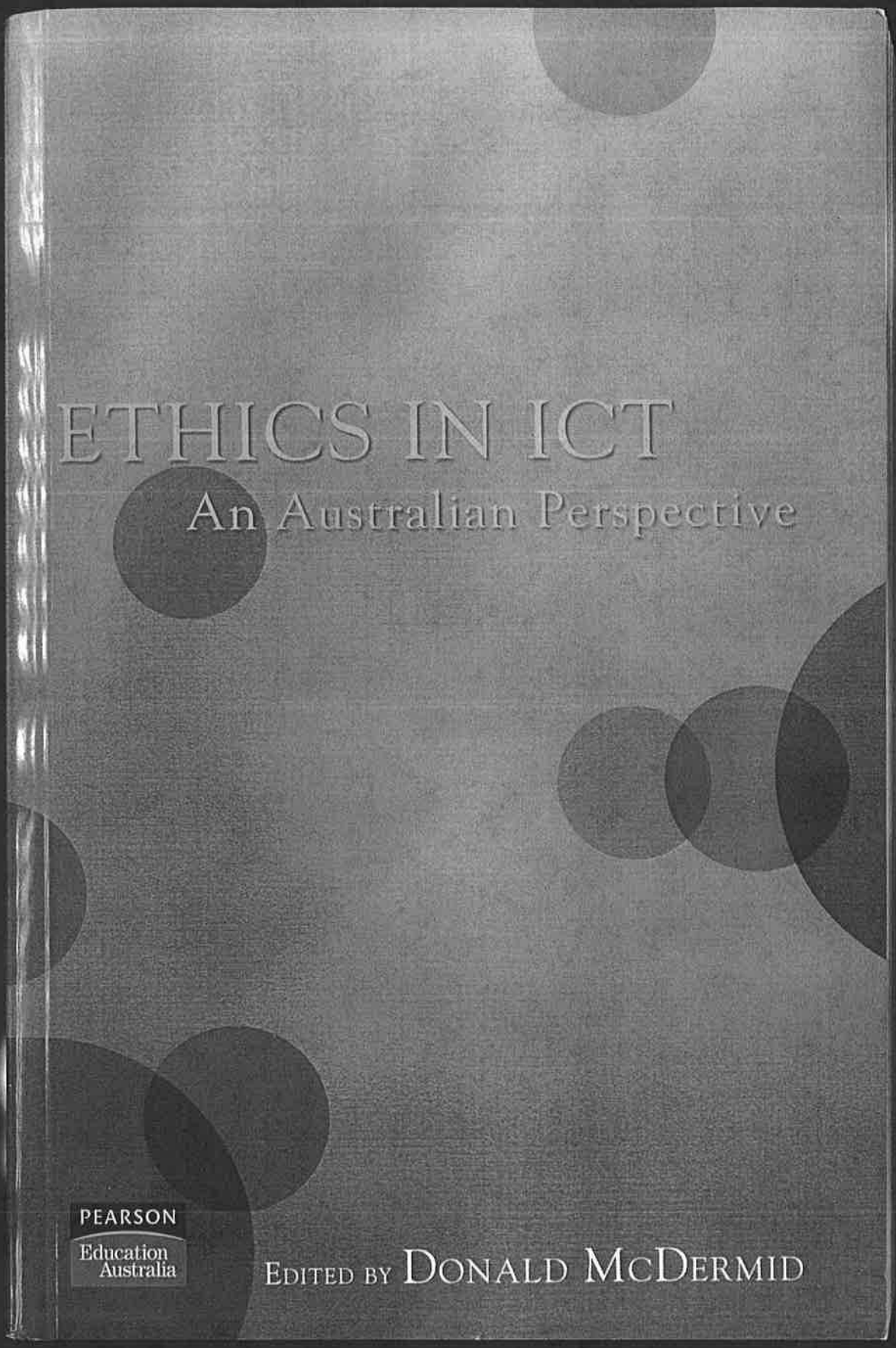
ETHICS IN ICT
An Australian Perspective
PEARSON
Education
Australia
EDITED BY DONALD MCDERMID

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CHAPTER 1

Introduction

Oliver Burmeister

LEARNING OBJECTIVES

By the end of this chapter you should:

- have a basic understanding of what ICT ethics entails
- be able to describe what is required of an ICT professional
- understand where the Australian perspective fits into the global perspective in ICT ethics
- have an appreciation of how the study of ethics is relevant to the pursuit of a career in ICT

1.1 INTRODUCTION

In 2000 Australia hosted the most successful Olympic Games to date. It was an event that put Australia on the global map. It was a first for Australia in many ways. Among the many achievements was the website that communicated to everyone what was going on during the games. The budget spent on that site was huge by the standards of the day. The website was the culmination of the work of many professionals, particularly information and communications technology (ICT) professionals.

Among the many firsts of the Sydney Olympic Games was one that is perhaps a little less well known. That is, through successful litigation, the website's failure to address the needs of the visually impaired became a springboard for challenging what professional web development really entails, not only in Australia but around the world. It is therefore an excellent springboard for considering what it means to be an ICT professional and what ICT ethics is about. We will first review the case and then examine various aspects of it, to explore issues of professionalism and ICT ethics.

1.1.1 The SOCOG case

The purpose of this introductory chapter is to introduce and explore issues to do with professional ethics in ICT. We begin this exploration by examining in a little more detail the landmark Sydney Organising Committee for the Olympic Games (SOCOG) case. If you are interested in a more detailed description of this case, please see the references at the end of the chapter. No one case study can cover all aspects of professional ethics. This one was chosen because:

- It is Australian, yet has global ramifications for the ICT industry.
- It illustrates aspects of what constitutes professional and unprofessional behaviour in ICT.
- It can serve as a springboard for considering ethical issues, first by considering ethical issues in this case, and then by considering wider ethical issues in ICT.

The SOCOG case raised the issue of information access for people with disabilities. It was brought to the attention of website designers through court action taken by a vision-impaired person, Bruce Maguire, against SOCOG (HREOC 2000; Nublog 2000). SOCOG was found to have acted in a discriminatory and unlawful manner. The latter concerns SOCOG attempts to delay action on the finding against them and the subsequent successful appeal by Maguire to HREOC.

It was argued that the Sydney Olympics website was designed to give a wide-ranging user population, including people with disabilities, access to one of the world's biggest sporting and cultural events. The original complaint was that the website was not accessible to people using screen readers. Screen readers are software programs that translate the design and text in a website into an auditory or Braille output. They allow a site to be heard or read instead of seen. Back then, many of these programs had difficulty with graphs, tables and images. HREOC required of SOCOG that alternative (ALT) text be used on all images and image map links on their site; in other words, that there be brief textual explanations for all images. SOCOG was also required to provide access to the Index of Sports for the schedule page and access to the results tables to be featured during the games.

The SOCOG case has given this problem much publicity and greatly increased public knowledge of accessibility requirements. This case addresses only these three failures as regards the needs of the visually impaired. These three made it impossible for a person who used the site via a screen reader to access certain information. It is most likely that SOCOG failed other accessibility guidelines, but this was not deemed important in the court case because it dealt only with how Bruce Maguire accessed the site, that is, via a screen reader. It is also likely that other disability groups experienced difficulty accessing the site.

The case began well over a year before the Olympic Games. It was brought by a person with vision impairment. The initial complaint was not dealt with appropriately and as a consequence the problem highlighted by that complaint continued. Eventually this led to a finding that SOCOG had acted in a discriminatory and unlawful manner. The website was designed to give a wide-ranging user population, including people with disabilities, access to one of the world's biggest sporting and cultural events. However, the design was flawed. That flaw was identified by the original complaint, yet not addressed in subsequent work on the website.

The original complaint was that the website was not accessible to people using screen readers. Three reasons were specified for the complaint: lack of ALT tags; lack of alternative text for image maps (the image maps in question used graphical text); and the use of JavaScript for navigation.

The result was that vision-impaired users could not access ticketing information, event schedules or postings of event results.

HREOC had previously decided that the *Disability Discrimination Act 1992* (hereafter abbreviated to DDA) applies to the provision of services on the Web. It is important to note that the DDA applies to services whether provided for payment or not.

As stated above, no one case can deal with all aspects of professional ethics. Nor can any one court case deal with all aspects of the rights of minority groups in society. The SOCOG case dealt only with access to the website via a screen reader, that is, difficulty in accessing the site by people

with vision impairments. The publicity surrounding the SOCOG case highlighted particularly the difficulties faced by the vision impaired.

Even though accessibility has been a public requirement since (at least) May 1999, it was only after the demonstration of the inaccessibility of some web designs that accessibility was brought to public attention. With the understanding of how a website proved inaccessible via screen readers came the acceptance of the importance of accessibility as a basic requirement. This acceptance seems to be a direct result of the explicit demonstration of how the SOCOG site failed. This case has helped ICT professionals to appreciate better how people's access to a website can be affected by designs failing to meet accessibility guidelines. It made what was previously seen as an academic issue into a social and legal one.

In the following sections we will use this case to explore three important ways of engaging in ethical thinking. Remember that this is the introductory chapter. Therefore the concepts are 'introduced'. Later chapters will go into much more detail about how to engage in systematic, critical thinking processes that will help someone working in ICT to resolve the ethical situations they face.

1.2 ETHICAL THINKING

Having had a brief introduction to the SOCOG case, if you are now asked to think ethically about it you will most likely be stumped. Would you even know where or how to start? Are there any tools that can help you to think ethically about the case? Well, there are many ways in which you can effectively deal with this or any other ethical situation you are faced with. We will introduce three of them in the following three subsections. No one method is better than any other. No one of them will necessarily produce the best solution to any given problem. It is up to you to exercise your professional judgment as to how best to solve the problem you are dealing with. We are assuming that you, the reader, are tertiary trained. We would not expect someone who has attended a three-day workshop on programming in XYZ language to display professional competence in ethical or other situations. But critical thinking ability is part of any tertiary course. You have been equipped to think critically and are now adding to that ability some useful tools to assist you when faced with critical thinking in the area of ethics.

There are numerous ways of analysing ethical issues. One approach is to consider what is a 'professional response'. Another is to examine what the appropriate response is according to the professional society to which you belong; for ICT professionals in Australia this is most likely the Australian Computer Society (ACS).

Still another approach is to follow some sort of ethical guidelines. Several guidelines have been developed independently of each other. In Australia, one that is well published is the 'Doing Ethics Technique'. It uses a series of questions to explore the issues the professional is facing and uses the answers to help develop satisfactory outcomes. As should be clear by now, we rarely know if the derived outcome is the 'best' solution. However, by following a systematic guide such as the Doing Ethics Technique, it is more likely that the outcome will be a good one, even if it may not be the best outcome.

The ACS used to have a closing statement to their code of ethics that emphasised the importance of following a professional approach. Their point was that codes, including the ACS Code of Ethics, applied indiscriminately can be dangerous. Codes are not immutable. They cannot cater for every eventuality. Similarly, guidelines or any other tool employed to resolve ethical issues are merely tools to help us think through the many ramifications of an ethical decision in a logical, systematic fashion. That statement at the end of the code was (Burmeister 2000):

> In summary, a member is expected to act at all times in a manner likely to be judged by informed, respected, and experienced peers in possession of all of the facts as the most ethical way to act in the circumstances.

We need to remember, especially in an age that is becoming more litigious, that we can be called to account for our decisions. Thinking ethically is not about deriving the one and only solution to a problem. It is about finding the best solution we can, with the resources we have. We should be confident that our solution will indeed satisfy 'informed, respected, and experienced peers' who might go over our decision-making process.

1.2.1 Ethical thinking as a competent professional

First of all let us consider the SOCOG case from the point of view of professionalism. In order to do so, we need to consider what it means to be an ICT professional. A whole chapter is devoted to this later, so here we are merely introducing the concept.

In Australia there is an organisation called the Australian Council of Professions (ACP) which stipulates what professionalism means for the societies it accredits. There is, however, no law in Australia stipulating this, as there is in some other countries. For instance, in the USA there is a law about what it means to be a professional, and that law sets the legal standard to be adhered to by so called 'professionals'. A similar standard applies in the UK.

In essence, a profession is recognised as having the following key characteristics:

- It is an occupation requiring special, usually advanced, education and skill.
- Labour is predominantly mental rather than physical.

- Service to society is involved.
- Credentialling is involved.
- There are representative organisations.
- There is autonomy in work.
- Professionalism implies ethical behaviour.

You may query the last point. Every professional society requires its members to agree to its ethical standards; without such a requirement the ACP will not accredit a society as 'professional'. Failure by members of a professional society to adhere to its ethical standards can lead to doctors being deregistered and barristers being debarred. Perhaps unfortunately, a number of societies accredited by the ACP do not have 100% of practitioners as members of their society, as is the case in medicine and law. The ACS is one such example. Even with 16 000 members, and being recognised as the representative body for ICT matters that all levels of government prefer to deal with, this is only a small percentage of the approximately 250 000 people who work in some capacity in ICT in Australia. Therefore, in the case of the ACS, the only action that can be taken against members who act unethically is to expel them from the professional society. This is one reason why in the discussion on the code of ethics (below) the focus is on aspirational aspects of the code. That is, the focus is on encouraging members to aspire to fulfil the code (the carrot approach), rather than on fearing the consequences of not fulfilling the code (the stick approach).

Finally, before considering the SOCOG case, it is sometimes helpful when attempting to gain an understanding of professionalism to consider its opposite; that is, unprofessional behaviour is sometimes easier to understand than professional behaviour. Imagine a patient who comes to a doctor with a wart problem. She has had several warts on various fingers of her left hand. No ointment works. She asks the doctor to cut off the hand. Obviously, the doctor would not cut off the hand but counsel her about alternative treatments. Similarly, in ICT it would be unprofessional simply to excuse behaviour by saying in effect 'I did what the client wanted'. This is similar to the Nuremburg defence when, after World War II, some soldiers tried to excuse their actions by claiming they were simply following orders. In ICT, as in all professions, the public ought to be able to expect a person to exercise professional judgment. Clients do not always know everything that an ICT system can or should do. It is your role, as the professional, to advise them. A simple search of the ACS website will reveal many case studies taken from actual experiences in the ICT workplace in Australia where clients failed to see various potential problems, in areas of interfaces, security, privacy of customer data, confidentiality and various other areas.

So, from a professional viewpoint, what can be said about the SOCOG case? Since at least May 1999 the Australian standard for complying with accessibility standards has been the World Wide Web Consortium's (W3C) Web Content Accessibility Guidelines (WCAG). All designers of websites should be familiar with these. In the case of the Olympic website, designers ignored these guidelines, even after their oversight had been brought to their attention. This was a breach of the public's trust, an unprofessional act. Professionalism implies specialist knowledge. The designers had a responsibility to the community they were serving to ensure equality of access. The website was created to serve the needs of the whole Australian community and many others viewing events from overseas. The onus was therefore on them to ensure, through design and testing, that all members of the public did in fact have equal access.

As stated above, the ACP has recognised members of the ACS as professionals. In fact, the ACS was the first computer society in the world to achieve such recognition for its members. Prior to that, only software engineers who were members of the Institute of Electrical and Electronics Engineers (IEEE) could claim to be 'professionals'. In theory, only Australian ICT practitioners who are members of the ACS can call themselves professionals, and others can use whatever terms they like – consultant, practitioner or something else. In reality, the ACP and the ACS are unable to enforce (legally) that the term 'professional' is restricted to ACS members for people working in ICT.

We would encourage all students to join the ACS. After all, your Australian ICT course, if it is a good one, will need to have been accredited by the ACS. You are studying to distinguish yourself from the 'people out there' who go to a few courses and hang out a shingle to say 'hire us, we can meet all your ICT needs'. You have put in the hard work to distinguish yourself through specialised knowledge acquisition and years of study. You deserve the title 'professional'. The cheapest way to join is as a student member; and don't forget that membership fees are tax deductible. Attending ACS meetings and seminars, joining the local ACS branch and getting involved will teach you a lot about professional life in ICT and help you to develop networks with people in the industry that can prove invaluable to you over coming years.

Having briefly examined the concept of professionalism, we now turn our attention to the professional society, to see what assistance it can give in resolving ethical situations we face in the workplace. Gotterbarn (2000) argues that a professional's work should involve understanding the profession's code of ethics.

1.2.2 Ethical thinking following the professional society

Having briefly explored the concept of professionalism, the next step is to consider the moral guidelines professionals are expected to follow. The moral implications of professional acceptance are demonstrated by the fact that the ACP clearly links ethics and professionalism in the concept of 'public trust' (ACS 2000).

> It is inherent in the definition of a profession that a code of ethics governs the activities of each profession. Such codes require behaviour and practice beyond the personal moral obligations of an individual. They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues. Further, these codes are enforced by the profession and are acknowledged and accepted by the community.

It is worth noting the force of the phrase 'beyond the personal moral obligations of an individual'. This is not arbitrary. Professionals tend to be privileged, both with respect to status and income, and have generally benefited from the education system to a greater extent than most people. More importantly, however, professionals have expertise that others do not have, and therefore their opinions are trusted in areas of their expertise. This 'public trust' confers a duty of care. Because of the need to trust the professionals' expertise, others become vulnerable, both to intentional harm and to carelessness. Duty of care is concerned primarily with this carelessness or negligence. The emphasis here is not so much on refraining from actions which intentionally harm others, but rather on taking care to avoid actions which are likely unintentionally to harm others. This duty highlights something that is easily overlooked. Those professionals who cause, usually indirectly and unintentionally, injury to others through negligence or carelessness, should be held accountable for their actions. None of us should be careless, but because vulnerability is conferred by the professionals' expertise, professionals have a special moral obligation.

The ACS can help its members resolve ethical situations in a number of ways. The one we will focus on in this section is the code of ethics, which is explored in greater detail in a later chapter. However, before considering the code of ethics of the ACS, let us briefly examine other help that the ACS can provide to its members in this area.

Members of the ACS receive numerous benefits of membership. Among these is a bi-monthly magazine, the *Information Age*, which contains an 'ethics corner'. This is typically a brief examination of a topical ethical issue – outsourcing, nanotechnology or whatever the current interest may be. Here is a simple way in which members can keep up to date with current ethical issues facing ICT professionals in Australia.

The ACS is divided into eight branches, one in each capital city. Most special interest groups and seminars are run by individual branches. However, ethical matters are dealt with on a national basis, through its Committee on Computer Ethics (CCE), which it founded in November 2003. This committee of volunteers is composed of experts in ICT ethics who are charged with helping the ACS and its members deal with ethical issues confronting them. So another avenue open to members of the ACS is to seek the help of the CCE to resolve ethical situations they are unable to solve themselves.

Another avenue open to members is to seek the help of one of the affiliates of the ACS. This can be done whether you are a member of the ACS or not. Affiliates include the Australian Institute of Computer Ethics (AiCE), the International Federation of Information Processing (IFIP) and any of the equivalent bodies to the CCE in affiliated computer societies around the world, such as the British Computer Society (BCS) or the American Association for Computing Machinery (ACM).

The main source of help in ethical decision making provided by the ACS is its code of ethics and its associated codes. The ACS Code of Ethics comprises two sections. The first section is a simple policy statement plus a declaration of six Values and Ideals, which are then expanded into the second section, a detailed set of statements called the Standards of Conduct. Supplementary to the Code of Ethics is the Code of Professional Conduct and Professional Practice. This code was developed to provide more practical guidance in the day-to-day activities of ICT professionals.

Before considering how the code of ethics can help us with the SOCOG case, let us briefly reflect on why societies such as the ACS codify ethics. Several reasons exist, including the following:

- Codes can identify both current and future problem areas.
- Codes help the professional to identify and think through potential ethical issues and how to resolve them *before* actual problems arise.
- Codes are agreed to by the entire profession, or at least by the members of that society, which in the case of the ACS is over 16 000 members.
- Codes lend support and justification for the actions of individuals faced with problems that are addressed by the code.
- Once a breach of the code has been identified, both direct and indirect help for its resolution may come from the society itself.

Another thing to consider about codes is the fact that there is more than one. Why is that? If something is ethical or unethical in one profession, say accounting, would that not also be the case in another, such as ICT? Or if something is ethical in America or in Europe, should it not also be so in Australia? So why not have a universal code of ethics? The reason is that we are all different, from one country to another, one profession to another and even different over time. For instance, one of the principles of the ACS Code of Ethics is 'honesty'. While we do not think that in a future revision of the code the ACS will ever advocate dishonesty, we do believe that the statements that make up the Standards of Conduct – that is, the statements which interpret what we mean by honesty – can and will be likely to change. For instance, in some industries in the past paying kick-backs was considered normal business

practice. These days in Australia kick-backs are often seen as a form of bribery or corruption. So it is entirely possible that in the past kick-backs would not have been seen as a breach of the honesty principle, while today such practice would be seen by many as a breach of the principle of honesty. Similarly, there are culturally different interpretations of principles such as honesty, so that a computer society in Iran, China or Brazil may have different views from members of the ACS.

As though such differences were not enough, different companies have emphases that differ depending on the customer base they are serving. So some companies stipulate their own codes of ethics, or codes of practice. Then, too, ICT is a diverse, heterogeneous industry. ICT professionals do not all belong to one professional society. Software engineers may belong to the IEEE. IT management consultants may belong to a management society. Usability engineers frequently belong to psychological societies. Many systems administrators in Australia belong to SAGE, the guild (society) for systems administration. Each of these societies can have its own codes of ethics, such as that of SAGE, which targets ethical areas particularly affecting their members.

The ACS Code of Ethics has six principles, referred to as its 'Values and Ideals', on which it is based (see Appendix A). In brief, they are priorities (the public interest is more important that my personal interest), competence (I work competently), honesty (I represent my skills honestly), social implications (consideration is given to people affected by my work), professional development (I seek to upgrade my skills) and information technology profession (I share a responsibility to enhance the integrity of the ICT profession).

The details of how each of these principles is interpreted are seen in the Standards of Conduct. Currently the Standards of Conduct are composed of 37 statements. However, at the time of writing, the ACS CCE is engaged in a process of reviewing and updating the ACS Code of Ethics. The reviewed code is expected to go to the ACS Council for voting in November 2007. It is expected that the principles of the code of ethics will remain unchanged, but their interpretation, as expressed through the Standards of Conduct, is highly likely to change. It is also anticipated that the associated Code of Professional Conduct and Professional Practice (see Appendix B) will change, though probably not until a separate subsequent review that will bring it more into line with the then new code of ethics. If all this sounds a bit confusing, it may help to think of this in formulaic terms.

Code of Ethics = (Values and Ideals) + (Standards of Conduct)

So what does the code of ethics of the ACS tell us about the SOCOG case? Again, as this is an introductory chapter the discussion is deliberately brief. As a further exercise at the end of this chapter, a group discussion in class should be able to discover other areas of the code of ethics that address issues in this case study.

The designers failed to 'place the interests of the community above those of sectional interests', which is part of the first ideal of the code. One of the things argued in the court case was the high cost of making the changes retrospectively. It was argued that the cost would be hundreds of thousands of dollars. Expert witnesses disputed this, claiming it would total about $30 000. Irrespective of what the actual cost might be, the point is that it should not have been necessary to do this retrospectively. If the community (public) interests had been properly (professionally) considered in the first place, then the design would have been inclusive from the start.

Similarly, the case shows a lack of consideration of the fourth ideal on social implications. Having had someone highlight the problems with the site, more than a year before the Olympic Games, they still did not 'strive to enhance the quality of life of those affected by (their) work'. In fact the opposite occurred; they took no action and seemed to hope that the complaint would be forgotten and the complainant ignored.

Finally, it could also be seen as a breach of the sixth ideal in that this case brought the ICT industry into disrepute. So rather than striving to enhance the reputation of the ICT profession, their lack of action in response to a complaint brought dishonour to the profession – and not just in Australia; this case made headlines around the world, for all the wrong reasons!

We have now looked at two related ways of thinking ethically about the SOCOG case. The first was by taking the view of a professional in our field, ICT. The second was related to the first, looking at the guidance provided to ICT professionals by their professional society, by way of its code of ethics. Now we look at a more general approach to ethical thinking, the use of guidelines.

1.2.3 Ethical thinking based on systematic guidelines

Not all ethical issues are the result of professional investigations or the result of situations that arise in the workplace. So a professional ethics approach is not always the most appropriate way to tackle a situation. A more general approach which can serve both the needs of professionals and also other forms of ethical investigations is to follow some sort of ethical guidelines. As stated above, several guidelines have been developed in ICT and other areas of ethical inquiry, in Australia and overseas. In Australia, one that is well published is called the 'Doing Ethics Technique'. It uses a series of questions to explore an ethical issue and uses the answers to help develop satisfactory outcomes. The purpose is to come up with a good, workable answer. Unfortunately, we rarely

know whether the solution is the 'best' answer. Hopefully, if the process is followed systematically, the solution will be a good one.

The Doing Ethics Technique revolves around the resolution of the following questions, taken in this particular order (Simpson, Nevile and Burmeister 2003).

1 'What is going on?'
2 'What are the facts?'
3 'What are the issues?'
4 'Who is affected?'

This leads to:

5 'What are the ethical issues and implications?'
6 'What can be done about it?'
7 'What options are there?'
8 'Which option is best – and why?'

Let us briefly consider the SOCOG case in the light of this approach. The reason this is not a complete consideration of the above questions is because this approach works best when done in groups. You are encouraged to complete this exercise as a group with your peers or fellow students. As this is intended as a class exercise, the following is an incomplete list of answers to only some of the questions of the Doing Ethics Technique.

This process begins by considering 'what is going on?' This is a case about discriminating against a minority user population. Professional design standards addressing the needs of this minority group and possibly other similar groups were ignored. As a result, when events went online, at least this person and probably many others missed out on being able to attend events at the Olympic Games.

The second question asks us to describe the facts of the case. The facts include:

- A man wanted to book events for his family at the Olympic Games, but couldn't because he was visually impaired.
- The man uses a screen reader to access websites.
- The Olympic website was created to cater to all the public, including people with various types of disabilities.
- The man had raised the potential problem over a year before the event, but no action was taken to remedy the problem.
- At the time of the event bookings the man was unable to book events for his family because of his visual impairment, and as a result he and his family missed out on being able to attend their desired events.

Readers are encouraged to research this case further on the Web. The following facts are not stated above, but are available on the Web.

- The man was paid in settlement $20 000 damages.
- It cost SOCOG over $160 000 in legal fees, not including the $20 000 paid in damages.
- Expert witnesses estimated that, had SOCOG taken action initially, the cost of fixing the problems would have been under $30 000.

The third question asks us to consider the issues involved. While our main focus is on ethical issues, it is usually easier to do this as a brainstorming session, writing down all the issues involved first. Later, in answer to question 5, this initial list of issues will then be narrowed down to consider what the ethical issues involved are. The next question then gets us to think about the stakeholders. Some are obvious, such as the man who brought the complaint to HREOC. Others are less obvious, such as the design team for the website. We need to consider all the people affected. Having examined the first four questions, the person using this technique has enough information available to proceed with an analysis of the case and derive a solution. Note the last two questions. Do not fall into the trap of going with the first solution you derive. Often it is through considering alternative solutions that the best available solution emerges.

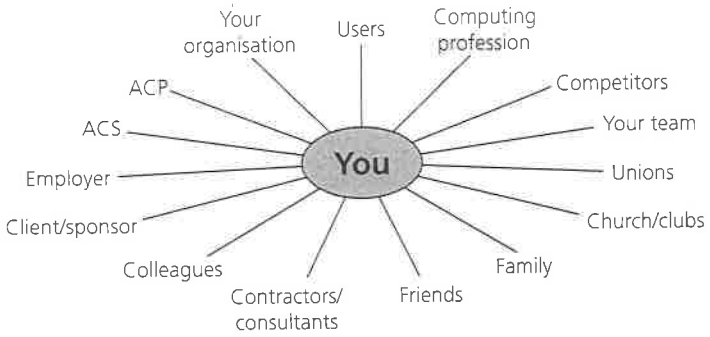
In summary, it is not possible for most people confronted with an ethical situation in the workplace suddenly to 'think ethically'. What is needed is an approach to help people engage in ethical thinking. The Doing Ethics Technique is one approach of many. Other techniques exist. The code of ethics of the ACS and other similar codes are also helpful. Finally, one further approach is to ask your professional society for helpful advice. Such requests can be handled confidentially and give people access to ethical and collegial expertise that may prove very helpful to them.

Having explored different ways of engaging in ethical thinking, we now turn to consider more generally the purpose of teaching ethics. The ACS was the first computer society in the world to mandate the teaching of ethics in ICT courses. Without such teaching in an ICT course, the ACS will not accredit the course. Since then (almost two decades ago), almost every computer society around the world has done likewise in their respective countries. So why do all these computer societies consider the teaching of ICT ethics important to the development of an ICT professional? That is what we will explore next.

1.3 GOALS OF ICT ETHICS EDUCATION

Given the discussion so far, what might we say are the goals of computer ethics? Are they to help professionals deal with people who are disadvantaged?

FIGURE 1.1
Relationships that can impact on your professional life



with your spouse before coming to work can affect how you relate to colleagues that morning. A planned weekend fishing trip that you are asked to postpone because the project you are working on requires more work to meet an upcoming deadline will affect your relationships. But other events can't be cancelled as easily as a fishing trip away with your friends.

The point is that relationships in the workplace, and outside of it, impinge on each other. We cannot isolate our private relationships from our professional ones. It is in dealing with people, in dealing with relationship issues, that many ethical issues arise. Relationship issues arise with team members, clients, sponsors, employees, employers, unions, users, participants in user testing and in many other situations.

We can see from this discussion that technology has a social context. It is not all about technical aspects. Good communication with many people is required in the workplace, and not just the ICT workplace. Ethics is not something to shy away from. We need to overcome the fear that we cannot do it. Ethical issues faced by ICT professionals are here to stay. One aim of this book is to give you the tools to handle ethical issues with confidence.

At this point you are hopefully beginning to get a better grasp of what ethics is all about. Now we turn to defining the term formally and distinguishing different types of ethics, as they are relevant to ICT.

1.4 DEFINING ETHICS

When considering your own ethics, there can be many influences: your parents, your peers, the schools you went to, your friends, significant others in your life, books you read and so on. It is often maintained that ethics is just a matter of opinion, and what is right for me might not be for you. This individualistic, relativist view, however, is not the position adopted here. Ethical beliefs might be, in some sense, a matter of opinion, just as all beliefs, even scientific ones, are but they are not, or should not be, merely opinions. Ethics can be discussed rationally and beliefs can be backed up by facts.

In the chapters that follow you will be encouraged to explore various things that can influence your ethics, starting with a more detailed examination of philosophical ethics. However, when it comes to 'professional ethics' we are concerned with defining the ethical standards of a particular profession, in our case the ICT profession. It should be obvious that as a profession we cannot permit each person to follow a different standard. Part of professionalism is that we apply a common standard to our work, and that the public, the people for whom we work and others who benefit from our labours can depend on certain standards. This is one reason why professional societies mandate that members adhere to their codes of ethics. So in defining ethics we need to understand what is meant by ethics generally, as well as what might be meant by ICT ethics and professional (ICT) ethics.

1.4.1 Ethics and philosophy

People have thought about ethical issues for thousands of years. ICT is a recent phenomenon in human history, ethics is not. As stated above, ethical situations arise most often in the context of relationships with other people. Relationship issues, unlike ICT, are not new; they have existed since the dawn of human existence. First of all we should get an understanding of what is meant by ethics generally before we refine the concept to consider ICT and professionalism.

In one sense, ethics is a study of human values. It is about what people consider important to them, individually and in groups. It is about values that lead to right and wrong behaviour. Ethics is about directing people to consider the true values of life. It seeks to address issues such as finding out which values are more important than others. Ethics is associated with concepts such as personal integrity.

Ethics has traditionally been associated with moral philosophy. It is concerned with providing people with guidance for how to conduct life. Contributors to philosophical views of morality have been people such as Plato, Aristotle and, more recently, Immanuel Kant and John Stuart Mill. Philosophers have come at ethics from different cultural and historic understandings. Some have focused on motivating factors – for instance, if one's motive for an action is right, then the action is right regardless of the consequences. Others have said the motive is not relevant, only the result – you have no doubt heard the saying 'the end justifies the means'. And of course there are many views between the extremes. Over the years various views have been labelled using

such terms as consequentialism, relativism, deontology, utility and many others. Each takes a different philosophic stance. Of course, very few people are purists: we all tend toward a little of one or another; our views can change over time, and we are all influenced by culture, religion and our peers.

For instance, a well known code of ethics, adopted for software engineers by the ACS, was developed with input from people around the globe, but particularly from North America and Europe. I asked the Chairperson of the task force charged with developing that code, Don Gotterbarn, whether he noticed any cultural differences in the contributions made. He 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 is harder 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.

Among the distinctions in philosophical views are three main ones. First, there is the distinction alluded to above, between rights ethics and virtue ethics. Second, there is the distinction between relativist ethics on the one hand, and objectivist ethics on the other. The former states that all moral values are relative either to an individual or to a culture. The latter states that there are moral truths which are true in more or less the same way that scientific truths are. For now, we will assume that moral truths are either objective or that they are relative to a culture. The third distinction is that between consequentialism and deontology. Consequentialist theories state that consequences are all important in determining what is ethical. The best known of these theories is utilitarianism, particularly as it was made famous by John Stuart Mill. Mill's well known view is that the morally right action is that which produces the greatest happiness for the greatest number of people. This view appeals to many people because it seems right that consequences are important in determining the rightness or wrongness of actions. On the other hand, deontologists argue that some actions seem wrong regardless of consequences. Some things are right or wrong in themselves, regardless of the intentions of the person performing the action. For example, Immanuel Kant believed that lying was always wrong, regardless of the consequences.

Having briefly considered ethics generally, we now need to narrow the scope. The aim here is to refine our definition to focus on what ethics means in the domain of ICT.

1.4.2 Ethics and ICT

Ethics in the area of ICT has been explored since the advent of computers. Initially referred to as computer ethics, the advent of communications technologies and other technologies that are not necessarily computers has led to a broader understanding of ethical issues in ICT.

Computer ethics saw ethical issues as those arising from the use of computer technology. In other instances, computer ethics was seen as merely an extension of existing ethical issues. For instance, an employer choosing to discriminate against certain types of workers could do so before the advent of computers. Therefore when computers were used to discriminate against workers, it was not a new problem, somehow embedded in the technology, but an extension of an earlier problem.

Yet there are instances where ICT causes the consideration of new ethical dilemmas. Typically, as new technology develops, there exists a policy vacuum about how best to deal with it. An obvious example is the spread of porn on the Internet. When the World Wide Web made the distribution of pornographic images and 'adult' content freely available and accessible to non-adults, was it a new or an old problem? Did this constitute a new ethical situation caused by ICT? Some would argue that the porn industry was well established millennia ago. Others would argue that Internet porn is a new thing (at least it was back in the mid-1990s). For instance, there are issues of how to restrict access. Related to this are issues such as freedom of speech and expression; that is, to restrict Internet porn is to breach some people's rights to express themselves freely.

So where does this put ethics and ICT? If ethics has to do with human values, then ICT ethics can be considered as the impact technologies have on human values. Technology influences society and the way people behave, and some of those influences have moral implications.

Now that we see the influence of ICT on societal values, we also need to consider what we as ICT professionals need to understand about ethics. We need to define ethics in terms of our professional responsibilities.

1.4.3 Ethics and professionalism

In the discussion above we noted that the ACP requires members of professional societies to abide by a code of ethics. This is part of the requirement of professionalism in this country and overseas. In that case, is professional ethics the same as ethics generally, or is it different somehow? What might be professional ethics in ICT?

Donald Gotterbarn, who until recently was both the Chair of the ethics committee and of the software engineering committee of the Association for Computing Machinery (ACM), has been a strong advocate of 'professional ethics'. Professional ethics in his view is about the values that should guide a professional. These are not personal values necessarily, but the values agreed to by the profession to which that person belongs, in our case, the values laid down for members of the ACS. Even people practising in ICT in Australia who

are not members of the ACS, in our view should follow these values in their practice. Aside from any altruistic reason, there is the very pragmatic reason that as a society we are becoming much more litigious. So even if you are not a member of the ACS, there is likely to be a measure of protection in being able to argue that you followed the industry standards for the ICT profession, rather than just being able to say that you did what seemed right to you at the time.

So professional ICT ethics can be seen as an authoritative standard. It is ethics based upon accepted norms, and can be seen as normative ethics. The case we have attempted to make here is that the values expressed in the ACS Code of Ethics are normative for ICT professionals in Australia.

At this point you have explored different ways of thinking ethically. You have also been introduced to the goals of ethics education and have some understanding of how ethics and ICT relate to each other. The final aspect that is addressed in this chapter is an attempt to set the Australian ethical inquiries in the global context, and to describe the various disparate and collaborative ethical initiatives engaged in across Australia.

1.5 THE AUSTRALIAN PERSPECTIVE

In this final section we place ethical discussions in the Australian context. We need to see the Australian perspective as the micro view, in the larger global picture, while at the same time seeing the Australian perspective as the macro picture, with micro views within it. Effectively, what this section attempts to do is to introduce the reader to where the Australian perspective fits. We will approach this in a top-down fashion, starting with the big, global picture. From there we come to Australia and then we will go down further to groups within Australia.

After World War II, Unesco advocated that less well developed countries should not be left out of technological developments. It argued that there ought to be an overriding body that is responsible for technology diffusion. The result was the establishment of the International Federation of Information Processing (IFIP). Today IFIP has at least one member ICT professional society from many countries around the world. Where a country has multiple professional ICT societies, typically only one can be a member of IFIP. Membership means being able to appoint national representatives to IFIP technical committees. One exception is the USA, which is represented by two organisations, the ACM and the IEEE. Australia is represented through the ACS.

IFIP is structured around 13 'technical committees' (TCs), each with 'working groups' within it. There have not always been 13 committees, but the number of TCs changes as the need arises. They cover areas such as software engineering, information systems, security, human computer interaction and more. One is Technical Committee 9, 'Computers and Society'. One of its working groups is TC 9.2, 'Social Implications', and it is in this one that ethical matters are addressed. For instance, IFIP TC 9.2 currently has a special interest group examining how new member societies can develop their own codes of ethics. For example, this special interest group helped the Finnish computer society develop its own code of ethics (accepted at the start of 2006), using the lessons learnt by other computer societies around the world.

Each member society puts up one national representative for each of the 13 technical committees. However, the membership of working groups comprises many people who are not national representatives. They are typically experts in the technical aspects being addressed by that working group. Usually the work done for these working groups is done by volunteers, with support sometimes being provided by their employers and/or their professional society. Recall that the last part of the 'Values and Ideals' of the ACS Code of Ethics is to enhance the integrity of the profession. Many see service within the ACS, IFIP or one of the associated committees as their way of giving back to the community and enhancing their profession.

Aside from committee work done by IFIP, IFIP TCs and their working groups regularly hold conferences around the world, giving people opportunities to network, share ideas and to collaborate on a global scale.

In the context of IFIP the Australian ethics perspective is the micro view. The ACS is one of over 100 member societies, a contributor to the global ICT profession. However, taking the Australian scene as the macro view, we can explore what happens within Australia. In this view, the ACS is but one of a number of organisations promoting ethical thinking in ICT. Others include the Australian Institute of Computer Ethics (AiCE) and the Centre for Applied Philosophy and Public Ethics (CAPPE). These are not competing organisations. For instance, at the time of writing, CAPPE is engaged in a major investigation of ethical issues confronting ICT professionals, funded by the Australian government, with $75 000 contributed by the ACS. Another example is that AiCE and the ACS CCE have held numerous joint industry seminars promoting ethical considerations. Still another example also serves to illustrate that international collaborations often occur independently of IFIP, through direct collaborations between computer societies and ethics research centres around the world. For instance, the British Computer Society recently reviewed its code of ethics and the Chair of its committee facilitated a workshop for the ACS CCE to help Australia with its current review of its code of ethics, with joint funding being provided by CAPPE and the ACS. Yet despite such collaborations, organisations such as the ACS, AiCE and CAPPE serve differing needs in the ICT community in Australia.

Broadly speaking, though there is significant overlap between the services provided by these organisations, ethics within the ACS can be seen as being concerned with professional ethics. AiCE and to a lesser extent CAPPE are more concerned with ICT ethics and its applications. Professional ethics can in fact be seen as only one aspect of the concerns of AiCE and CAPPE. CAPPE is actually concerned with philosophy and ethics in all areas, not just ICT. It should also be noted that the ACS has at times established working groups tasked with examining broader ethical issues. However, broadly speaking, we could say that the ACS is concerned with a narrow scope of ethics, while AiCE is concerned with the full breadth of ethical issues in ICT, and CAPPE with the full breadth of ethical issues in all areas of philosophy and ethics affecting Australia and beyond.

AiCE was founded in February 1998. It soon grew to having 30 TAFE and university institutions as members, as well as over a dozen companies. It had chapters around Australia, but only the Sydney, Canberra and Melbourne ones were really active. Of these the Melbourne one was particularly active, running monthly 'Conversations', to which speakers were invited and with whom participants could afterwards have a lively discussion, usually over drinks and finger foods. The Melbourne Chapter also ran the AiCE website and an online, moderated discussion group on all manner of ethical issues. In recent times AiCE, staffed as it is purely by volunteers, has been somewhat quieter, with irregular events as opposed to the regular monthly events run by the Melbourne Chapter in the past. One thing AiCE has been responsible for is running international conferences roughly every two years. These attract international participants and keynote speakers. They have been run in Melbourne, Canberra and Sydney, the most recent one being in Geelong. People interested in attending international ethics conferences should also consider Ethicomp, the Computer Ethics Philosophical Enquiry (CEPE), and IFIP's Human Choice and Computers (HCC), the three main international conferences that have run regularly for over a decade. Ethicomp conferences are held every two years in various countries around the world; their focus is on computer ethics and professional responsibility. CEPE conferences run annually, typically in Europe, and are focused on computer ethics and related philosophical inquiry. IFIP HCC conferences are run by IFIP's Technical Committee 9, 'Computers and Society'. HCC conferences are usually held every two years, but gaps of four years have occurred. They are focused on non-technical, societal issues in ICT, with ethics being only one aspect of such a focus. AiCE conferences by comparison tend to have far fewer participants, with 20 to 50 people, compared to over 100 delegates for some of the overseas ethics conferences. AiCE conferences are always held in Australia.

One key distinction between AiCE and the ACS is that many people involved in AiCE are not able to be involved with the ACS. Members of AiCE include people in agriculture, law and engineering, who use ICT in their work and want to have a say in the social implications of the technology they use. These are typically people who cannot qualify for membership of the ACS, given that its rules for membership effectively require that members have an ICT qualification. Through AiCE these people can have a voice that might otherwise be denied them.

CAPPE is a nationally funded research centre that was funded for a nine-year period, with funding due to run out at the end of 2008. The funding is through the Australian Research Council's Special Research Centre scheme. CAPPE seeks to promote community discussion and professional dialogue in relation to matters of public and political concern. CAPPE has the largest group of philosophers working on applied philosophy and public ethics in Australia, and indeed one of the largest such groups in the world.

Continuing the top-down approach, at the micro level we can look beyond formal organisations such as CAPPE and AiCE. There are numerous individuals and smaller groups around the nation interested in various ICT ethical matters. Some contribute to public forums, both online and in formally organised events. For instance, returning to the SOCOG case and visual disabilities, Vision Australia is an organisation focused on the needs of the visually impaired. Among its work it promotes better understanding of the adaptive devices available to help people with various visual disabilities and is as a result at times involved in events and programs that promote greater social responsibility toward the disadvantaged in the Australian community. This too is an aspect of ICT ethics in Australia.

SUMMARY

We have seen that ICT ethics is effectively similar to the study of ethics in other fields. Engineers, medical practitioners, lawyers and many other professionals face ethical issues in their respective workplaces. Some ethical situations faced by medical practitioners are unique to their field, while others in ICT are unique to ICT professionals. Many ethical issues are common to different professions. Where they are not in common, the means of resolving ethical issues are nonetheless common. There are tools that professionals use. These include the code of ethics of the professional society, and an understanding of the basic ethical theories. For Australian ICT professionals this means we need to understand the ACS Code of Ethics. In fact, whether we are members of the ACS or not, the code of the ACS sets the standard for what is professional ICT behaviour in this country. For example, Australian university courses in ICT are accredited in part by the ACS. One requirement for ACS accreditation is that ICT ethics be taught in an ICT course. Therefore, all Australian ICT graduates are expected to have at least a basic

understanding of ICT ethics. That basic understanding includes ethical theories, the ACS Code of Ethics and practice at working through real examples of ethical problems faced by Australian ICT professionals.

In addition to understanding the Australian perspective, this chapter has introduced the big picture, or macro view. The ACS is one of a great number of national societies, each charged by their members to fulfil similar roles. An umbrella organisation, IFIP, seeks to help member organisations to discharge their responsibilities, by helping members understand the global perspectives, and by helping members learn from each other's experiences. In looking at the bigger picture we find that not everyone shares our ethical views – for example, not everyone values human life the way many Western nations do. In broad terms, there are also differences between the way North Americans and Europeans apply ethical theories, showing that there are cultural or national biases toward one or another ethical theory. Just because North Americans view the ethical thing to do in a particular situation as 'xyz' does not mean Europeans, South Americans or Australians agree with that perspective. This is one reason why IFIP has not attempted to develop a global ICT code of ethics. We need to appreciate and understand our unique perspective as Australian ICT professionals.

STUDENT ACTIVITIES

Pre-tutorial work

1 Browse the website of the Australian Computer Society (ACS). Find the six ideals of its Code of Ethics and decide if you could agree to abide by these. Find the sample case studies and print a couple that you find interesting and would be willing to discuss in class.
2 Find the website of the International Federation of Information Processing (IFIP). What is the role this organisation plays? How is it related to the role the ACS plays? Why for decades have ICT professionals around the world chosen to be members of a national computer society and through it of a global one? What has this to do with ethics? (*Hint:* Check out Technical Committee 9 and in particular its subcommittee TC9.2.)
3 Look ahead in this book to what is discussed in future chapters. How is what is covered in this introductory chapter relevant to what lies ahead?

In-class activities

1 Why study ethics as part of an ICT course?
2 Define 'ethics'.
3 What are the requirements of being a 'professional' in any field? (*Hint:* See the website of the Australian Council of Professions.)
4 Where does the Australian perspective fit into the global perspective on ICT ethics?
5 What are the main ethical theories discussed in this chapter? Give a brief definition of each.
6 The cases discussed in this chapter are not unique. On the ACS website there are over 30 cases, taken from real experiences of ICT professionals, working in Australia in the past decade. Discuss one that interests you with the rest of the class. Why did you choose this one?

The following two questions all relate to the SOCOG case discussed in this chapter. You should review that case before attempting these questions. Further information about this case is readily available on the Internet, and you are encouraged to read it before the class discussion for the next two questions.

7 Split into groups of three to five people and find other areas of the ACS Code of Ethics that apply to the SOCOG case in addition to the ones mentioned in the chapter.
8 Split into groups of three to five people and complete the application of the Doing Ethics Technique to the SOCOG case.

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