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Achieving the goal of a global computing code of ethics through an international-localisation hybrid

Attempts to create a global computing code of ethics have failed repeatedly over the last 25 years. Some focused on professional ethics and others on common values across cultures. In this article professional ethics are seen as normative, yet subject to cultural diversity, and the place of values is seen as a promising way forward. A hybrid is proposed following the two-fold formula for codes of ethics, advocated by the International Federation of Information Processing. The international-localisation hybrid suggests that it is possible to achieve a common set of values, yet allow diversity through interpretations of acceptable professional behaviour.

Keywords: code of ethics, normative ethics, professional ethics, ethical theories, Islam, global

Introduction

The aim of creating a global information and communications technology (ICT) code of ethics (CoE) is laudable. Attempts to achieve this over the past 25 years have come up against two main challenges, that of the rapidity of technological change and that of cultural diversity. This paper reviews these two challenges to achieving the aim of creating a global ICT CoE, as well as the two main approaches that have been suggested for achieving it, and proposes a possible strategy for moving forward.

The particular perspective explored in this paper is that of the role of the International Federation of Information Processing (IFIP), as an umbrella society that encompasses more

than 50 ICT societies globally. Through its SIG9.2.2 Taskforce on Ethics, IFIP has played an influential role in exploring what should constitute a CoE. SIG9.2.2 has helped shape the development of new codes of ethics for ICT societies in disparate cultures, including those of South Africa and Finland. It also plays an important role for member societies when they review and revise their existing codes of ethics, as was the case recently for the Australian Computer Society's (ACS) CoE.

Starting with a brief review of the role of IFIP in global computing, the paper explores a hybrid approach for the attainment of the laudable goal of a global CoE. The literature of the past 25 years of attempts to achieve this goal is summarised as divided into two main challenges and two main approaches to overcoming them. Also discussed are the lessons that can be learned about one of those approaches, from the design literature. From that survey of the literature, the article proposes a hybrid, following the IFIP two-fold model, proposing that both common international values and localised professional behaviour is possible, in a global CoE.

IFIP

After the Second World War, UNESCO advocated that less well developed countries should not be left out in technological developments. They argued that there ought to be an overriding body that is responsible for technology diffusion. The result was the establishment of IFIP. Today IFIP has at least one member ICT professional society in more than 50 countries around the world. Where a country has multiple professional ICT societies, typically only one can be a member of IFIP. Membership means being able to appoint national representatives to IFIP technical committees. For example, Australia is represented

through the Australian Computer Society (ACS). IFIP is structured around 12 ‘technical committees’ (TC), each with ‘working groups’ (WG) within it, and in a few cases WGs contain ‘special interest groups’ (SIG). The governance structure is such that although members of SIGs and WGs can be drawn from volunteer experts in various countries, membership of TCs is restricted to national representatives and chairs of WGs (or their nominees), and in many cases the chairs of WG are also national representatives.

IFIP TCs cover areas such as software engineering, information systems, security, human computer interaction, and more. One is Technical Committee 9 ‘ICT and Society’.

Representation means working with other national representatives on current issues electronically and through face-to-face meetings. Aside from committee work, IFIP TCs and their WGs regularly hold conferences around the world, giving people opportunities to network, share ideas and to collaborate on a global scale. IFIP also encourages collaborative publishing. Thus within TC9, one WG is 9.2 ‘Social Accountability’ and within that is SIG9.2.2 ‘Taskforce on Ethics’, which has published various articles on ethical issues related to codes of ethics (Berleur & Brunstein, 1996; Berleur et al., 2008; Berleur et al., 2004; Berleur, Duquenoy, & Whitehouse, 1999).

The elusive global ICT CoE

There has been considerable debate about whether a global CoE is possible for ICT. Bynum (2008) in tracing the history of computer ethics from its early beginnings in the 1940s to the present day, claimed that discussions concerning a global CoE have persisted for the past 25 years, but without agreement being reached. IFIP began work on a global ICT CoE in 1988, under the leadership of H. Sackman, however, some have at times taken the view that it is not

possible, as for a time did IFIP. 'For an international organization like IFIP, formulating a code acceptable for all Members will be an impossible task' (Holvast, 1996: 49). 'To conclude, SIG9.2.2 does not believe that a universal or international code of ethics can be mandated for persons working with information and communication technologies' (Berleur et al., 2004: 16). Capurro and Britz (2010) did propose a possible global CoE, but the website referred to in their paper is no longer active.

Whether or not it is possible to achieve a global ICT CoE, there are people who view the main benefit as the dialogue itself. That is, through the dialogue we can better understand each other's perspectives and appreciate the reasons behind the diversity (Capurro & Britz, 2010). Capurro and Britz claimed that discussion topics worth pursuing were mainly those to do with cultural differences involving societal, political and legal issues. Their view was that discussions which allowed differences to freely co-exist would lead to enrichment and respect for all discussants (Capurro & Britz, 2010: 34). Berleur and d'Udekem-Gevers (1996) claimed that having 'spaces of discussion' is important to maintaining an open and progressive dialogue, that involves many people. Bynum (2008) divided the discussions into idealistic views involving theoretical positions, and practical objections typically based around notions of cultural diversity. He concluded that the two most promising approaches were to be found in Gotterbarn's focus on professional ethics, and in the values literature, particularly as espoused through the value sensitive design (VSD) literature. Similarly, Payne and Landry (2006), when comparing ICT and business codes of ethics, sided with values as a unifying factor. In the main, in addition to these two key approaches, there appear to be two main challenges to achieving a global ICT CoE. Next the two challenges are discussed, followed by the two approaches to overcoming them.

The challenge of frequent technology changes

Individual ICT societies have struggled to determine the frequency of CoE updating, given the rapidity of technological change. There exists a tension between requiring specificity, so as to be able to hold members accountable, and generalisation, yet being too general to be of use. Over a decade ago SIG9.2.2 raised this situation with its member societies. That committee sought feedback from member ICT societies about how rapidly a CoE should be updated, as new technologies emerged (Berleur et al., 1999: 18). Typically changes in technology at some point require changes in professional behaviour. A code needs to be general enough so that it does not require continual updating as technologies change, yet specific enough that it is possible to hold members accountable. The latter is typically accomplished through a disciplinary committee of that ICT society.

The challenge of cultural diversity

Arguments that cultural diversity affects ethical interpretation are not new. However, there are some recently documented examples that highlight the differences as related to codes of ethics (CoE), arising from changes to American and Australian codes (Burmeister, 2012: 255-256):

The revised ACS CoE was based in consequentialism and in virtues, and to a lesser extent on duty, such as harm reduction. This contrasts with the revised ACM codes, which had input from people around the globe. The Chairman of the ACM task force charged with developing that code, Don Gotterbarn, told me that North American

contributions to the code predominantly followed obligations (rights) ethics, whereas the bias in Europe was towards virtue ethics. He said that beyond this it was more difficult to describe influences, because so few people from other regions contributed to the development of the code. However, he felt that Middle Eastern and Australian views did not easily fall into either of these categories.

These views reinforce the notion that creating a global CoE is made more difficult by our cultural differences. Furthermore, it suggests that cultural differences can impact which ethical theories dominate in moral discussions, in one culture as opposed to another.

Interestingly, an evaluation of the USA Association of Computing Machinery (ACM) CoE from an Islamic viewpoint revealed that it shared many similar ethical values with the Quran and Hadiths (sayings of the Prophet) (Al-A'ali, 2008: 32-37). That is, although there exist cultural differences across the globe, these might be bridged through a focus on shared values.

The professional ethics approach

As mentioned above, professional ethics have been promoted as another means to achieving a global code. That is, when professional responsibility is based upon ethical choices arising from the CoE of the professional society to which one belongs, then such choices are based on a normative standard. Addressing the software engineering CoE, Gotterbarn and Miller (2009: 73) claimed that 'it encourages software engineers to undertake positive actions and resist pressures to act unethically'. That is, the CoE sets a standard that all professional members of a given ICT society agree to abide by. Such a standard is not based upon ethical theories, culture, religion, or personal ethics. Nonetheless, the way in which ICT societies

describe professional practice is unavoidably contextually bound to their culture. This was seen in the discussion above, about the influences on the revisions of the CoE in both Australia and the USA.

One might even argue that professional practice is required to be culturally bound. As seen above, in the case of a breach of a CoE, disciplinary proceedings can be taken against an individual member, by their professional ICT society. In addition to disciplinary proceedings by the professional society, legal processes might also be involved. For instance, Gotterbarn (1996) claimed that 'codes of practice are very content specific. Sanctions for violations are harsh and form a basis for legal action'. Such legal action is dependent on the jurisdiction in which the situation occurred. Laws with which professionals must abide are different from one country to another, and thus there is some support for the view that professional practice should be culturally bound. Perhaps this helps to explain why within one country a professional ICT society can mandate its normative standard, but cross-culturally professional standards discussions have thus far not succeeded? At this point it is pertinent to consider the interplay between moral and legal issues, in international jurisdictional situations, and how this is relevant to considerations of developing common, global values:

That there are these differences is often taken as evidence that moral values are relative to a particular culture and that it is pointless to talk of object or absolute values because none exist. If this is so then it is a hopeless task to try to find common moral ground on which to build international laws. This moral relativist position however, is not as strong as it superficially looks, and in a way it would be strange if it were. Human beings are all basically the same. We require the same things to sustain life and the same sorts of things give us pain and pleasure. James Moor argues

that there are certain core values that all people have (Moor, : 66) ... In order to achieve a good life we require all of these, but different people will not give all of the components the same weightings and therefore conceptions of the good life will be different for different people, but not radically so. Some people place more weight on security while others on freedom, for example, but all want some of each. The argument here is not that finding the common ground between nations and cultures is easy, the differences are important, merely that it is not a hopeless task and can be pursued with a realistic hope of success (Weckert, 2005: 5-6).

The values approach

The values approach for a global CoE was first discussed in terms of commonly agreed principles. The seed for it can be seen as early as Holvast (1996), who suggested that if IFIP had general principles that were acceptable to all member national societies, then that might be a means to progressing a global CoE discussion. In his review of the development of computer ethics, Bynum (2008) stated that a values focus was seen as a way of embracing cultural diversity, that looked for common concepts across cultures. He held up various attempts to deal with values, including those of researchers who investigated incorporating values in the design of ICT, using the methodology of value sensitive design (VSD). It is then surprising that more than one decade after Friedman (1996) first proposed VSD, Manders-Huits (2010) was able to write that she was disappointed that Friedman had moved directly to describing how values impact technology design, and had merely assumed what values are, without rigorously defining them. Despite this, Bynum (2008) is right to suggest that discussions on the role of values in a global CoE can benefit from insights in the VSD literature.

Friedman, Kahn and Borning (2003) used dictionary definitions to show that, whilst the term 'value' could refer to economic worth, their particular use of the term related to the definition of value as something that is important to a group or an individual. Moreover, by drawing on philosophical writings on value-oriented discourse from Plato to the present day, and on ethical theories of values, they postulated that 'values cannot be motivated only by an empirical account of the external world, but depend substantively on the interests and desires of human beings within a cultural milieu' (Friedman, Kahn, & Borning, 2006: 349).

The values literature suggests that although there are certain universal values, these may be culturally and historically located. In terms of importance for design in various contexts, the VSD literature lists the following as universal values: human well being; human dignity; justice; welfare, including human welfare (Friedman et al., 2006: 13-17) and physical welfare (Leveson, 1991); human rights (equality of access) (Schneiderman & Plaisant, 2010, pp. 40-55); and freedom (Burmeister, Weckert, & Williamson, 2011).

VSD research has also been conducted in engineering. Van Gorp (2005) in part relied on VSD and also examined the sources of values for engineering design. Her main sources apparently were Kantianism, virtue ethics and utilitarianism. She also showed a heavy reliance on works by Thomas Nagel. Van Gorp preferred to use the term 'ethical issue' rather than utilitarianism, virtue ethics or Kantianism, because frequently values could be seen from multiple perspectives.

An empirical study by Lloyd and Busby (2003) had similarities to the work of Van Gorp in that it showed that engineers used three ethical theories to carry out ethical decision making.

These were deontology (rules-based moral choices), virtue ethics (the Aristotelian view of moral choices, made in order to be a person of good character) and, less frequently, consequentialism.

The Australian Department of Education, Science and Training published a list of ten values that were required to be implemented into public school curriculums across the nation from 2004 to 2008 (Curriculum Corporation, 2003). They sought to create a definition of values, specific to the educational context. Their definition was as follows (Curriculum Corporation, 2003: 155):

In ethics a value can be seen as something that is worthy of esteem for its own sake, which has intrinsic worth ... It signifies the 'excellent' status of a thing, object, situation, person, performance, achievement, etc, or the estimate in which it is held, according to its real or supposed worth, usefulness or importance, as 'excelling' (standing out from, being above, other things) in a particular class of comparison with other objects of a similar kind [sic]. Thus, to assess the value of something is to consider a thing as being of some worth, importance or usefulness, in a class of comparison in which, by the application of criteria, we rate it highly, esteem it or set store by it. It also relates to the particular principles or standards of conduct by which a person seeks or chooses to live.

An equivalently thorough definition of 'value' is not evidenced in the design literature. Nor in the discussion thus far on developing a global ICT CoE. However a definition of values for a global ICT CoE would do well to end with a final sentence similar to that in the above

definition. Such a final sentence would be good to reinforce the close link between values and professional behaviour in the CoE.

Discussion

IFIP SIG9.2.2 is the successor of an earlier Task Group created by IFIP to explore the possibility of a global CoE. ‘The mandate of the IFIP General Assembly that created that Task Group in 1992 was to explore the feasibility of an IFIP worldwide code’ (Berleur et al., 2008: 8). SIG9.2.2 and its predecessor held various events, meetings and produced publications, to which representatives of many ICT societies contributed. As one can appreciate, the independent development of codes of ethics in ICT societies led to such codes being referred to by many names. They are codes of conduct, codes of ethics, codes of practice, codes of professionalism, and many more. However, a common thread identified was a two-fold structure. That is, a set of values followed by implementations of normative professional practice.

Codes generally fall into two categories. The first contains a set of high level principles as general guidance (for example a Code of Conduct/Ethics), while the second form of codes (Code of Practice) is more specific and aimed at the application of “good practice” in a given working or occupational environment. (Berleur et al., 2004: 11).

Codes are norms, but principles are required before norms. These norms are often based on different cultures and different histories, and therefore codes can differ between societies. It is in these particular societies and histories that the values that underpin codes are grounded (Berleur et al., 2008: 33).

It is our understanding that it is particularly important to examine more profoundly the principles that underlie these norms; to see the bigger picture ... (Berleur et al., 2008: 33).

But which part of the code changes most frequently? It is the professional practice component. The underlying values that govern practice only rarely require change in response to technological changes, but the way in which those values are implemented can change more frequently. That is, achieving global agreement on a CoE entails many impracticalities, logistics and the bringing together of many stakeholders. It is therefore best to make such changes as infrequent occurrences as possible. Thus it would appear that in a two-fold CoE structure, the first part lends itself better to reaching international agreement, than the second.

An international-localisation hybrid

A way forward may be found in this two-fold description of codes of ethics. The literature reviewed on values in design above, suggests that if it is possible for there to be universal values that apply to the design of ICT, then it ought to also be possible for there to be universal values that all ICT professional societies can ascribe to. However, the lesson of 25 years of at best partial successes to derive a globally agreed set of professional practices, suggests that professional practice needs to have localised interpretations. That is, the set of professional responsibilities that arise from the values, and which turn those general principles (values) into concrete statements, against which members can be held accountable, should be subject to culturally diverse interpretations.

Thus one way forward is to have limited global agreement, whilst appreciating the importance of diversity of professional practice. This international-localisation hybrid would consist of yet to be determined common or universal values, which are then locally implemented in professional practice. By way of illustration, four ICT societies, one each from four different continents, all show a common value, *honesty*.

The Hong Kong Computer Society (http://www.hkcs.org.hk/en_hk/intro/coe.asp) has as its first principle ‘A. Professional Competence and Integrity’, which is then defined in terms of honesty and trustworthiness:

As a Member of HKCS, I will ... be honest and trustworthy, and will not knowingly engage in or associate with dishonest or fraudulent practices.

The USA Association of Computing Machinery (<http://www.acm.org/about/code-of-ethics?searchterm=ethics>) lists ‘general moral imperatives’, of which no 1.3 is to ‘be honest and trustworthy’:

Honesty is an essential component of trust. Without trust an organisation cannot function effectively. The honest computing professional will not make deliberately false or deceptive claims about a system or system design, but will instead provide full disclosure of all pertinent system limitations and problems.

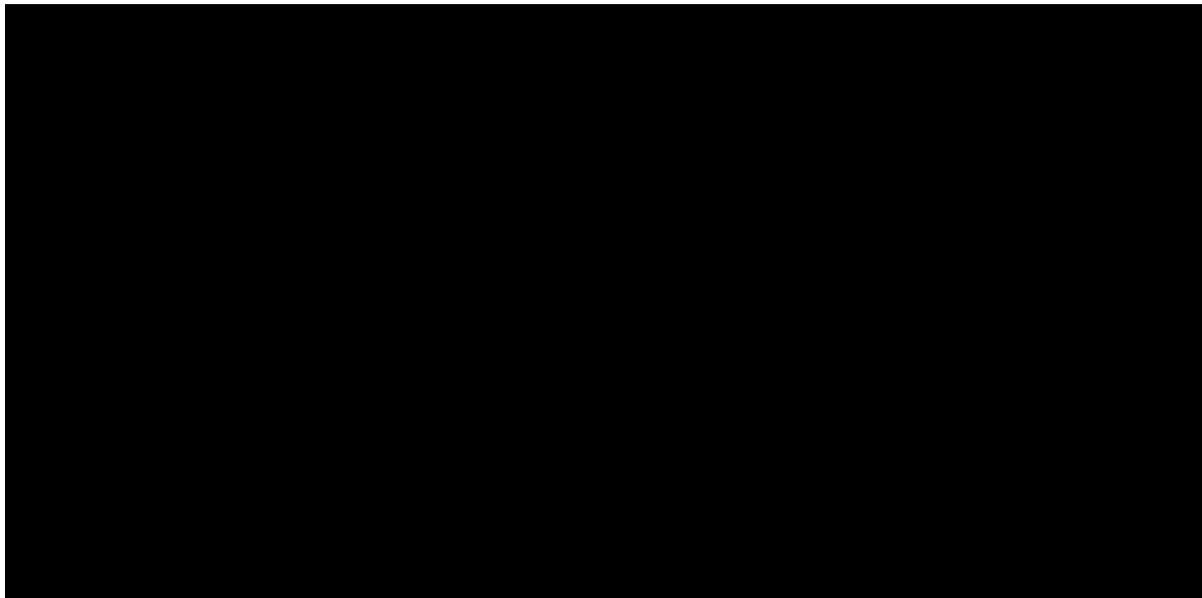
The Computer Society South Africa (http://www.cssa.org.za/?page_id=471#) lists as its first principle that of ‘Act at all times with integrity’, defined in terms of honest representation of competencies.

A member will behave at all times with integrity. A member will not knowingly lay claim to a level of competence not possessed, and will at all times exercise

competence at least to the level claimed. ... A member should act in a manner based on trust and good faith towards clients or employers and towards others with whom he or she is associated. ... A member should not deliberately make false or exaggerated statements as to the state of affairs existing or expected regarding any aspect of the construction or use of computers.

Finally, the third of the six Australian Computer Society values is that of honesty. However, as evidenced in Table 1, adapted from Burmeister (2012: 256), the local interpretation of what honesty involves in terms of professional practice has changed over time.

Table 1: Values change less frequently than their associated professional behaviours

A large black rectangular area representing a redacted table. The table content is completely obscured by a solid black fill.

Although the ACS has valued honesty since its very first CoE decades ago, the way in which that value has been implemented in professional practice has changed over those years. If this is true within a single ICT society, then it is reasonable to assume professional practice

globally would interpret implementations of honesty in professional practice quite differently over time as well.

The four examples of the value honesty, above, indicate that this value is common to all four ICT societies, although they are from four separate continents. However, the professional practice related to that value is interpreted differently between those countries, and as seen in Table 1, can even vary over time within the same country. Thus it may be possible for all ICT professional societies to agree to a value such as honesty, and yet the way in which that is practiced can differ inter and intra culturally over time. Separating practice from values enables the localised practice portion of a CoE to respond in culturally appropriate ways to technology changes, whilst leaving the internationally agreed values unchanged.

Support for this view can be seen in the Universal Declaration of Human Rights (UDHR), adopted by the UN General Assembly on 10 December 1948, and reiterated in numerous international human rights conventions, declarations, and resolutions. It advocates certain universal values, which include ‘universality, interdependence and indivisibility, equality and non-discrimination, and that human rights simultaneously entail both rights and obligations from duty bearers and rights owners’ (http://www.un.org/en/documents/udhr/hr_law.shtml).

The UDHR supports this view of an international-localisation hybrid CoE in two ways.

Firstly, it shows that although many nations have signed up to it, in some cases nations have signed up to alternate declarations that support one or another value, but interpret its application differently, such as for example, on 30 June 2000, Muslim nations that were members of the Organisation of the Islamic Conference resolved to support the Cairo Declaration on Human Rights in Islam. That is, the UDHR shows that it is possible to reach

global agreement on certain universal values. Furthermore, the quotation above shows that values imply ‘obligations from duty bearers’, which in the context of this article means that values have implications for professional practice, but as seen in the multiple and alternate declarations, agreed values can have varying interpretations of appropriate professional practice, depending on cultural and other differences. If nations can agree on universal values for the UDHR, and if in ICT and engineering design certain universal values can be agreed to, then it appears to be possible to reach agreement on what constitutes universal values for a global ICT CoE.

An international-localisation hybrid CoE values both harmony and diversity, and permits the tension between them to exist in an unproblematic fashion. Unlike prior attempts at complete harmony, or conversely, attempts to disparage the creation of a global CoE because of the many differences between ICT societies, this is a way to progress discussions about a global CoE, and one that warrants further investigation.

Conclusion

After 25 years of attempts at deriving a global ICT CoE, some common themes have emerged. Professionalism is one emphasis advocated by ICT societies, through normative ethical standards of behaviour. However, such professional ethics are interpreted differently over time within particular ICT societies, and also differently across cultures. Although not all ICT societies have a CoE, those that do typically have a two-fold structure to them, where the first is a set of values, and the second is a set of statements relating to each value, that makes the associated expected professional behaviour explicit. Challenges to developing a global CoE are many, but two of the key ones are the cultural diversities of the many ICT

professionals across the globe, and the ever changing nature of technology. The latter makes it difficult for individual ICT societies to keep their CoE current, and thus by implication, when a global CoE is agreed to, keeping that current, with all international stakeholders agreeing to changes, will be even more difficult.

In the light of the challenges and approaches to achieving a global ICT CoE, this article posed the question of why a global CoE has to do away with cultural diversity? Might it not be possible to embrace both commonality and diversity? In answer to these questions, the proposal here is that future global discussions explore the possibility of an international-localisation hybrid. That hybrid on the one hand seeks agreement on internationally recognised universal values, and on the other hand permits local expressions of how those values are to be implemented through professional behaviour. That is, the international-localisation hybrid would consist of common values and diverse professional practice.

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with IFIP, but nonetheless, the faults in this article lie completely with me. I am also grateful to Dr Penny Duquenoy, the current Chair of SIG9.2.2, Professor John Weckert, who was my predecessor as the Australian representative to IFIP TC9, and Professor Craig McDonald, a member of the ACS Committee on Computer Ethics, for their critical and constructive suggestions for improving drafts of the earlier conference paper. Similarly, I am grateful to the reviewers of this article for their recommendations.

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comparing a philosophical and an applied ethical analysis technique, *Computer Science Education*, 22:3 pp 237-255; and, Bernoth, M, Dietsch, E, Burmeister, O K and Schwartz, M (in press) Information Management in Aged Care: Cases of Confidentiality and Elder Abuse, *Journal of Business Ethics*. His contact details are:

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