

Internet resources to help Australian ICT professionals identify and solve ethical challenges

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Abstract

ICT professionals need a way to understand the ethical challenges they face in the workplace. Having first identified common workplace challenges through an industry survey with 2,315 respondents, those challenges were further explored, as were solutions to them, through interviews with 43 participants in six Australian capital cities. Findings from the quantitative survey were consistent with the findings from the qualitative interviews. That led to the identification of common categories of ethical challenges and strategies for solving them. Common unethical behaviours in the ICT workplace were also identified. The findings to date suggest that internal strategies are more effective in dealing with ethical workplace issues compared to external strategies. Further research is underway to clarify how those strategies can best be presented in an Internet resource, and the proactive steps that can be taken to create work environments that mitigate against unethical behaviours.

Keywords

Professionalism, ethical challenges, quantitative survey, Principal Component Analysis, qualitative interviews.

INTRODUCTION

Our paper explores the perceptions of Australian information and communication technology (ICT) professionals with regard to both the identification and solving of ethical issues and how these might be improved. This is complicated by the fact that our interviews suggest that different areas within that field prioritise different ethical initiatives differently. As such there is currently no common agreement as to what constitutes universal external ethical necessities in this field. This should not surprise us as it reflects the larger reality pertaining to business ethics itself of which ICT ethics, much like marketing ethics, accounting ethics and managerial ethics, is just one part.

Business ethics is an ancient topic. It is also a relatively recent academic endeavour. Although some researchers have expressed doubt, insisting that with regard to business ethics nothing “meaningful” (Hill, 1995, p. 585) could ever be said due to a fundamental problem. Namely, that we need to be able to first discuss ethics in order to be able to discuss business ethics: and discussing ethics required a meaningful moral discourse which remains

highly problematic. Following Hill this was so as for many “moral words and propositions make no sense, or are meaningless” (1995, p. 588). This, Hill argued, made it close to impossible “to talk about ethics” (1995, p. 589). In fact not only did it render such talk impossible. It also, he insisted, had a further consequence: it made any agreement as to the moral truth impossible. This underlying reality is revealed by the responses of our ICT interviewees who often agitated for different initiatives in countering unprofessional behaviour.

Hill however identifies an even larger problem. Moral truths he argued could not exist because there was no acceptance of any moral meaning. Nonetheless, he argued that even if there was the possibility of a moral meaning, moral truth would still be difficult as in the normal course of events the verification of a truth relies on empirical evidence: But moral truths do not. Moral truths rely on moral intuition and such “intuitions resist proof” (Hill, 1995, p. 589). As a result different people can disagree – as our ICT interviewees sometimes did – on a “moral issue *precisely because they have opposing intuitions*” (Hill, 1995, p. 589 - italics in the original). This Hill argued exposes the crux of our problem. The problem is that we live in an age in which there is little consensus. Consequently both “moral meaning and truth are very problematic” (Hill, 1995, p. 590). Following Hill business ethicists might engage in endless discussions about ethics, but regardless of that it is exceedingly difficult “to communicate a moral proposition that can be understood” (1995, p. 590). Contemplating those circumstances Hill speculated as to the reality Socrates mentioned being “right: morality cannot be taught” (1995, p. 590) unless those studying it approached it with the correct “attitude” (1995, p. 591). How such an attitude might be engendered with regard to Australian ICT professionals is what concerns us in our paper. If we fail to do so we cannot help them identify ethical problems let alone solve them.

Hill (1995) is not alone in having such misgivings as to the possibility of teaching business ethics. Phillips and Margolis (1999) also had major reservations as to using ethics to teach business ethics. However, for many the problem is not ethics per se but the actual variant of ethics with rule-based ethics the culprit. As a result Alasdair MacIntyre is promoted by many business ethicists (amongst others see Brewer, 1997; Horvath, 1995; Moore, 2003) who favour his championing of virtue ethics over utilitarian or deontological theories. That, however, might not be as simple as it sounds. The Australian ICT industry contains diverse bodies with some, as we discuss with regard to our interviews, having very different priorities to others. Identifying a commonly accepted virtue in such a diverse body might be every bit as difficult as agreeing on Hill’s understandable moral proposition. MacIntyre sees virtues as “significantly defined by local social or cultural perspectives” (Arthur and Carr, 2013, p. 29). But Australian ICT professionals experience cultural differences, as we discuss in the paper, and MacIntyre himself has argued that given such circumstances “there can be no common moral education” (Arthur and Carr, 2013, p. 29). If that is so teaching business ethics to ICT professionals as it is usually taught is increasingly futile. Instead we should be seeking a way to help ICT professionals identify ethical problems despite those circumstances.

Such an argument has conceivably been accepted by our leading educators. Whilst past generations of educators thought the university should provide a moral education this is no longer the case which is why ICT professionals increasingly grapple with this in their workplace. Glanzer and Ream (2008) quote contemporary leading educators as, contrary to the expectation of their predecessors, insisting that when it came to moral questions the faculty left it to the students to find their own answers as the faculty could not provide them. In making that argument they too invoke MacIntyre’s observation as to contemporary universities having less agreement than ever regarding “what it means to be fully human” (Glanzer and Ream, 2008, p. 114). As to why this was not so in the past, they explain in that prior period the existence and acceptance of a “metanarrative (by which) we mean a story” (Glanzer and Ream, 2008, p. 114) provided both understanding and guidance and, furthermore, knowledge as to those virtues which should be acquired. Without such an acceptable metanarrative for ICT professionals there can be no general consensus as to any of that. If we are serious about helping ICT professionals identify ethical problems despite their circumstances much of our effort must be in creating for them a suitable metanarrative.

Glanzer and Ream (2008) do not mention Hill (1995) but their arguments endorse his as to moral truths not being reliant on empirical evidence with the result that there is little consensus regarding them. Hence “ethics became marginalised as a field of knowledge” (Glanzer and Ream, 2008, p. 115). Such circumstances do not however negate morality. On the contrary all they do is stress the necessity of finding “some other basis for moral commonality” (Glanzer and Ream, 2008, p. 115). That is increasingly necessary for those in the ICT profession. Glanzer and Hill explain how the desire of the universities to provide practical courses led to “ethics largely disappear(ing) from the curriculum” (2013, p. 293). Later it reappeared in the guise of “narrow professional ethics courses” (2013, p. 293) such as computer ethics but for the reasons explained by Hill (1995) and also by Arthur and Carr (2013) such courses cannot readily be taught by means of utilitarian, deontological or virtue ethics as is unfortunately usually the case.

Criticisms of utilitarian, deontological and virtue ethics are not a recent development. Ellerman arguing that at times “moral aspiration is absurd” (1998, p. 192) cites approvingly “Nietzsche’s suspicion that morality is

eminently dangerous” (1998, p. 191). Friedrich Nietzsche (1844-1900) was not alone in harbouring major misgivings about Kant describing him as “a moral fanatic” (Nietzsche as quoted by Russell, 1972, p. 761). Nor was he the first to dismiss Mill as a “blockhead” (Nietzsche as quoted by Russell, 1972, p. 762). Indeed, he objected to Christianity arguing that it promoted a “slave morality” (Nietzsche as quoted by Russell, 1972, p. 765) and would not brook contemporary virtue ethics. But Nietzsche, whilst he might have helped instigate a growing disenchantment with all those philosophies, lived in a time when most accepted them. As such for the vast majority the prevailing metanarrative held. It is the decline of any dominant metanarrative which is our major concern regarding the ability to improve that ethical awareness which ICT professionals require to identify ethical problems.

For an extremely long period whilst everything changed everything, paradoxically, remained much the same. The Christians closed Plato’s Academy (Rosenstand, 2006) but nonetheless appropriated much of Greek philosophy for their own purposes (Neusner and Chilton, 1997). As such despite these changes, or perhaps regardless of them, a dominant story held sway and provided society with a metanarrative it could subscribe to and around which some consensus could be acquired.

Brown has argued that our search for “objective knowledge, universal laws and absolute truths was a myth, legitimized by a high-level story-line, or metanarrative” (1994, p. 37). Most significantly this metanarrative could vary but what was essential was that it be accepted. However, according to Brown this “potency of metanarratives has declined” (1994, p. 37): indeed, he disputes that there is any longer the acceptance of a metanarrative. That has dire implications for the teaching of morality to ICT professionals for the very reasons which Hill (1995) and Arthur and Carr (2013) explained. Without the widespread acceptance of a metanarrative any ethical discussions are bound to be meaningless as there can be no underlying acceptance of any moral propositions. This is the fate of ethics subjects being taught in ICT courses. Such subjects whether they are rule-based or employ virtue ethics, rely on techniques to use personal judgements in moral decision making (Al-Saggaf and Burmeister 2012).

It is for that very reason that we propose creating a website which whilst not restricted to members will be available through the Australian Computer Society (ACS). The ACS is the premier ICT professional society in Australia, with approximately 18,600 members. It accredits university ICT courses and is sought out by government for input on technology-based policies affecting the nation. Although not addressing the above metanarrative void completely, the ACS has a Code of Ethics that is prescribed as a normative standard that should be upheld by members of that professional society (Bowern et al. 2006; Burmeister 2013a; Burmeister and Weckert 2003). A web resource sustained by the ACS will provide a resource whereby ICT professionals can respond to ethical dilemmas. And it will simultaneously for those in the Australian ICT profession meet all of the requirements of a metanarrative: it will provide the objective knowledge and universal laws to any in the ICT industry seeking them. Our research reveals the clear preference of practising Australian ICT professionals for internal strategies which they perceive as more effective than external ones in dealing with ethical issues within their workplaces. Such a perception could not exist if these professionals did not already view themselves as having some enhanced status. Their acceptance of that status provides the basis for the provision of the metanarrative which our proposed website will create.

Fiction, arguably, has destroyed most metanarratives. After all, “the invention of the novel privatised myth” (Gough, 2007, p. 43). In doing so it destroyed most of the public myths which provided the prevailing metanarrative. But for ICT professionals there must be regarding their roles some “privatised myths” which create a jointly shared social perspective. That perspective alone would explain the acceptance of an enhanced status for their profession and for our purposes it provides the basis for the creation of a metanarrative whereby consensus can be attained. Regarding such a consensus we are not trying “to fake a coherence that does not exist, but to capture the chaos that does” (Gough, 2007, p. 47). It is for this very reason that we propose that our envisaged website has some tailoring ability which allows ICT professionals to utilise what best serves their specific circumstances. Hence some understanding of our proposed website as a metanarrative, and also its communication to ICT professionals, will help them both recognise the ethical problems they encounter in the workplace and solve them.

METHODOLOGY

A mixed methods approach has been adopted for the present study. The main research question was: What are Australian ICT professionals' perceptions regarding the ethical problems they face in the workplace, and how can these problems be resolved? Three phases were involved, the first two of which are addressed herein. The first phase involved a quantitative survey of members of the ACS, administered using SurveyMonkey.com, to allow the participants to fill the questionnaire and return it over the internet. The survey was informed by the results of a previous survey conducted by Lucas and Mason (2008) and also by the instrument they used. All active ACS members (approximately 18,600) were invited to participate in the web-based survey by direct email

sent to them by the ACS once on 12 September 2013. The survey was closed on 6 November after the response rate reached 12.4%. The online questionnaire was prefaced by the ethics consent sheet (including assurances of anonymity) and a description of the study. The questions comprised both closed ended and open ended questions.

The second phase of the study involved a set of semi-structured, in-depth interviews with 43 participants selected from those who responded to the first phase. The interviews were conducted during the month of February 2014 and took place in six Australian capital cities. The purpose of these follow-up interviews was to discover participant perceptions in regards to the nature of the ethical challenges experienced in the ICT workplace and how exactly these problems are often solved. Purposive sampling was adopted to select the participants from those who had indicated a willingness to be interviewed. Purposive sampling allowed the researchers to choose cases that were representative of all sub-groups and personal characteristics which might be of interest to the study (Patton 2002). The sample drawn included professionals from a range of ICT organisations, both large and small, government and private sector, representing different geographic locations, ages, gender, types of jobs, and employment experience. All the interviews were tape recorded and transcribed verbatim.

The transcribed interviews were analysed using thematic analyses. Data analysis was completed using QSR NVivo 10. The unit of analysis was each individual interview document. Data analysis proceeded as follows. First, the interview documents were read several times so the researchers could familiarize themselves with the data collected. Next, free nodes (i.e. nodes not organized or grouped) were created based on keywords in the interview documents. Similar text within the interview documents was located and assigned to these nodes. These nodes then acted as 'buckets' in the sense that they held all the data related to a specific node. At the end of the creation of the free nodes these free nodes were further divided into tree nodes. That is, broader categories were developed to group the free nodes. This was to create a hierarchy that made it easy to make sense of the data and facilitate interpretation.

The third and final phase of the research involves focus groups with ACS Fellows and other senior ICT professionals, to determine the composition of the web resources, to better match strategies for solving ethical problems to those problems, and to refine those strategies to be most effectual. That phase is expected to be completed by the end of 2014 and is therefore not reported in this article.

FINDINGS

Out of the 2,315 respondents who responded to the survey, 84.5% (N=1940) were males, and 15.5% (N=356) were females. By age, 30% (N= 692) of the respondents indicated that they were under 35 years; 22.3% (N=516) indicated that their age fell between 36 and 45 years; 25% (N=576) said their age fell between 46 and 55 years; and 22.7% (N= 524) indicated that they were 56 years and above. According to the survey results, 33.8% (N=698) of the participants in the study described their occupational category as manager, 14.8% (N=307) said they were developers; 24.3% (N=502) indicated they were consultants and 13.3% (N=277) said they worked in technical support.

To understand how Australian ICT professionals feel about certain strategies for identifying ethical problems in the workplace and solving them, a scale that comprised nine statements was used. The statements covered codes of ethics, personal ethics, company policies, company culture, ethics committees, mission, value statements, ethics education, industry licensing and industry standards. The nine statements were prefaced by the statement 'please indicate your feeling about the following statements'. Respondents were asked to indicate their feeling using a 6-point Likert-type scale (Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree and Not applicable). A principal component analysis with varimax rotation was used to extract interpretable factors. The analysis was carried out using IBM SPSS Statistics Version 20 and was repeated 9 times to satisfy the requirements of this analysis. Upon inspection of the results the following requirements were met: The sample size was 2,315. The correlations matrix for the variables included many correlations greater than 0.30. All variables had a measure of sampling adequacy greater than 0.50 (as the Anti-image Correlation table revealed). The variables with measures of sampling adequacy less than 0.50 were removed (as the Anti-image Correlation table revealed). All the variables had a communality greater than 0.50. The variables that had a communality less than 0.50 were removed. The overall measure of sampling adequacy for all the variables was greater than 0.50 (see Kaiser-Meyer-Olkin (KMO) value below). The overall KMO Measure of Sampling Adequacy was 0.713. The probability associated with the Bartlett Test of Sphericity was less than 0.001. The derived components explained more than 60% of the variance in each of the variables. There was no complex structure so as to extract clean variables that correlated highly within each factor. None of the components had only one variable in it.

A scree plot initially produced three factors. However, after the analysis was repeated 9 times, a scree plot produced only two factors which were extracted in the final analysis. The final analysis yielded a reduced scale of five items that loaded on these two factors. The two extracted factors were: internal strategies and external

strategies. Both factors had an eigenvalue greater than 1.0. (internal strategies, 2.238; external strategies, 1.610). The two factors accounted for 76.96% of the total variance in each of the variables. All the statements had factor loadings of more than .7, indicating that the variables are highly correlated within their factors, see Table 1.

Table 1. The results of the factor analysis

Rotated Component Matrix^a		
	Component	
	Internal	External
My company policies help me in identifying the ethical problems and solving them.	.889	.116
My company's culture helps me in identifying the ethical problems and solving them.	.898	.060
My company's mission/ value statement helps me in identifying the ethical problems and solving them.	.774	.297
My industry licences or certification help me in identifying the ethical problems and solving them.	.123	.874
The industry standard I am adopting, such as CoBIT and ITIL, helps me in identifying the ethical problems and solving them.	.161	.861

The first factor, internal strategies, accounted for 44.8% of the variance after rotation. It consisted of the following statements: My company policies help me in identifying the ethical problems and solving them. My company's culture helps me in identifying the ethical problems and solving them. My company's mission/ value statement helps me in identifying the ethical problems and solving them.

The second factor, external strategies, accounted for 32.2% of the variance after rotation. It consisted of the following statements: My industry licences or certification help me in identifying the ethical problems and solving them. The industry standard I am adopting, such as CoBIT and ITIL, helps me in identifying the ethical problems and solving them.

Interview findings

On the one hand, the findings from the qualitative interviews were consistent with the findings from the quantitative survey particularly with regards to two important aspects. First, the findings from the qualitative interviews revealed that internal strategies for helping ICT professionals identify ethical problems in the workplace and solve them are more effective than external strategies. Second, the findings from the qualitative interviews show that within the internal strategies category, company's policies and company's culture are the two major strategies for ensuring ethical behaviour in the workplace.

On the other hand, the interview analysis uncovered an additional internal strategy for dealing with unprofessional practice that the quantitative survey did not identify, because it did not ask participants about it. This additional internal strategy is auditing.

Unprofessional behaviour: policy and management modelling

Although interviewees found the organisation's policies to be most effective, having policies written and stored somewhere is not enough. Interviewee 10 (44, Female, Adelaide) said they need to enjoy "a high level of visibility" adding: *I know certainly at say for instance the Working Women's Centre as part of the ICT ethics there we've developed a policy on ethics and then if they tender any work out to individuals then we put that with the contract etc so that people have got that level of visibility.* But to make the policies more effective, Interviewee 12 (41-45, Male, Adelaide) went as far as suggesting staff should sign the policies: *don't just send the policy out, make them sign the policy,...have something that says by signing this you acknowledge that you have read the aforementioned document and you understand what it means.*

A number of interviewees also spoke about the importance of the role of management in making the policies more effective. Interviewee 23 (55, Male, Melbourne) said first you have to communicate the policies to staff and explain how these policies could apply to them, then the management team has to reinforce these policies in their actions. Three interviewees concurred with this view, adding additional keywords: "enforcement from the top", "not just paying lip service", "following through with them [policies]" and "enact them" [policies]. The following quotation from Interviewee 23 (55, Male, Melbourne) sums up these views: *The policies can state the behaviours desired but then that has to be lived by the management and I think I've got a great manager who does that.*

Alternatively, not enforcing the organisation's policies can encourage unethical behaviour and so Interviewee 3 suggested that management should support the policies regardless of the discomfort that doing that may bring about: (if managers informed staff) *"We are supporting this and we are doing it," and then followed through and modelled it, despite complaints.* She went on to highlight the issue of the uneven application of policies, explaining why this uneven application of policies is problematic: *having organisations that stood by their policies and procedures would be a really good thing, because that, that's, it's so insidious that people learn that they're supposed to say one thing but do another. That, once, once that has become part of your working life well then, you completely undermined ethics.* Company policies can be an effective mechanism in promoting professionalism in the ICT workplace but they need to be communicated to staff effectively, enforced evenly by management and lived by them.

Unprofessional behaviour: Corporate culture

A number of interviewees found the organisation's culture to be effective in dealing with unprofessional behaviour in the ICT workplace. On the importance of culture, Interviewee 25 (31, Male, Melbourne), for example, argued: *The culture of a workplace makes a big difference. ... being in a government organisation the focus is very much on providing service to the public, and so that's where you can, from a moral point of view you can actually look at, is this in the best interests of what we're trying to do as an organisation?*

Although expressing similar thoughts, Interviewee 13 (67, Male, Brisbane) pointed out that fostering an ethical culture in the workplace is not an easy task: *Culture is really, really important in the organisation. And culture's a hard animal to get a hold of, very hard animal to get a hold of. But, so a lot of work goes into that.*

Interviewee 22 shared how corporate culture can be incentivised through performance review mechanisms: *They also introduced with equal weight, a set of behaviours, and they had the people's behaviour assessed by their subordinates, their peers and their superiors, and they would equally weight it. So, if you got a 1 – top score over here – but you got a D over here, which was the lowest score, you basically got no bonus because not only do they want you to do well, they wanted you to behave well, which was things like not being difficult to get on with, promoting the culture.*

Interviewee 13 (67, Male, Brisbane) gave an example about embedding corporate values: *One of the things that we've done a lot of work to do to foster in the organisation is a culture of cooperation and information sharing. So you don't get any kudos for being the single go-to guy about anything. You get kudos for sharing that information and assisting your colleagues to become competent.*

The respondents appeared to suggest that fostering an ethical culture in the workplace can be difficult but possible if the people at top model ethical behaviours and attitudes in the workplace, and strictly enforce high ethical standards. Regulations, industry standards and staff development programs can also have a positive effect on fostering an ethical culture within an organisation.

Unprofessional behaviour: Auditing

Another theme that transpired from the analysis of the interviews is the role auditing plays in ensuring ICT employees are doing the right thing. The survey did not ask the study participants about auditing (i.e. it was not one of the nine scale statements). This is because the survey was influenced by an earlier survey conducted in 2006 and the recent literature in this area, and both of these did not indicate auditing as strategy for dealing with unprofessional behaviour. During the interviews, however, participants brought up auditing as a strategy. Interviewee 1 (54, Male, Perth) for example said: *The only affective way to deal with it is independent audit. So when I was consulting a lot on my own if I found problems I would call in a group audit cause that's what group audit's job is and I can call in group audit... So sometimes the way forward as a consultant is to go 'can you just come and have a look at all of this' and they come in. A good group audit will come in and they will open everything out.*

Interviewee 2 (69, Male, Perth) brought up the issue of evidence arguing if ICT professionals know they will be audited they will keep evidence of all the activities they complete. Similarly, Interviewee 4 (50, Male, Perth) believed that the act of keeping evidence is in itself useful because it can minimise the opportunity for wrong doing: *If you've got proper documentation then there could be very little [room], as I can see, for foul play or deceiving.* But Interviewee 3 (49, Female, Perth) noted that there could be problems with the attitude of always having to document evidence in case of an audit. She pointed out that paying lip service to audits can be a problem, because as long as the evidence shows that everything is 'OK' then everything is perceived to be 'OK'. For this reason independent audits can be more effective as Interviewee 1 (54, Male, Perth) explains: *The nice thing about group audit and the reason that that is a separation of function is that they're independent. So they can come in, they can find the problem, they can address the problem and nobody is – it's I'm not snitching on anyone, I'm not having to ... it takes all that away.*

As can be seen from this last quotation, independent audits can be effective because they can overcome the problem of conflict of interest as the auditors are usually from outside the organisation and their aim is not punish people, but rather, to fix problems.

DISCUSSION

From the surveys and interviews, 12 key areas of ethical challenge were identified for the ICT workplace. These were: Inaccurate estimation; Misrepresentation of skills; Projects not meeting contract conditions (compromising quality, requirements, security); Not following project methodology; Lack of resourcing; Illegitimate access; Pressure; Not understanding the business needs; Not gathering requirements properly; Bullying; Conflict of interest (procurement); Incompetence (also lack of skills and lack of qualifications, lack of knowledge, not up to date); Outsourcing; and, Covering up.

Also identified were 16 effective strategies for meeting the above ethical challenges. These were: Codes of ethics; Certification; Counselling; Mentoring; External audits; Internal culture of organisation; Internal polices; Ethics education; Ethics training; Putting the right processes; Good governance; Following standards; Licensing; Following project management methodology; Raising awareness; and, Whistle blowing.

An unexpected development in the research was that interviewees identified a list of things that lead to unethical behaviours. Although interview analysis has revealed what might be done to avoid such situations, this is also an area that the ongoing research project needs to explore further. That is, rather than only addressing how to deal with ethical problems when they arise, we can also address the proactive approach of how to create work environments that discourage unethical behaviours. The ten main types of unethical behaviour identified were: Greed/self interest/ cost saving/ money; Pressure (from top) to complete projects quickly (project manager, client, executives, end users)/ Unrealistic expectations; Poor management; Poor communication; Job uncertainty; Doing the wrong thing when it is not your fault and you have no choice; Projects complexity; Lack of respect towards IT; Lack of trust (between IT and Business); and, Lack of understanding of consequences.

Resourcing ICT professionals

As stated above, the metanarrative of the past has been lost. The multicultural nature of the Australian workplace and the cross-cultural reach of ICT have made a common normative ethical standard difficult to maintain. This is not unique to ICT. An empirical study by Lloyd and Busby (2003) 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. Similarly for ICT, Burmeister (2013b) showed that: *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.*

In the light of this meta-perspective, ICT professionals need a way of dealing with ethical challenges. Thus an outcome of this present study is the development of a set of Internet resources that will be available through the public ACS website, that is, not restricted to member only access.

Further research

Developing the web resources is the subject of the present work-in-progress. A prototype has been developed specifically to gather requirements from the ACS members regarding what they would like to see in website. Focus groups will be conducted in September 2014 in six Australian capital cities, involving ICT professionals, with Fellows of the ACS at each one. Fellows are senior people who have been recognised for their outstanding contributions to the ICT discipline and their input to this study will be invaluable. However, a wider mix of participants is sought. Excluded are recent graduates, because significant experience in the ICT workplace is required to achieve the aims of the focus groups. Those aims include refining the identified strategies, finding ways to create workplaces that discourage unethical behaviours, and most importantly, determining the appropriate and structure of the Internet resources that will be available on the ACS website.

CONCLUSION

The finding that Australian ICT professionals find internal strategies more useful in dealing with ethical workplace issues compared to external strategies was evident in both the surveys and interviews, but the

interviews gave rise to the auditing theme and to the identification of unethical behaviours in ICT workplaces. The 2013 survey followed the format and questions of an earlier survey conducted in 2006 and supplemented by questions arising from the 2006 findings and related literature. But in the interviews participants were able to articulate other choices.

The present study is ongoing with the next step being the development of Internet resources, based on the findings to date. The consequent website will be available through the ACS, but not restricted to members. It will resource ICT professionals to better deal with various ethical challenges as they arise. The final website design has yet to be decided. For instance, work to date on this project suggests that one size does not fit all. That is, whereas the survey suggests that there are certain challenges that dominate, the interviews suggest that different areas of ICT employment would prioritise those challenges differently. Someone working as a contractor for the public service would not list the order of challenges in the same way as a network administrator, or as a help desk operator. Therefore the site might need to have a tailoring ability that will allow people to quickly drill down to the types of strategies that best serve to overcome the ethical challenges most prevalent to their work function.

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