conducted a study of 84 codes from Business Week 1000 companies. They found a gap between what managers hoped corporate codes would help accomplish and what was actually accomplished. Oz (1992) used six obligations of an ICT professional as a basis to compare the ethical codes of a number of ICT Professional Bodies. The obligations identified were to society, employer, clients, colleagues, the Profession and the Professional Body. The ICT PBS selected was the Data Processing Management association (DPMA), Institute for Certification of Computing Professionals (ICCP), CIPS, ACM and the BCS. The findings included a lack of prioritizing the subjects of the moral obligations in the codes examined and the need for a unified code of ethics for ICT professionals. Murray (1997) analyzed 20 codes to develop working guidelines showing their strengths and weaknesses. Little evidence of compliance procedures was found. In another study he developed a thematic comparison of the Codes of Ethics from the ACM, IEEE, DPMA and ICCCP was compared and common themes identified.

Harrington (1996) considered whether codes of ethics effect computer abuse judgments and the intentions of information systems employers. She states that company codes of ethics guide employees in their responsibility and discourage them from engaging in corrupt behaviour against the company. However, generic codes indirectly relate to information system (IS) functions and do not affect judgments and intentions of IS personnel. As a result, employees who have high denial responsibility (RD) are prone to computer abuses and unethical behaviours while those who have low RD do not. Murphy (2000) surveyed exemplary ethics based on his previous 1992 study from corporate credos, values and ethics statements and ethics training programs. The global nature of the codes, who had written the code, who and how it was communicated were also discussed. Schilling (2000) offers a checklist to assess the credibility of company codes of ethics including the need for the company to accept independent monitoring. Finally Richardson (2005) conducted a study that considered the effects of authority and proximity on ethical reasoning and compliance with ethical codes. The study found that authority and proximity affect ethical decisions but the process did not increase intent to comply with the ethics code. Overall participants seemed satisfied with the process and their decisions. Finally, Sandy (2005) reviewed the websites of 11 ICT PBs to identify the nature and extent of their ethical leadership. This exploratory study identified a restricted set of markers and used them to evaluate each of the PBs in the sample. The work reported in this paper extends this earlier study in formulating a comprehensive set of markers.

The Markers

Introduction

An analysis of the relevant literature and the selected websites revealed nearly 200 ways by which an ICT PB may promote the relevance of ethics in the ICT domain and support and encourage the ethical conduct of professionals. These are referred to as markers because they mark or demonstrate the PB's leadership in the promotion, encouragement and support of ethical conduct. In this paper we identify nine families of markers. Each subsumes various PB activities organized into a hierarchical tree. The markers identifying areas where a PB has an opportunity to demonstrate ethical leadership are:

- Ethical professional practice
- Professional development
- Research and publication
- Education of future professionals
- Career development
- Social obligations
- Professional outreach/ engagement
- Preserving professional dignity/ reputation
- Regulation of the profession

Ethical Professional Practice

An ICT PB should actively encourage ethical practice through the development and pro-active promotion of a code of ethics and professional conduct. As Gotterbarn (2001) remarks “codes provide a standard for ethical practice”. Buchholtz (1989) believes that “codes bind the profession to public service”. Obviously the expectation should be that a PB goes beyond the mere development of a code to actively promoting the code and ensuring code compliance. This can include:

- regularly informing members of its existence and the mechanisms for supporting it
- ensure every member has access to most recent version
- ensure new members understand the implications of the code
- provide scenarios and demonstrate the application of the codes
- provide resources and devise strategies to obtain members commitment to the code
- regularly assess the code and monitor compliance
- be prepared to apply sanctions for breaches of the code
- offer legal and other support to complying members who may suffer because of adhering to such codes.

Other markers for supporting ethical professional practice include:

- provide a means to register conflicts of interest
- have a body of mentors and ethics experts available for consultation to assist in resolving ethical dilemmas
- offer leadership in stamping out bribery, extortion, fraud and corruption
- support justified whistleblowing
- encourage members general professional behaviour including honesty, integrity, competence, taking responsibility
- encourage members’ diligence in product development and adhering to legal provisions
- encourage respect for privacy and confidentiality, intellectual property and trade secrets etc.
- work with insurers and encourage members to take out professional indemnity insurance
- encourage members to exercise their social responsibilities with respect to human rights, social and economic justice, ethical treatment of employees, the environment, health and safety etc.

Professional Development

An ICT PB should define a core body of knowledge that obviously includes ethics. This body of knowledge will be dynamic and require regular review as technology advances. The PB should actively encourage and support members in ensuring they have mastered this knowledge and remain current. This can include:

- develop a certification program
- issue annual practice certificates that states professional development to a specified standard has been undertaken
- provide access to published resources, courses, conferences, update seminars etc.
- accredit conferences in the academic and industry domains
- provide other professional development activities such as special interest groups and online learning
- publish books, articles and scholarly journals

Research and Publication

An ICT PB should actively promote and support ethics research in the ICT domain and its publication. Ethical dilemmas often associated with ICT include those related to information privacy and security, intellectual property, software reliability, health, safety and environmental concerns related to ICT and implementing change through ICT. Of course ICT professionals experience ethical dilemmas in common with other professions. These include respect for human rights, workplace discrimination, ethical treatment of employees, clients etc, ecological and health and safety concerns. An ICT PB should actively promote an ethical research and publication process. Markers include:

- publish reports/ issue papers etc for a range of constituents including professionals, government, business, unions and the wider society
- provide funding for ethical research and facilitation of the researcher remaining independent from industry sponsors
- assure access of researchers to information

- publish ethical research guidelines including reviews by ethics committees, ethical informed consent by subjects, maintenance of privacy, the collection storage, retention and eventual destruction of research datasets, review and evaluation of research projects.
- promote academic honesty including integrity and trustworthiness of researchers and the avoidance of plagiarism
- education in intellectual property issues
- encourage social responsibility in the choice of research topics
- encourage justification that the results of the research and the benefits it will contribute to human knowledge far outweigh any probability of risk or harm to the participants
- tools to assist researchers such as providing access to academic literature and links to other research sites.

Education of Future Professionals

An ICT PB should support the education of future professionals. It can be involved directly in the teaching of ethical responsibilities to undergraduate and postgraduate students or indirectly through a variety of means especially course accreditation. This includes, as was mentioned previously, defining a core body of knowledge that incorporates Ethics and ethical conduct. An ICT PB may adopt or adapt Curricula that has been established by other PBs, for instance, the IEE and ACM or the Center for Computational Sciences and Engineering (CCSE). Support may include:

- defining a core of knowledge that incorporates Ethics
- adoption of “best practice” curricula that will incorporate Ethics
- accredit educational programs that conform to “best practice” curricula
- supporting educators (pedagogy and resources)
- providing tertiary program information
- providing student PB membership and access to activities geared to youth members
- providing student competitions, scholarships
- providing career information, internships, industry networking and mentoring

Career Development

An ICT PB should be active in the promotion and support of a member’s career development with regard to ethics and ethical conduct. This includes:

- a mentoring program which obviously includes ethics
- leadership training programs on how to lead ethically
- support career development through workshops, resume preparation, scholarships, internships, mentoring etc.

Social Obligations

An ICT PB has obligations to the wider society that at times may be global. It should be active in the balanced discussion of ethical (and societal) issues of the ICT domain at the national and international levels. At times the ICT is required to not only inform debate but correct misinformation. At other times the ICT will be required to take a “position” on a contentious issue. Some potentially contentious areas include workplace surveillance, child pornography, internet censorship, copyrighted and patented intellectual property and information privacy and security. This may involve:

- publication of discussion/ position papers
- issue of press releases
- provision of presenters at conferences and the like
- provision of pro bono publico advice and services
- maintain a register of expert witnesses who can assist the courts
- social policy initiatives such as programs to advance workplace diversity, human welfare or respect for human rights
- serve the community through providing balanced information and encouraging public debate on ICT issues
- educate on ecological and climate change concerns and the potential of ICT to support such issues.

Professional Engagement

An ICT PB should be actively engaged in a formal and regular way in providing professional expertise and opinion on all relevant matters pertaining to the ICT domain. Specifically this includes:

- active engagement on government or quasi government boards of inquiry where ethics and ethics conduct would be important
- lobby government for ICT research and development funds
- active engagement with fraternal organisations on the development, proactive promotion and enforcement of professional/ ethical codes of conduct
- represent its membership on international ICT bodies, participating in standards development, global codes of conduct consideration and reciprocity arrangements
- provide thought leadership to industry. Active engagement on industry expert panels and the like especially in ethics and ethical conduct. Identify and issue position statements on topical issues.
- lobby industry to accept certification and PB membership as conditions of employment
- establish a professional advice register
- facilitate conflict resolution in industry

Dignity and Reputation of the Profession

A defining aspect of professionalism is the trust the client, and indeed society in general has for the professional. As Buchholtz (1989) puts it society is promised explicitly that members of a profession will behave responsibly and ethically to all humankind. An ICT PB should ensure that promotes and supports all activities that will build this trust and so the dignity and reputation of the profession. This includes:

- the development, promotion and enforcement of professional/ ethical codes of conduct
- adopt a professional certification process
- devise strategies to enhance public confidence in the profession
- devise strategies to enhance the PBs reputation and public visibility
- recognise outstanding member contributions through prizes and special membership grades
- encourage appropriate behaviour between members including providing opportunities for demonstrating collegiality and positive networking
- encourage the practice of high moral and ethical standards by its members in their social and private lives.

Regulation of the Profession

Traditionally one of the hallmarks of a profession is it is autonomous or self-governing. It practices self-regulation and determines who should qualify to become a member. Self-regulation is usually justified on the grounds that only the profession has the relevant knowledge to establish who is qualified and to identify when a member violates professional/ ethical standards of conduct. If ICT were a profession then the following would be present for the PB:

- the ability to designate who may enter the profession
- the administration of an oath or pledge or suchlike for any becoming a member to behave professionally and ethically
- the ability and willingness to handle hearings of those members accused of violation of the professional/ ethical codes of conduct
- the ability and willingness to sanction those members who have violated the professional/ ethical codes of conduct
- establish professional review boards to hear complaints of inadequacy of professional performance

Summary and Conclusion

This investigation addressed the research question of what are the indicative markers of leadership provided by ICT PBs in the promotion and support of ethical conduct and ICT Ethics of its members and other constituencies. Specifically, it was concerned about how such support and promotion could be identified and usefully classified. Over 200 markers were identified from the literature and the website analysis. Nine families of markers were identified and presented as a useful means to discuss such support and promotion. It is recognized that some specific activities are relevant to multiple markers although obviously with a different emphasis. Some refinement of the classification system may be warranted.

ICT lacks some of the hallmarks of the more mature professions such as Medicine or Law. In all ICT domains investigated any Professional and Ethical Codes of Conduct are at best binding on members. More typically ICT PBs have limited options for sanctioning members found guilty of ethical misconduct and violation of the Codes, unless illegal means that a person can still practice. In most domains the majority of persons employed in ICT are non-members. Indeed, membership of a PB may have little impact on employability. This is usually not the case for Medicine or Law.

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APPENDIX 1

List of ICT Professional Bodies Investigated

1. Association of Computing Machinery International (ACM International) <http://www.acm.org/>
2. Association of Computing Machinery USA (ACM USA) <http://www.acm.org/usacm/>
3. Australian Computer Society (ACS) <http://www.acs.org.au/>
4. British Computer Society (BCS) <http://www.bcs.org/>
5. Canadian Information Processing Society (CIPS) <http://www.cips.ca/>

6. Computer Society of India (CSI) <http://www.csi-india.org>
7. Computer Society of South Africa (CSSA) <http://www.cssa.org.za/>
8. Council of European Professional Informatics Societies (CEPIS) <http://www.cepis.org/>
9. International Federation for Information Processing (IFIP) <http://www.ifip.org>
10. Institute of Electrical and Electronic Engineers International (IEEE International) <http://www.ieee.org/portal/site>
11. Institute of Electrical and Electronic Engineers USA (IEEE USA) <http://www.ieee.org/organizations/ieeusa.html>
12. Hong Kong Computer Society (HKCS) http://www.hkcs.org.hk/en_hk/home/home.asp
13. Malaysian National Computer Confederation (MNCF) <http://www.mncc.com.my/>
14. New Zealand Computer Society (NZCS) www.nzcs.org.nz
15. Pakistan Computer Society (PCS) www.csp.org.pk
16. South East Asian Regional Computer Confederation (SEARCC) www.searcc.org
17. Singapore Computer Society (SCS) www.scs.org.sg

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