MMIM592: Research Project in Information Management

Ethics in the IT Profession: Does a Code of Ethics have an Effect on Professional Behaviour?

February 2016

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Abstract

In many professions, membership of a professional body is a requirement to practice that profession, and adherence to a code of ethics is an integral part of that membership. Information Technology is a relatively young profession, and does not require its workers to be a part of any association or adhere to any specific code of ethics, despite the fact that the ever-changing nature of technology enables ever greater opportunities for the undesirable consequences of computer misuse. Codes of ethics have been developed to attempt to guide professional behaviour, but there have been very few studies done showing whether or not a code of ethics has an effect on worker behaviour, with no recent studies available, and none from New Zealand. This study interviews IT professionals working in Wellington, half of whom are provided with a copy of the IITP Code of Ethics, to provide indicative findings on whether or not the presence of a code of ethics has an effect on their responses. Participants were asked to discuss three short case studies, and the responses from the two groups were compared with each other, and to a benchmark analysis of the case studies. The results showed remarkable similarities between the responses of the two groups, and both showed similarity to the benchmark, showing that the presence of a code of ethics has no impact on the responses of IT professionals to ethical situations. The results also showed that interviewees generally had a negative view of codes of ethics, seeing them as not necessary, not highly publicised, and less useful as an aid than organisational processes and guidelines, while finding that common sense and an internal moral code were more useful as guides to ethical behaviour. The small sample size means that these results are indicative only, and this research can be used as the basis for a larger study.

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Introduction

Professionals, and people who work in acknowledged professions, employ specialist skills and knowledge in order to carry out their duties. How the use of these skills and knowledge are governed is embodied in Professional Ethics, and can be formally set out as a Code of Ethics. Many professions require that their members qualify to be admitted to a professional body to be able to practice, and have adherence to a code of ethics as an integral part of that membership. Codes of ethics, particularly where human life is in question, can be heavily policed, with severe disciplinary measures in place for those who go against the tenets of the agreement.

Compared with many disciplines, Information Technology as a profession is relatively young, and is constantly developing, with new types of roles emerging as technologies evolve. These new roles respond to the increased variety of tasks computers can perform, and both of these phenomena enable more opportunities for the undesirable consequences of computer misuse. Therefore, the progress in information technology can leave an ethical vacuum (Oz, 1994). Due to the increasing interconnectivity of systems, even seemingly local issues can have global implications (Abi-Raad, 1999). To deal with ethical issues facing computer workers as technology began to grow and diversify, codes of ethics for IT began to emerge in the 1960s through the professional associations of technology workers, which had recently come into existence (Oz, 1994). Today, there are many professional bodies around the world who's job is to promote good practice, diligence, and ethical behaviour in IT and technology-related professions.

While the rapidly changing pace of technology brings ever new and unforeseen ethical situations into play, ways to manage this lag behind. Codes of Ethics attempt to provide principles and guidelines to workers facing ethical dilemmas, but IT professionals are not required to be bound by such a code. The Institute of Information Technology Professionals (IITP) in New Zealand is the oldest professional body for IT in New Zealand, and in 2012 released a new version of the IITP Code of Ethics (since updated in 2015), by which its members are bound (IITP, 2015). However,

there is no imperative for those working in the field of IT to belong to this or any other professional association in order to perform their job. It has been said that "most information systems professionals, in practice, are not bound by an ethical code, since the professional groups do not wield that type of power" (Wood-Harper, Corder, Wood, & Watson, 1996); over the last few decades this has not changed.

It is important to define what is meant by a Code of Ethics. Whitehouse et al. (2015) identify a Code of Ethics as a series of general statements about a profession's moral values, used to guide practical decision-making. A Code of Practice outlines in greater detail the expected behaviours and processes within a profession; the level of detail facilitates easy detection of code violations. A Code of Conduct addresses the expected behaviours of an individual in a professional setting. In New Zealand, the IITP has a Code of Ethics, which outlines eight tenets by which members are bound to adhere. The organisation also has a Code of Practice which provides guidelines for actions and decision-making in a professional setting, and is not mandatory but is strong endorsed. Similarly, the Australian Computer Society has a Code of Ethics comprising six core values, and a Code of Professional Conduct which describes expected behaviours against the tenets of the Code of Ethics. When talking about guidelines for professional ethics in practice or in literature, the three terms above are often used interchangeably.

But what sort of effect does a code of ethics have on the behaviours and conduct of IT professionals? Codes of ethics are a key component of the membership of professional organisations, including those for IT. Do they have an effect? Are they effective tools to help moderate behaviour and guide people to make ethical decisions? Is there a need to enforce the membership of professional associations in order to ensure people adhere to an ethical code in order to practice? Do people behave in an ethical fashion without the guidance of a code of ethics? The aim of this research is to provide indicative insights into the effects of the presence of a Code of Ethics on the behaviour of IT professionals when faced with resolving an ethical dilemma in a professional situation. It will provide an insight into how ethics are perceived and practiced in IT in New Zealand, and will provide a basis for further study in the area. The research question being posed is **does the IITP Code of Ethics influence the behaviour of IT professionals?**

Literature Review

Codes of ethics relating to the IT profession came into existence in the late 1960s as a response to the evolving nature of technology and the potential for computer misuse that arose from this (Oz, 1994). Abi-Raad (1999) notes that there are many codes of professional ethics relating to IT throughout the world, and that this can pose a problem as professionals ponder which codes they ought to adhere to. He proposes a framework to assist the creation of an environment where students can assess and evaluate the many codes off ethics they will encounter, in order for them to successfully negotiate the many codes of ethics they will encounter in their professional lives, as well as enabling them to be able to participate in the debate surrounding the issues of a global code of ethics for IT. Whitehouse et al. (2015) also discuss the growing need for global standards in ethics for ICT in light of the growing use of Cloud Computing and the interconnectedness of devices across national boundaries. They note that different cultures have different ways of looking at ethics, and suggest ways that the International Federation for Information Processing - an umbrella society encompassing over 50 ICT societies worldwide - could enable decision-making around global ethical standards. Brandt & Rose (2004) also discuss how ethics can be applied in a global environment. Likewise Oz (1992) makes a case for a unified code of ethics across professional associations, and suggests that the starting point should be the similarities between various codes. Miller & Voas (2008) recognise that despite their differences, most codes of ethics contain general themes of integrity, honesty, and a responsibility to society, and that these values should be used both to help protect the integrity of information itself, and to help create an environment where IT professionals are able to follow their conscience when making ethical decisions.

Oz (1994) carries out a very thorough comparison of the codes of ethics — in place at the time — of several prominent professional associations in the field of IT. He concludes that, although IT is a relatively new field, a global code of ethics will enhance the public's perception of IT as a true profession. Anderson (1992) also compares codes of ethics from various computing associations and benchmarks them against the (then) recently-developed code of ethics of the ACM. This study found that an important difference between codes of ethics is whether they are designed as

aspirational statements or used as regulatory documents. It also notes the impossibility of writing a code for IT that is completely definitive due to the ever-changing nature of technology.

Cleek & Leonard (1998) note that little research has been done to determine whether or not codes of ethics have any effect in promoting ethical behaviour in corporate settings. They carry out a student survey where half of the participants are provided with an organisation's code of ethics, and from this show that codes of ethics do not have an influence on a person's ethical decision-making behaviour. However, Peslak (2007) found that the act of reading the code of ethics can improve a person's ethical judgement in certain scenarios. Where studies look at the effect of a code of ethics on behaviour, they often use the code of ethics of a recognised professional association (Peslak, 2007), which is presented to participants at the time of the study. Harrington (1996) determines whether or not a subject is affected by a code of ethics or not on whether or not the organisation in question has a code of ethics in place.

Both Thong & Chee-Sing Yap (1988) and Peslak (2007) use student populations to determine moral intent and ethical decision-making. in the latter case, the author defends the use of students on the basis of previous work, which believes most undergraduates will have worked in entry-level positions the workforce, and that when they graduate these students will be expected to have a fundamental understanding of ethical business perspectives (Cleek & Leonard, 1998). This is questionable logic, as many undergraduates will never be in a position of responsibility within their chosen profession until many years after graduation, and may not have the experience to recognise an ethical dilemma in a professional setting despite having taken a paper in business ethics. The studies both show, though, that a code of ethics has a positive effect on behavioural outcomes. Lorents, Maris, Morgan, & Neal (2006) use a student population to establish ethical attitudes in business and IS undergraduates, from a degree programme which includes an ethics course. They found that amongst students, the degree of intent towards ethical behaviour was dependant on their perceptions of the scenario; some situations were deemed to be a greater breach of ethical protocols than others.

Harrington (1996) uses working professionals to determine the effects on behaviour and intentions of computer users of a code of ethics. This study found that although corporate codes of ethics tend to have a positive effect on moral judgement, IS-specific codes have less of an impact,

especially where subjects have been assessed as more likely to commit computer-related misdemeanours; if workers display a denial of responsibility, they are less likely to be impacted by a code of ethics. She also notes that personal moral beliefs and commitment have a greater effect on actions than imposed controls, and that codes of ethics are not a fool-proof method of ensuring compliance. Gattiker & Kelley (1999) see the effectiveness of codes of ethics as being inconsistent, and carried out an exercise to determine the moral judgements of internet users. They suggest that as these findings reflect how users behave, they are a good starting point for the development of more effective policies and guidelines. Banjeree, Cronan, & Jones (1998) suggest that another way of controlling ethical behaviour of computer users is to identify individuals who are more likely to behave unethically, as even with preventative measures such as a code of ethics and ethics training, improper computer practices continue to be a problem. This supports the work of Harrington (1996), who establishes that employees who are less likely to behave with moral intent are less likely to be affected by the presence of a code of ethics.

Ethical decision-making in the context of IT projects is discussed by Stapleton (2008), who notes that traditional development methodologies do not incorporate any form of ethical consideration. He shows that system development provides little guidance around ethics, and suggests that ethical guidelines in to systems development as a process would help when problems arose in a project. This is also noted by Watson et al. (1996), who suggest that an ethical analysis as part of the development process would assist in highlighting ethical perspectives and how they might affect the implementation of information systems. Markus (2014) advocates the use of future-oriented analysis to mitigate against negative effects that new technologies may have, and to incorporate ethical consideration into the design of new technologies. Agresti (2004) proposes a framework for IT professionals to assist them in ethical decision-making. This framework is presented in response to the fact that the IT environment is constantly changing and presenting issues which are increasingly ethically complex. It also provides a mechanism for professionals to give back to the community, through discussion of ethical issues and contribution to the pool of ethical resources. Kock & Davison (2003) suggest a code of ethics as a means of dealing with issues of plagiarism in IS research, and propose that the best way of achieving the desired outcomes would be association with a professional society, where breaches of ethical codes can result in the inability of a person to operate professionally.

It is worthy of note that there has been no addition to the literature on the effects of a code of professional ethics in the IT sector in recent times. Also relevant is that all previous literature on the effects of codes of ethics on professional behaviour use quantitative methods to gather data, specifically in the form of questionnaires and surveys. It is felt that a qualitative study, using interview-derived data from professionals currently working in the IT industry, would provide an insightful and current view of the effects of codes of ethics on the ethical behaviour of IT professionals.

Method

To investigate the effects of a code of ethics on the professional behaviour of people in the IT industry, an experimental research study was devised in order to give indicative results to the research question posed above. The research design largely followed the process set out by Bhattercherjee (2012) in his chapter on *experimental research*. It comprised a basic *two-group design* consisting of a *control group* and a *treatment group* manipulated by a single *independent variable*. Experimental research was chosen as it is considered to be a very rigorous form of research. Although experimental research is best suited to explanatory research rather than exploratory studies, the presence of an easily-manipulatable independent variable meant that it was able to be adapted for use in this instance. The setting in which the experiment was conducted was meant to reflect real-world professional settings as closely as possible, in order for the results of the experiment to be high in *external validity*, meaning that results could be applied ot real-life settings.

A qualitative approach best met the needs of this study, as limited research has been done in this area, and none on a qualitative basis. The aim of the experiment was to produce a set of qualitative data which could be used to indicate whether or not the presence of a code of ethics had any effect on the responses of IT professionals when considering an ethical situation. Previous studies looking at the effects of a code of ethics on worker behaviour have gathered quantitative data through surveying participants (Peslak, 2007., Cleek & Leonard, 1998., Thong & Chee-Sing Yap, 1988), and it appears that no studies have been undertaken in this area where qualitative data has been obtained. Qualitative data can be described as "well suited for locating

the *meanings* people place on the events, processes, and structures of their lives and for connecting these meanings to the *social world* around them (Miles, Huberman, & Saldana, 2014), and can therefore be seen as an appropriate and effective means of gathering data for this research. The study consisted of performing interviews with two groups of people currently working in IT; one group with access to the IITP Code of Ethics (treatment group), and one group without (control group), with the dependant variable to be manipulated being the presence of the IITP Code of Ethics in the preparation for, and in the progress of, the interview. The aim of the exercise was to see if the presence of a code of ethics had any impact on the responses of participants, who were asked about how they would deal with ethical issues in a professional setting.

In order to provide a context in which participants could answer questions about their ethical behaviour, case studies depicting professional scenarios were used. A case study is "a popular instrument to provoke [people] to grapple with complicated moral problems and quandaries" (Spinello, 2003). Case studies are a way of eliciting responses by personalising a situation for a respondent, while being a less intimidating medium when respondents are faced with sensitive issues (Gattiker & Kelley, 1999) and in this instance were used to allow interviewees to become active participants in each scenario when talking about behaviours and actions that they might use.

In 2014 the Australian Computer society (ACS) published a set of short case studies accompanied by references to the relevant clauses of its own code of professional conduct (Australian Computer Society, 2014). Three of these short cases were chosen and adapted to fit a New Zealand professional setting, and they were used as the basis of the interviews. The cases were chosen on their perceived interest value and relevance to the people to be interviewed, as well as on their concise form, so that participants would find the material stimulating and thought-provoking, but would not be faced with an onerous amount of reading material; each case study was a single paragraph of around 200 words. Each participant was provided with the three case scenarios two days before the interview, and half of the participants were also provided with a copy of the IITP Code of Ethics. Participants were assigned to either treatment or control groups randomly based on the order in which they undertook the interview: those scheduled for earlier

interviews proceeded with no code (control group), and later participants had the code provided (treatment group).

Each of the case studies used for the interviews was adapted slightly, so that instead of their original Australian setting, they could provide a familiar and contemporary New Zealand setting for the participants to engage with. The adaptions made to the text of the cases were minimal; references to "Federal government" and names of government departments were amended, and technologies were adapted to reflect current developments. Each case was also originally accompanied by references to the relevant clauses in the ACS Professional Code of Conduct as an illustration of how the code would apply in each scenario. These were removed for the purposes of the interviews, but were "translated" into applications of the IITP Code of Ethics to the scenarios, so that this application of the Code of Ethics could be used to benchmark the findings when analysing the results.

The people chosen to be interviewed were IT professionals working in Wellington with a range of experience within the IT industry, in both the public and private sectors. Job roles included Solutions Architect, Project Manager, and Business Analyst, and each participant had extensive experience working in IT projects, with many employed as IT consultants or contractors. A key differentiator of these participants was that they have each worked in a range of organisations throughout their careers; in this regard, their experience is seen to be less coloured by the culture of the organisation they are currently working in, and their responses are more likely to be a true reflection of their own personal moral intent when faced with an ethical dilemma rather than a reflection of organisational values or culture. The participants were recruited through personal contacts, although none of the interviewees were well-known to the researcher.

The interviews were carried out in December 2015 and January 2016 (see Appendix 1 for interview structure). In preparation for the interview, each participant was provided with the three case studies (see Appendix 2) and, where appropriate, the IITP Code of Ethics, two days prior to the scheduled event. Participants were asked to read through the case studies and reflect on how they felt about them and how they might manage such situations in their own professional life. Those in the treatment group who were also provided with the Code of Ethics were also asked to read the code (particularly section 1 of the code which outlines the 8 tenets of the code of ethics,

but also the accompanying guidelines if they wished) and think about how this might apply to them in their own work, and whether or not they thought it was a useful document when thinking about the accompanying case studies. The information sheet provided to interviewees outlining the research did not mention the fact that the point of the research was to investigate the effect of a code of ethics on behaviour, as it was felt that this may influence participants — particularly those in the control group – to investigate professional codes of ethics prior to the interview in order to give "correct" answers. Instead, participants were only told that the research was investigating professional behaviours around ethics in IT. The interviews were estimated to last for 30 minutes, and actual interview times ranged from 17 to 38 minutes, averaging 29 minutes.

Findings

All participants were able to provide useful information for use in this study, and agreed to let their responses be recorded, transcribed, and analysed as part of this research. Participants had all worked in the IT industry for at least eight years, with several being involved for over 20. All were also interested in the research topic, and were keen to see a summary of the results at the end of the project.

Analysis of interview data against Code of Ethics

The first stage of analysis of the transcribed interview data was to code the results using a list of researcher-generated codes, similar to the *Provisional Coding* method of Miles et al. (2014). The codes used correspond directly to the eight tenets of the IITP Code of Ethics. Each case study response for each respondent was analysed for descriptive words or phrases which, in context, corresponded positively to one or more of the tenets of the Code. Each code point detected was noted and summarised in table form, and tabulated as to whether they were part of the treatment group (those who were provided with a copy of the Code of Ethics for the interview) or the control group (those interviewed without the Code). The results can be seen in Appendix 4.

Secondary coding was then carried out on the data for each experimental group (treatment and control) to identify themes and patterns occurring in the data. Due to the small sample size, there

were no obvious patterns showing in the emergent themes. The emergent themes for each case are outlined in Table 1 below:

Table 1. Emergent themes from analysis of data against IITP Code of Ethics

	Treatment	Control
Case 1	2. Integrity • Sign off work with recommendations • Don't sell a bad product to make money 4. Skills • Provide a good and appropriate service • Find a way to legitimately fail a test • help customers to get what they want 6. Informed Consent • Follow processes and highlight risks and concerns • give reasons why you would not implement the product • make people aware of the impacts of decisions 8. Competence • Be upfront about issues • Follow processes • Complete scope of work, while highlighting risks and concerns • Use opportunity for review at project end • Report a failed test if possible to do so	2. Integrity • Discourage use of emotive language • Hiding problems is unhelpful • Responsibility to the client 3. Community Focus • Choices define the world you want to live in • Quality of life of peers may be harmed. 4. Skills • Consider enhancing the testing • Experienced testers know what to look for • Substandard product will tarnish reputations 6. Informed Consent • Report issues and discuss them with those affected. 8. Competence • Draft deliverables properly • Discussion is professional • Deliver what is contracted • Document concerns

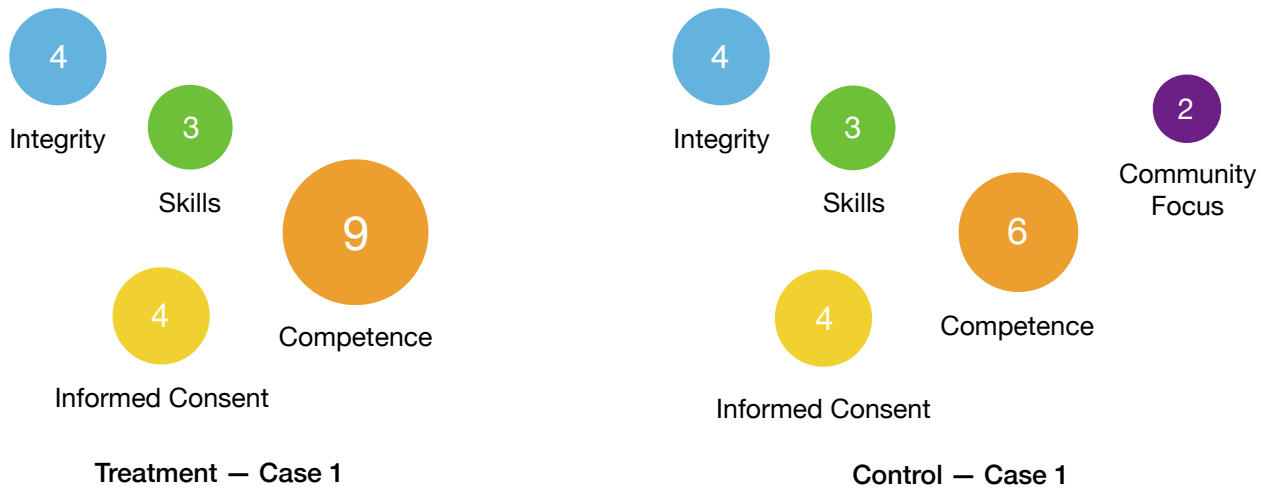|	Treatment	Control
Case 2	4. Skills • Do the job, articulate your concerns, document findings 6. Informed Consent • Seek advice from peers or superiors • Get legal advice • inform the company to ensure the error has not been made in ignorance 7. Managed Conflicts of Interest • Try to manage without escalation • Exit the engagement if necessary, and get guidance on how to terminate the contract • Declare previous work with competitors • Declare within the bounds of your confidentiality agreements 8. Competence • Evaluate usability only, not the code • Document everything, including issues. • Stay within the contract	2. Integrity • There is a duty of care to clients • Assumptions vs. evidence 4. Skills • Use of assumptions based on pre-knowledge from previous clients 6. Informed Consent • Base decisions on legal advice • Inform client of issues • Ensure you are not breaking the law 7. Managed Conflicts of Interest • Exit engagement due to conflict • Consider before engaging with the competition • Ensure you are not breaking the law 8. Competence • Evaluate usability only, not the code • Document everything, including issues.
Case 3	2. Integrity • Transparency and having a fair chance are important • Don't be swayed • Do right by the organisation 4. Skills • Give a valid opinion of the friend's company • Wouldn't go wiht the expensive solution • Let acquaintances know what work is in the pipeline 7. Managed Conflicts of Interest • Declare, and pull yourself out of the process • Put no weight on the personal relationship 8. Competence • There are rules and processes to follow • More than one person should be involved • Appropriate people should be involved • Do it right to avoid problems • Do not manipulate process for your own ends	2. Integrity • The system should be trustworthy, and fair to people 3. Community Focus • There is a risk to everyone's reputation when damning topics get into the public eye 4. Skills • Make the right decisions based on appropriate reasoning • Get the right outcomes for the organisation 6. Informed Consent • Understand the process and follow it • Seek clarification where there is ambiguity • record details of issues and provide this to bosses. 7. Managed Conflicts of Interest • Should be immediately declared. • Document communications with friend, and cease communicating on this issue. 8. Competence • There are rules and processes to follow • Appropriate people should be involved • Warnings for unacceptable behaviour • Excuse yourself from the process

Figure 1 — Count of responses to Case 1

Treatment — Case 1

- 4 Integrity
- 3 Skills
- 4 Informed Consent
- 9 Competence

Control — Case 1

- 4 Integrity
- 3 Skills
- 4 Informed Consent
- 6 Competence
- 2 Community Focus

Figure 2 — Count of responses to Case 2

Treatment — Case 2

- 1 Skills
- 4 Competence
- 8 Informed Consent
- 5 Managed Conflicts of Interest

Control — Case 2

- 2 Integrity
- 1 Skills
- 4 Competence
- 4 Informed Consent
- 3 Managed Conflicts of Interest

Figure 3 — Count of responses to Case 3

Treatment — Case 3

- 5 Integrity
- 5 Skills
- 6 Competence
- 4 Managed Conflicts of Interest

Control — Case 3

- 2 Integrity
- 2 Skills
- 7 Competence
- 1 Community Focus
- 3 Informed Consent
- 4 Managed Conflicts of Interest

A quantitative analysis was then performed on the results of the original analysis. The findings for each group (treatment and control) were aggregated, and the number of times each code (tenet) was recorded was counted for each group to give a numerical value. These values are displayed in Figures 1,2, and 3, which show both the tenets mentioned in the responses of each group, and the number of times each tenet was discussed.

Two of the eight tenets (1. Good faith, and 5. Continuous Development) were not discussed at all,and one tenet (3. Community-focus) was only referenced by one participant.

Comparison of findings to benchmark analysis of case studies

The case studies used were originally published by the ACS, and were accompanied by references to relevant clauses of their Code of Professional Conduct (Australian Computer Society, 2014). The ACS Code of Ethics consists of six values, and the Code of Professional Conduct breaks each value down into several sub-sections in order to guide adherence to the code of Ethics. When the chosen case studies and their associated values were analysed and translated to reflect the IITP Code of Ethics of New Zealand, the following tenets of that code were found to apply:

Table 2. Comparison of findings against benchmark analysis

Case 1	Case 2	Case 3
2. Integrity	2. Integrity	2. Integrity
4. Skills	6. Informed Consent	4. Skills
6. Informed Consent	7. Managed Conflicts of Interest	7. Managed Conflicts of Interest
8. Competence	8. Competence	8. Competence

These results can be used as a benchmark, to which the results of the analysis of the two groups' responses can be compared.

Table 3 shows the relevant tenets from each case as analysed by the researcher (the expected findings), alongside the tenets shown from analysis of the responses of the two groups. The differences in responses from the researcher analysis are highlighted.

Table 3. Benchmark findings vs results from two analysed groups

	Benchmark findings	Findings from treatment group	Findings from control group
Case 1	2. Integrity 4. Skills 6. Informed Consent 8. Competence	2. Integrity 4. Skills 6. Informed Consent 8. Competence	2. Integrity 4. Skills ==3. Community-focus== 6. Informed Consent 8. Competence
Case 2	2. Integrity 6. Informed Consent 7. Managed Conflicts of Interest 8. Competence	==4. Skills== 6. Informed Consent 7. Managed Conflicts of Interest 8. Competence	2. Integrity ==4. Skills== 6. Informed Consent 7. Managed Conflicts of Interest 8. Competence
Case 3	2. Integrity 4. Skills 7. Managed Conflicts of Interest 8. Competence	2. Integrity 4. Skills 7. Managed Conflicts of Interest 8. Competence	2. Integrity 4. Skills ==3. Community-focus== ==6. Informed Consent== 7. Managed Conflicts of Interest 8. Competence

In the treatment group the findings varied from the expected, researcher-generated findings only slightly; Case 1 and Case 3 matched the expected findings. Case 2 varied in that respondents omitted any mention of Integrity, but additionally inferred that Skills was a tenet that would be involved in this scenario. In the control group, responses for Case 2 also inferred the involvement of Skills, but retained the tenet of Integrity, corresponding to the benchmark. Findings from Cases 1 and 3 in the control group did not omit mention of any tenet present in the expected findings, but did produce an inference of Community-focus, albeit both from the same respondent. Case 3 also produced an inference of Informed Consent, differing from the benchmark which did not include this.

Perceptions of Codes of Ethics

No one interviewed was a member of IITP, or was familiar with their Code of Ethics. One interviewee was a member of an international professional association, and considered themselves to be bound by that association's code of ethics. When talking about the case studies provided in the interviews, no one in the treatment group referred to the IITP Code of Ethics as a

guide to their possible behaviours, but several talked about organisational guidelines or values which they found relevant to their work.

In order to view how codes of ethics in general, and the IITP Code of Ethics in particular (for those interviewed in the treatment group), are seen by the participants, a number of quotes were extracted, which give an insight into participants' views on codes of ethics (see Appendix 5.). The quotes taken were divided between those from the treatment group and those from the control group. The sample size was too small to be able to infer any differences in the opinions of codes of ethics between the two groups, although those in the treatment group who had been asked about the IITP Code of Ethics produced a greater number of useable quotes in this area. When the two groups of codes were merged, a *sentiment analysis* (Bhattacherjee, 2012) was carried out in order to capture the opinions and attitudes or the participants. The results of this analysis produced three major themes:

- One's own moral code is important, as is "common sense".

- Processes and guidelines, as well as corporate values, can help with the resolution of ethical issues

- Codes of ethics specific to IT are not highly visible, and do not seem relevant or necessary

These themes suggest the participants were negatively disposed to the concept of a code of ethics, seeing them as a largely unnecessary concept.

Discussion

The aim of this research is to present an indicative view of the effects of a code of ethics on the behaviour of IT professionals. The results show very little difference between the responses given by both the treatment group (who were supplied with a copy of the IITP Code of Ethics) and the control group (who were not), and that both groups largely embody the spirit of the IITP Code of Ethics even though the document itself was not referenced at all in the responses given in interviews. Responses from the interviewees were all very different in the ways they reacted to the given scenarios, yet they produced results which showed a marked coherence when looked at against a code of ethics.

The Effect of a Code of Ethics

The responses to each of the case scenarios provided for the interviews seemed, on first impression, to tend to shy away from discussion of ethics and ethical behaviour. Responses such as "I don't think it's ethical, I think it's commercial" and "if there's an ethical question it's about obeying the law" came up in several of the interviews, indicating that the interviewees did not consider that an ethical issue was arising in each of the situations discussed. However, when viewed through the lens of the IITP Code of Ethics, the ethical components of the responses were able to be deduced. The first stage of analysis of the data was to look at the responses from interviews against the IITP Code of Ethics to see where responses matched with the tenets of the Code, and this showed that parts of the responses corresponded positively with tenets of the Code of Ethics, indicating an ethical consideration in the responses. This process showed that each individual displayed some alignment with aspects of the Code of Ethics in their responses.

When taken as groups, the responses of the treatment group and the control group showed alignment with a handful of tenets of the Code of Ethics for each case study discussed. While there were some differences in the tenets which emerged as important in each group, there were significant similarities; for each case study, four tenets emerged as relevant amongst both groups, with differences between the groups of either one or two tenets.

For each case study, the responses from the treatment group identified four tenets of the IITP Code of Ethics. The responses from the control group also showed up these same four tenets, but with one or two other tenets emergent as well. This shows a high degree of similarity between the responses of the two groups. That the control group showed a wider range of results than the treatment group can be explained as a consequence of the small sample size; in a group of four respondents, the views of single participants which deviate from the more popular themes are given undue weight, and are therefore given greater recognition in the results. To mitigate against this effect, a repeat of the study using a larger sample size should be carried out. But the results of this study do show a marked degree of similarity between the responses of the two groups, and the similarity is shown clearly in Figures 1, 2 and 3, which display numerical counts of the instances in which tenets of the IITP Code of Ethics were inferred in the interviews for each group. the size of the "bubbles" on the chart indicates the importance of each idea which came through

in participants' responses. This shows that, for Case 1, instances of the tenet of "Competence" were the most prevalent in the responses of both groups, leading to a conclusion that competence is the value given the most weight in the interview responses whether a code of ethics was used or not. Similarly, "Competence" was counted most highly in Case 3 in both groups as well. In Case 2 "Competence" was given a fairly high count which was the same in both groups, but the responses from the treatment group put more weight on the tenets of "Informed Consent" and "Managed Conflicts of Interest". From this we can see that values relating to professional competence were deemed important to the respondents as a whole. Values on these figures of one or two are often related to outliers, where the responses from the two groups do not match. They also mostly related to areas where the results from interviews do not match with the benchmark results (see below). But these figures illustrate graphically and clearly the similarities between the two groups of responses. This supports the findings of Gattiker & Kelley (1999), Cleek & Leonard (1998), and Harrington (1996), who find that a code of ethics has no effect on professional behaviour. From this, we can conclude that a code of ethics has little effect on the behavioural response of professionals in a work situation where there is ethical ambiguity.

The small sample size of four participants per group meant that the results of secondary data coding did not provide a definitive picture of the themes emerging from the inference of the different tents of the codes of ethics. Very often a theme would be mentioned only once by a single respondent, and very few themes came up more than twice. There is therefore little to be gleaned from looking at the emergent themes within the tenets of the Code of Ethics listed in Table 1. A repeat of the research using a bigger sample size may produce more definitive results.

Comparison of results to a benchmark

Each of the case studies used in the interviews originally came accompanied by an analysis of the case against the ACS Code of Professional Conduct, showing which causes of the code applied to the case in question. A "translation" to apply the IITP Code of Ethics to each case gave a benchmark against which the results of the interviews could be compared.

The comparison of results to the benchmark showed a remarkable degree of similarity in both treatment and control groups. For Case 1 the four tenets identified as relevant as the benchmark

were also identified by both groups; the only difference was a mention of "Community-focus" in the control group from a single participant. For Case 2 the tenet of "Integrity" was missing from the responses of the treatment group, and both groups highlighted the tenet of "Skills", which was not present in the set of tenets used as the benchmark. For Case 3, again the findings of the treatment group matched with the benchmark values, while responses from the control group brought up instances of "Community-focus" and "Informed Consent". What this appears to say is that the results from the group who were given a copy of the Code of Ethics prior to the interview align closely to the benchmark analysis of the case studies. In comparison, the response from the control group showed more variation from the benchmark. Therefore, a code of ethics is shown to have a positive effect on responses, as responses from this group align more closely to how the code of ethics should apply to the given case scenarios. However, the small sample size used in this study means that responses from a single participant which do not fit the pattern are given more prominence than they would get in a larger sample. For example, the tenet of "Community-focus", which appeared in the results of the control group but not the treatment group, was the result of responses from one participant. The views of this participant, who was randomly assigned ot the control group, are given a great deal of prominence as part of a group of four participants, and should not be seen as a characteristic of the control group. These results must be taken as indicative only, and a larger study undertaken to verify this finding.

Perceptions of Codes of Ethics

Discussion of codes of ethics was not a major part of each interview, but it did give some insight into how codes of ethics were perceived by those interviewed. By extension, this can be seen as how codes of ethics are seen by the IT workforce. Quotes were taken from interview responses, and these indicated — in general — a negative pre-disposition to the idea of a code of ethics being a useful tool to aid decision-making. Analysis of the responses indicated three major themes which came across as important to people.

It is largely seen that ethical decision-making is an internal process; one's own moral code, and a sense of right-and-wrong are important guiding factors when ethical issues are at stake. Some respondents talk about "common sense" as being a guide; this supposes that a person's moral

compass is in tune with prevailing beliefs around an ethical dilemma. People who viewed the Code of Ethics as part of their interview often thought that the code reflected common sense, and that the tenets of the code outlined what was considered to be obviously good practice. This view reflects that of Miller & Voas (2008), who say that the creation of environment where IT professionals can make decisions based on their own moral codes is an important part of the development of ethical practice. Respondents felt that, being obvious, the code of ethics was not a useful tool to help resolve a situation where ethics needed consideration.

There was a tendency amongst respondents to state that any ethical considerations to be made in their work were covered by guidelines set out by the organisation. "There's a governance process, so it's always back to the process" is a typical statement expressing the sentiment that often came up in discussions around the case studies; there is a way of doing things, and this will tell you what to do if you have questions. In the analysis of respondents' statements about their perceptions of codes of ethics, one of the themes to emerge was that processes and guidelines can help with the resolution of ethical issues. The expression of this view can often sit alongside adherence to the principle of Competence as outlined in tenet 8 of the IITP Code of Ethics - that recognised professional practices shall be followed, and that services shall be given within one's area of competence. But it does also reflect the view of Wood-Harper et al. (1996), who state that with little or no ethical training, people will adopt without question the "ethical neutrality" of their efforts, meaning that people believe that in following set processes, their actions cannot have any ethical implications. They reject this view, stating that the very existence of codes of ethics, and the perceived need for them, shows that ethical neutrality is not possible. They also mention "the futility of the head-in-the-sand phenomenon so often exhibited in strict adherence to some specified set of processes" (Wood-Harper et al., 1996). One interview respondent upheld these views, stating "there's a belief system that the process itself is the fabric of ethics, is a proxy for ethics. That is flawed reasoning. What it does is it removes individual culpability". In essence, this respondent says that it is important for people to think beyond the process, and to consider the implications of their actions outside of this sphere, but that people often consider their responsibilities to be fulfilled if the process has been done. This particular respondent was a part of the control group so had no access to a code of ethics prior to or during the interview. They

also had never been bound by, or had referred to, any formal code of ethics, preferring to use their own experience and judgement to make ethically-sound decisions.

In general, respondents felt that codes of ethics — while probably present in organisations — do not enjoy a high level of visibility. One respondent in the study was a member of a professional association, and considered themselves bound to their code of ethics, but none of the other participants felt that adherence to a code of ethics specific for IT was a part of their professional responsibility. Several participants assumed that there was a code of ethics in place for their organisation, but none referenced any code of ethics in their interview responses. One participant noted that they had never been asked to sign a code of ethics in any workplace. Several thought that a code of ethics was unnecessary in their organisation as processes and guidelines were sufficient to guide professional behaviours in an ethical direction, and that the contents of a code of ethics — and the IITP Code of Ethics in particular — were self-evident and reflected how one would behave anyway. One respondent talked of organisational values, which enjoy a higher degree of visibility in some organisations than they do in others. On the whole, participants thought the concept of a code of ethics was rather irrelevant and not a necessary tool to assist in decision-making where ethical concerns were in play.

Contribution to Knowledge

This study is the first of its kind to study the effects of a code of ethics on the professional behaviour of IT workers using qualitative methods. Previous studies in the area have used survey-based methods of data collection, and there is no indication in the literature that interview-based methods have been used to study this phenomenon in the past. Qualitative data "are a source of well-grounded, rich descriptions and explanations of human processes" (Miles, et al., 2014), and ethics, as an area of study, benefits from an investigation of human process in a descriptive manner. While collection of quantitative data may garner sufficient material to indicate patterns and themes, a study using qualitative data will include human emotions, complexities, and context, which may not be apparent in numerically-collected data. One of the benefits of using qualitative data is that results may help researchers get beyond initial conceptions, and can lead to serendipitous findings and new integrations (Miles et al., 2014).

This research also contributes to the study of ethics in IT in New Zealand, of which there is little — if any — at present. IITP New Zealand is the largest professional body for IT in the country, and has a relatively reentry-developed Code of Ethics. Yet the effectiveness and usefulness of the Code of Ethics in a local context have not been investigated until now. New Zealand, with its multicultural society and the importance of the Treaty of Waitangi in organisational and legal operations, is a unique professional environment. Investigation into how ethics play out amongst workers — and IT workers in particular — in this environment will provide useful insight into how effective the Code of Ethics is in practice, and will help to inform future developments of the code.

Limitations

Although the intention of this study was to provide an indicative insight into the effects of a code of ethics on behaviour, the most notable limitation of this study is the small sample size used. With only four respondents in each of the treatment and control groups, the data gathered was insufficient to provide a definitive picture of how the responses from the two groups might differ. A larger sample size would not allow for the prominence given to responses from a single participant that were evident in some aspects of this study. What was noticeable, however, was that despite the small sample size, the agreement between the two groups was remarkably similar; a larger study using these methods but with a significantly greater number of interviews performed would be likely to back up these findings more strongly.

Another limitation worth noting is that the range of the IITP Code of Ethics covered in these interviews was limited. Only five of the eight tenets of the code were found to be relevant from a benchmark analysis of the case studies used, and responses from the interviews referred to six out of the eight tenets. In New Zealand, the value of Good Faith is important, as the embodiment of the principals of the Treaty of Waitangi are a key component of organisational values, especially in the public sector, but in many private sector organisations too. It would be of especial importance to illustrate how a stated adherence to the Treaty of Waitangi translated into ethical behaviours for those working in IT. It would also be interesting to see how the tenet of Good Faith was applied to a wider cultural within the New Zealand professional environment, illustrating how IT workers behave with regard to the various cultures present in society.

The tenet of Continuous Development was also not discussed in interviews in this study. With the rapidly changing pace of technology, the need to keep skills up to date is a key aspect of work in the IT industry. An investigation of responses to a scenario where continuous development of skills was required would give an indication of the importance of this value to IT workers in a New Zealand setting. Therefore, if the study was to be replicated, a range of scenarios covering a broader ethical palate would be useful.

Conclusion

This study shows that the presence of a code of ethics makes no discernible difference to the ethical decision-making behaviour of IT professionals. However, this is a very limited study, intending to provide indicative conclusions with a view to future research. On one hand, codes of ethics relating to the IT profession have been in existence for many years, and their very existence proves that they are necessary tools to guide and manage actions (Watson et al., 1996). The effectiveness of codes of ethics in influencing behaviours of those in IT has also been shown in several studies (Thong & Chee-Sing Yap 1988., Peslak, 2007.). Yet this study and others (Gattiker & Kelley, 1999., Harrington, 1996., Cleek & Leonard, 1998) show little to no effect of a code of ethics on professional behaviour and ethical intent in IT workers. This research shows that both groups of participants — whether they had reference to a code of ethics during the interview or or not — largely embody the spirit of the IITP Code of Ethics. The research also indicates that many IT workers are not members of a professional association, and not bound by any specific codes of ethics relating to IT. Responses to questions about codes of ethics reveal that people are guided by common sense and their own moral codes, and organisational guidelines and processes which may be in place, and that codes of ethics for IT do not seem to exist and are not very relevant. It is suggested that this study be used as the basis for wider research in the area, using a greater sample size to more definitively assess if, and how, a Code of Ethics has an effect on IT professionals.

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Appendix 1. Interview Structure

- Can you tell me a bit about your professional background. How long have you been working in IT? What sorts of roles have you had? What sorts of organisations have you worked for? What are you doing currently?

- Do you hold membership of any professional association or body? are there guidelines around ethical behaviour by which you are bound by as a part of this association?

- The first scenario is [brief verbal recap of scenario]. What do you make of this situation? What actions might you take if faced with this situation? Why would you take these actions?

- Repeat the above for scenarios 2 and 3.

- Would you like to share any other experiences you have had where you have encountered ethical dilemmas at work?

Interview length - estimated half an hour.

Appendix 2. Case Studies for Interviews

The following case studies were taken from ACS Code of Professional Conduct Case Studies (ACS, 2014) and modified to reflect a New Zealand professional setting:

Case 1.

A small software company is working on an integrated inventory control system for a very large national shoe manufacturer. The system will gather sales information daily from shoe stores nationwide. This information will be used by the accounting, shipping, and ordering departments to control all of the functions of this large corporation. The inventory functions are critical to the smooth operation of the system. Jane, a quality assurance engineer with the software company, suspects that the inventory functions of the system are not sufficiently tested, although they have passed all their contracted tests. She is pressured by her employers to sign off on the software. Legally she is only required to perform those tests which have been agreed to in the original contract. However, her considerable experience in software testing has led her to be concerned over risks of the system. Her employers say that they will go out of business if they do not deliver the software on time. Jane contends if the Inventory sub-system fails, it will significantly harm their client and its employees. If the potential failure were to threaten lives, it would be clear to Jane that she should refuse to sign off. But since the degree of threatened harm is less, Jane is faced with a difficult moral decision.

Case 2.

Consider an HCI consultant with extensive experience in evaluating web sites and graphical user interfaces (GUI). She has just received an evaluation contract for a new accounting product made by Company A due to her prior experience with e-commerce site evaluation. The work involves assessing the training requirements and the usability of the system. During the initial configuration of her usability laboratory she becomes aware that that software she is to evaluate contains a GUI already patented by a rival Company B, which she evaluated several weeks before. Under her contractual arrangements she is not allowed to discuss the evaluation of a product with anyone outside the contract. She therefore has an obligation to Company B not to provide information

regarding their product to anyone else without their permission. She has a similar obligation to Company A. Can she continue with the evaluation? If she cannot continue with the evaluation how does she inform Company A of the patent violation? Does she have an obligation to let company B know Company A has copied their GUI?

Case 3.

Nirmal is the IT manager in a government department with more than 500 staff members and six branches across the country. His department has decided to acquire an enterprise resource planning (ERP) system. An RFT for the procurement of the software was advertised in a number of national newspapers. Two local companies responded to the advertisement and sent their offers to the department. When Nirmal opened the envelopes and examined the offers he found that company A's offer is slightly better than company B's offer. To his surprise, company B's offer was made by his best friend Devraj, who is the general manager of company B. Company A's software appeared to be easier to use and easier to modify compared to company B's software. Although the initial cost of company B' software appeared to be less than that of company's A, the former may require some 'tools-consultants' to modify it and some 'business-consultants' to assist in running it, which might eventually raise the total cost. To complicate matters more, Nirmal received a phone call from Devraj, who urged him to favour his offer, as he is quite desperate to get this deal. He also reminded him that the 'tools and business consultants' who might be needed in the project will be recruited from his home country which means more jobs for his countrymen and in turn more money sent home. Nirmal is indeed in a difficult position.

Appendix 3. IITP Code of Ethics

The following are the 8 tenets (principles) of the Code of Ethics. See http://iitp.nz/files/IITP%20Code%20of%20Ethics.pdf for the full Code of Ethics, including interpretation and the disciplinary process.

IT Professionals will practice with:

1   Good faith - Members shall treat people with dignity, good faith and equality; without discrimination; and have consideration for the values and cultural sensitivities of all groups within the community affected by their work;

2   Integrity - Members shall act in the execution of their profession with integrity, dignity and honour to merit the trust of the community and the profession, and apply honesty, skill, judgement and initiative to contribute positively to the well-being of society;

3   Community-focus - Members' responsibility for the welfare and rights of the community shall come before their responsibility to their profession, sectional or private interests or to other members;

4   Skills - Members shall apply their skills and knowledge in the interests of their clients or employers for whom they will act without compromising any other of these Tenets;

5   Continuous Development - Members shall develop their knowledge, skills and expertise continuously through their careers, contribute to the collective wisdom of the profession, and actively encourage their associates to do likewise;

6   Informed Consent - Members shall take reasonable steps to inform themselves, their clients or employers of the economic, social, environmental or legal consequences which may arise from their actions;

7   Managed Conflicts of Interest - Members shall inform their clients or employers of any interest which may be, or may be perceived as being, in conflict with the interests of their clients or employers, or which may affect the quality of service or impartial judgement;

8   Competence - Members shall follow recognised professional practice, and provide services and advice carefully and diligently only within their areas of competence.

Appendix 4. Results of Data Analysis

Analysis results of treatment group

ID	Case 1	Case 2	Case 3
A	**6. Informed Consent** • Follow process, escalate, highlight major risks and impacts, and let the people within the organisation decide • Indicate that you would not implement the system for the reasons given **8. Competence** • You wouldn't get into this predicament if you'd been upfront in initial planning. • There's a governance process • Complete the scope of the work and highlight concerns, risks, impacts and reasons why the project should not continue	**4. Skills** • Continue with the job, document the facts, and try to articulate your concerns **6. Informed Consent** • Seek advice on what you can and cannot say • Get legal advice on contract position • Inform the company - they could have made a mistake **7. Managed Conflicts of Interest** • If you can you should manage the conflict of interest without escalation, try to prevent the situation from blowing up **8. Competence** • Stay with your contract to keep yourself safe	**2. Integrity** • It's about transparency, everybody having a fair chance **7. Managed Conflicts of Interest** • It's strictly a conflict of interest. You pull yourself out of that process and let the process run. **8. Competence** • There are rules around procurement • Lots of people are involved in procurement to ensure they're implementing the right thing
B	**2. Integrity** • I would sign off with a recommendation to do further testing **4. Skills** • Provide a service so that unless they want a failure this is what they need to do **6. Informed Consent** • If something will be impacted by what I'm doing, I want to make sure the right people are aware of this **8. Competence** • She's done the tests she was required to do.	**6. Informed Consent** • Talk to somebody else to find out what to do • If I am allowed I would let the company know of the patent breach, as they may not be aware of it **7. Managed Conflicts of Interest** • Can she carry on with the evaluation? I wouldn't be able to. • I would get some guidance on how to terminate the contract	**4. Skills** • If I thought my friend's company was good, I'd say it was good. If I had concerns, I'd say so. **7. Managed Conflicts of Interest** • I'd have to withdraw myself from the decision-making

ID	Case 1	Case 2	Case 3
C	**2. Integrity** • I would sign the tests off with a caveat, or raise my concerns and get assurance that they will be addressed as soon as possible **6. Informed Consent** • If I had a long-standing relationship and a degree of trust, I would let them know in an informal manner **8. Competence** • They have a contracted list of tests, so I would sign those tests off • I would escalate my concerns, and make sure they were on record • At the end of an engagement there should be an opportunity for evaluation, and this would be the appropriate time to provide feedback	**6. Informed Consent** • I would push it up the chain and say that I know that this is going on • I would direct it to people who know more about the contract and legal ramifications **8. Competence** • She's not being asked to evaluate the legal status of the code	**2. Integrity** • I wouldn't be swayed because he's a friend **4. Skills** • His proposal is actually more expensive in the long run, so I wouldn't go with it • I would choose a friend if I knew they were the better option **7. Managed Conflicts of Interest** • I wouldn't put any weight on the personal relationship, that'd be risky

ID	Case 1	Case 2	Case 3
D	**2. Integrity** • She should raise problems, and make the company aware that they may become issues • You shouldn't be selling a solution that's wrong so you can make more money from it later. **4. Skills** • If the product is bad and she's clever enough, she will arrange for one of the tests to fail in a legitimate way • You need to help customers get what they want **8. Competence** • If she's right, her obligation is to show that a broader view of one of the tests fails. • If it does pass all the tests she has done her job	**6. Informed Consent** • If she has a good relationship with the current client, she could mention her suspicions without saying why **7. Managed Conflicts of Interest** • She should be declaring that she will consult to potential competitors • You should declare conflicts of interest within the bounds of your confidentiality agreements **8. Competence** • If she's reviewing usability it can be argued that it is not her business to discuss a possible patent breach. It depends upon whether or not this is in her contract. • Document concerns in her own records, so that if the issue does arise, she could say she was aware	**2. Integrity** • Will talk to anybody about what might be coming up, so everyone's in a good position to compete. But when it goes to market this stops. • You have an obligation to do the right thing by the organisation. • People can convince themselves that what is best for them is best for the organisation. **4. Skills** • Tell his friend that eh should be asking about what is coming up, so that he is in a good position to compete. • Its OK to have long-term relationships with potential clients, and for this to have some positive weight in the selection criteria, as they may be a known quantity, and their existing knowledge may have value. **7. Managed Conflicts of Interest** • IT manager needs to declare a conflict of interest and come off the evaluation panel **8. Competence** • There is a process to follow • Multiple people are on the decision panel so that any questions concerning trust can be discussed • It will not lead to trouble if done right - the process is well documented • The process should not be manipulated to get what you want

Analysis results of control group

ID	Case 1	Case 2	Case 3
E	**2. Integrity** • The key words in the case - "suspects", "contends", "to be concerned" seem to be instinctive, rather than evidence-based. This is not constructive • Hiding problems is one of the worst things you can do • Encourage the client to take responsibility for the omissions **4. Skills** • consider enhancing the level of testing that has not been contracted when new elements arise • An experienced tester would know what they were looking out for **6. Informed Consent** • Issues should be reported in the TSR and discussed with the Project Manager, company, legal teams, and client **8. Competence** • Who drafted the deliverables, and why were those elects not surfaced in the DTP? • Discussing the issues with the client is the professional thing to do • There is a process, so she is responsible for whatever has been contracted • deliver what was contracted, and identify the gaps that were not contracted	**2. Integrity** • She has a duty of care to both clients • This is based on an assumptive position, without strong evidence **4. Skills** • She is coming in with some pre-knowledge from an existing client, and making a n assumption based on that knowledge **6. Informed Consent** • Get legal advice, and make decisions based on that advice **7. Managed Conflicts of Interest** • Exit yourself from the engagement due to conflict of interest • If the two companies are in competition, she should have considered this before taking up the second piece of work **8. Competence** • She's hired to evaluate usability, and won't know what the underlying code looks like	**2. Integrity** • It is a breach of the entire procurement process • This is business, it isn't personal **6. Informed Consent** • You need to understand the process of government, and the guidelines, and apply it. • If there is ambiguity in the procurement rules you seek clarification in writing. **8. Competence** • In a government department there are clear rules for procurement. • An IT Manager does not open the tender when it comes in • This person would be given a warning - completely unacceptable behaviour

ID	Case 1	Case 2	Case 3
F	**2. Integrity** • What's more important - getting paid, or telling the client that you have additional concerns which should be tested, and may push out the delivery date? **4. Skills** • If they provide a substandard product their reputation will be tarnished **8. Competence** • She should document her risks and concerns	**6. Informed Consent** • Point out the problems and say "be wary of this" **8. Competence** • She's only contracted to evaluate the training requirements and usability, so should continue with the job	**8. Competence** • Should be evaluated using a set criteria • The ability to make decisions on RFT is usually down to a panel, not one person.
G	**3. Community-focus** • The choices she makes will determine the kind of world she chooses to live in • Life is not threatened, but the quality of life of your peers may be threatened **6. Informed Consent** • She should include someone else in decision-making, so she can examine how her peers might think and behave • Ensure that people who are accountable understand the choice they are making • She should provide clear, written advice to her superiors	**8. Competence** • If someone is assessing a UI it would be strange for them to speak up about this issue. Why wouldn't they be the same?	**3. Community-focus** • People can the a risk with everyone's reputation by fielding a topic in the public eye which everyone is damned by when it goes wrong. It doesn't have everyone's best interests at heart. **4. Skills** • Sometimes someone can declare a conflict but still make the right decision based on appropriate reasoning, getting the best result for the organisation. declaring conflict is not the same as an actual conflict. • Considering the outcome the organisation is after and the most sensible way to achieve that, if the answer is not to follow the process then that's the ethical thing to do. **7. Managed Conflicts of Interest** • Conflict of interest should be immediately declared and put above board

ID	Case 1	Case 2	Case 3
H	**8. Competence** • Document concerns, outline some of the foreseen consequences of the concerns. Give that to employer	**6. Informed Consent** • Is she breaking the law? • Get some legal advice **7. Managed Conflicts of Interest** • I'm not entirely sure she's not breaking the law **8. Competence** • Document everything, make sure you've got records of what you've said to who, who said what to you, why you believe this is the case, how you can demonstrate the patent has been breached.	**2. Integrity** • processes protect the integrity of the system, preventing corruption. Is this a trustworthy system where people have a fair go? **6. Informed Consent** • He needs to record the fact that his friend contacted him in order to persuade him, and provide that to his bosses. **7. Managed Conflicts of Interest** • He should have declared a conflict of interest then stepped back, allowing someone else to direct him in regards to this tender • Say to the friend "do not talk to me about this" • Document communications with the friend. **8. Competence** • It should be clear what the rules are. There are strong guidelines • I would excuse myself from the tender process

Appendix 5. Quotes of perceptions of codes of ethics

Treatment group	Control Group
"[IITP code of Ethics] seems self-evident … an unnecessary document. These are all just things you should expect of humanity"	"it boils down to … one's own code of ethics"
"just my personal values and ethics"	"I"m utterly skeptical of professional memberships"
"[corporate values are] well published, in good organisations they're discussed in meaningful ways"	"sometimes [IT] cares less about ethics, humanity, culture, than it should"
"People wanted to use [corporate values] to beat you with, rather than actually work with it a little bit"	"I'm bound by [the mechanics of the local environment] - if you misbehave, people become nervous about rehiring you"
"seems fairly high-level to me … I don't know if it helped me in my thought process in any way"	"I've seen people who are bound by [a code of conduct] who've got no ethical bones at all"
"[codes of ethics] might exist, in the background, but I haven't had to read or sign anything"	"process [can be used as] a proxy for ethics"
"[escalation of problems to more senior colleagues] works pretty well in terms of the decisions I have to make"	"[organisational guidelines] are as much about policy and process as they are about values and ethics"
"a general work [code of ethics], no specific IT ones"	"[years ago] we didn't have as much guidance, and processes weren't as clear"
"more often than not it's not [an ethical issue], it's just sensible"	
"There's always a code of ethics in every organisation, and they're pretty much stock-standard across the board"	
"it comes down to your own personal ethics"	
"treating people in the way you want to be treated"	