A Framework for Ethical and Professional Practice in Web Design & Development

CA1033A: Professional Development

Nicolas Lanquetin[1]
0604918@abertay.ac.uk

[1]University of Abertay Dundee
School of Computing & Creative Technologies

A Framework for Ethical and Professional Practice in Web Design & Development

Nicolas Lanquetin – 0604918@abertay.ac.uk

University of Abertay Dundee

December 1, 2006

Abstract

The aim of this paper is to outline a framework for ethical professional practice, in particular for web design & development. To clarify the term computer ethics, a possible definition will be presented with a comparison to the main body of ethics. In a second step, ethical issues related to web design & development will be analysed and possible professional practices will be discussed.

keywords

Cyber ethics, computer ethics, information ethics, information technology ethics, information and communication technology (ICT) ethics, global information ethics, internet ethics, ethical professional practice, WDD, ethics code, ethics standard, ethical practices

1 INTRODUCTION

Analogue to the automobile invention, some creations of new computer or IT products might very well have a great impact on society. Bittorent[1] for instance, had an immense impact on the internet traffic using up 35% of the entire internet bandwidth in 2004 (Pasick, 2004). While the protocol was meant for good, it is in most cases used to spread copyrighted material. It is therefore important to thing about the ethical consequences of our actions.

[1]Bittorent is the most used P2P protocol

Computers have the capability to be used for good, as well as to cause harm. Because it has the potential for harmful abuse, it must be ethically considerate. Even though the ethical problems arising from computers are mainly the well-known issues such as privacy, power and property, the possibilities are almost infinite because of the nature of computers. On that account, computing professionals ought to be concerned with computer ethics (henceforth CE).

CE try to analyse where the problems come from and what consequences they implicate (section 3). Another aim of CE is the definition of ethical standards or policies dealing with the ethical behaviour (section 4).

2 COMPUTER ETHICS

Tavani's wide select list of recent work about CE (Tavani, 2001), as well as the various CE institutes and CE codes (see section 4) clearly demonstrates the importance of ethics in the IT field. Although there are many resources available about that subject, it is not easy to define CE, since ethics are in general a vague domain, in particular for computers.

Nevertheless, it can be said that CE cope with the already *well-known issues* such as 'privacy, risk and reliability, equity and access, quality of life, property rights, and use of power' (Martin, 1997). Johnson, one of the most important thinker in CE, even believes that ethical issues arising from computers are

a 'new species' of existing generic moral issues. (Johnson, 1997, p. 61) (Johnson, 2001, chapter 1) (Ritchie and Archibald, 2006)

Computer Ethics Versus Main Body of Ethics

What actually distinguish CE from other ethics, is the special concern about computer related ethical issues and how computing professionals should make appropriate decisions regarding professional and social aspects (Martin, 1997, p. 8 et seq). CE have to cope with much more than mere old ethics issues applied to computers. Parker, Swope and Baker (1990) for instance offer four ethics issues, which are computer specific only (see section 3).

As stated by Bynum (2000), there is a need to re-examine ethics for computers, due to the fact that what applies to the real world does not consequently apply to the Virtual Reality of computer environments. This is because of the nature of the computer technology itself: The limit of what a computer is able to do is the limit of our own creativity (Fodor, 1994, p. 180).

What makes computers so special, is also the invisibility factor, as explained by Bynum (2000, section 4) and Ritchie and Archibald (2006). An illustrative example is a search engine working on meta tags, which are invisible to the user, but indispensable for the search engine to work. The ethical issues, CE have to deal with, are therefore more difficult to define and to analyse.

3 ETHICAL ISSUES

There are many computer specific ethical issues, which should be considerate in order to have a more concrete view of what CE (and consequently computing professionals) have to deal with. The following examples are inspired by Parker, Swope and Baker (1990) and Johnson (1997):

- **Computer as information repository**
  Because computers allow the storage of information, there is a risk that the latter can be accessed, used and even altered without authorisation. As a result of the invisibility factor mentioned above, no one can determine what data has been stolen, because it is still available on its original place.
- **Information ownership**
  Since it is hard to define who owns algorithms or programmes, there are many property rights and copyright issues involved in CE. Here it could be interesting to analyse if software patents make sense for computer algorithms.
- **Responsibilities**
  Another issue is the question of responsibility. Who is at fault when downloading and distributing copyrighted material on P2P[2] networks: the programme (and its creator respectively) or the user using it? Who is responsible for content posted on public websites such as Youtube[3]?
- **Computers as thinking machines**
  There are many dangers in thinking of the computer as an infallible truth producer. If too much trust is given to the computer, false assumptions might be made, if for instance the computer should be compromised.
- **Communication in networks**
  Communication in networks allows anonymity to the user, which could be exploited to pretend to be someone else. Furthermore, the scope of concerned people is much larger; spam for instance is making use of that characteristic.

These few but very different examples demonstrate well to what extent ethics can be computer specific.

4 PROFESSIONAL PRACTICES

Computing professionals, beside of their core task, ought to take into account these ethical issues. Several points have therefore to be considered:

Firstly, computing professionals have to understand the difference between CE and generic ethics. They can build on their experience in generic ethics, to help understanding CE, but must be aware that

[2] P2P (peer-to-peer) is used in file sharing

[3] YouTube is a consumer media company for people to watch and share original videos worldwide through a Web experience. (http://youtube.com)

even though there are similarities, some significant differences must be taken into consideration. (see section 2–3) and (Johnson, 1993, p. 10 et seq)

Secondly, it is not the computer technology itself which is responsible for ethical issues, but the way it is used. It is therefore our responsibility as computing professionals to take into account the consequences of possible uses of developed products. (Stahl, 2002, chapter 3.2 and 4) and (Johnson, 1993, p. 13)

Not only must computing professionals be aware of CE, but they must also create 'rules, attitudes, conventions and laws' which encourage that awareness and the respect of moral values (Johnson, 1993, p. 13). Some ethical standards have been created for this purpose.

Ethical codes

Many professional bodies such as ACM[4], IEEE[5] and BCS[6] have created and adopted an ethics code. Most companies expect their employees to follow these for several reasons: Not only an ethical code shows that the company cares about ethics, but it also sets ethical standards and expectations for the practitioners.

Although there are various codes of conduct, they all have to a greater or lesser extent the following principles in common:

- well-being of individuals and the society
- respect for the autonomy of others
- honesty and trustworthiness
- fairness
- acceptance of responsibility
- privacy of personal and others information
- (benevolence – doing good)

(Wheeler, 2003; Gotterbarn, Miller and Rogerson, 1997; BCS, 2001)

A short, but significant code is the 'Ten commandments of Computer Ethics' by the CEI[7] (Barquin, 1992). It summarise the ten probably most important moral values in CE. Most of its 'commandments' are also present in many of the other ethical codes.

These ethical codes are not used in vain: According to Harris, Cummings and Fogliasso 'even a brief exposure to a code of ethics can have the desired effect'. Their findings are based on several studies and an own research study on that subject (Harris, Cummings and Fogliasso, 2002, p. 261 and p. 262–265). It must however be kept in mind that these codes of conduct actually represent guidelines and not legal rules. Ethical principles can't be set by authority, and a person without moral values will certainly not abide by the code. (Grodzinsky, 2000, chapter 2.4)

5 DISCUSSION

Ethical Professional Practices Applied in Honours Projects

Each student of the University of Abertay Dundee has to apply for ethical consideration for their Honours project. The project which will be carried out by the author is not much related to ethics; nevertheless it is crucial to understand the importance of this procedure. The ethical consideration of research projects is part of professional practices and prepares the student to what will be expected in their future employments (Thompson and Towell, 2004; Ritchie and Archibald, 2006).

In the author's project, new web technologies will be evaluated. Even if the technical nature of the research project does not seem to be related to ethics, some practices of ethics codes can nevertheless be applied, for instance in the *Software Engineering Code of Ethics (Version 3.0)* of IEEE, regarding principle 1, which demands that products have to meet the highest professional standard possible; or principle 2, which state that it should be acted consistently with the public interest; or principle 8, which demand that software engineers always further the knowledge of their profession (Gotterbarn, Miller and Rogerson, 1997; Gotterbarn, 1999).

[4] Association for Computing Machinery
[5] Institute of Electrical and Electronics Engineers
[6] British Computer Society
[7] Computer Ethics Institute

6 CONCLUSION AND OUTLOOK

As we could see, computing professionals have to face many computer ethics issues. For this reason, they should be aware of their responsibility to be concerned with CE. Consequences of new technologies or products must be carefully analysed, and it must be ensured that computing professionals act for the good of humanity, without harming others. Many and widely applied ethical standards exist, encouraging members to follow simple ethical practices.

Outlook

Ethics seem to be hijacked by the media: People claim to have ethical policies in order to better their image. But what actually matters, is that the outcome of policies is applied, which is not always the case. It might be interesting to research which actions must be taken to ensure a better practice of ethics codes.

References

Artz, John M. 1994. Virtue vs. utility: alternative foundations for computer ethics. In *Proceedings of the conference on Ethics in the computer age*. New York, NY, USA: ACM Press pp. 16–21.

Barquin, Ramon C. 1992. "In Pursuit of a 'Ten Commandments' for Computer Ethics." Published as White Paper by the Washington Consulting Group and Computer Ethics Institute. Available at: http://brook.edu/its/cei/papers/Barquin_Pursuit_1992.htm.

BCS. 2001. "British Computer Society - Code of Conduct Version 2.0.". Available at: http://www.bcs.org/upload/pdf/conduct.pdf.

Bynum, Terrell Ward. 2000. The Foundations of Computer Ethics. In *CEPE '00: Conference on Computer Ethics: Philosophical Enquiry*. Hanover, New Hampshire, on 15th July 2000.

Fodor, John L. 1994. CyberEthics. In *Proceedings of the conference on Ethics in the computer age*. New York, NY, USA: ACM Press pp. 180–187.

Gotterbarn, Don. 1999. "How the New Software Engineering Code of Ethics Affects You." *IEEE Software* 16(6):58–64.

Gotterbarn, Don, Keith Miller and Simon Rogerson. 1997. "Software Engineering Code of Ethics, Version 3.0." *Computer* 30(10):88–92.

Grodzinsky, F. S. 2000. "The development of the 'ethical' ICT professional: and the vision of an ethical on-line society: how far have we come and where are we going?" *SIGCAS Comput. Soc.* 30(1):3–7.

Harris, James, Maeve Cummings and Christine Fogliasso. 2002. "Ethical codes and their effect on conduct." *J. Comput. Small Coll.* 18(1):259–269.

Johnson, Deborah G. 1993. "Book Excerpt: Computer Ethics, Second Edition by Deborah G. Johnson (Prentice Hall, 1994)." *SIGCAS Comput. Soc.* 23(3-4):10–14.

Johnson, Deborah G. 1997. "Ethics online." *Commun. ACM* 40(1):60–65.

Johnson, Deborah G. 2001. *Computer Ethics (3rd Edition)*. Upper Saddle River, NJ: Prentice Hall.

Kabay, M. E. 2001. "Viruses and worms: more than a technical problem." *Ubiquity* 2(3):1.

Martin, C. Dianne. 1997. "What is computer ethics?" *SIGCSE Bull.* 29(4):8–9.

Medley, M. Dee, Rebecca H. Rutherfoord, G. Ernest Anderson, R. Waldo Roth and Stuart A. Varden. 1998. "Ethical issues related to internet development and research." *SIGCUE Outlook* 26(4):57–72.

Meyenn, Andrew. 2000. A proposed methodology for the teaching of information technology ethics in schools. In *CRPIT '00: Selected papers from the second Australian Institute conference on Computer ethics*. Darlinghurst, Australia: Australian Computer Society, Inc. pp. 67–72.

Parker, Donn B., Susan Swope and Bruce Baker. 1990. *Ethical Conflicts in Information and Computer Science, Technology and Business*. Wellesley, MA: QED Information Sciences.

Pasick, Adam. 2004. "LIVEWIRE - File-sharing network thrives beneath the radar." Yahoo! India News: Technology. Available at: http://in.tech.yahoo.com/041103/137/2ho4i.html.

Ritchie, Brian and Jacqueline Archibald. 2006. "Discussion about Ethics." Published as Podcast. Disussion hold at the University of Abertay Dundee.

Spinello, Richard A. and Herman T. Tavani. 2001. "The Internet, ethical values, and conceptual frameworks: an introduction to Cyberethics." *SIGCAS Comput. Soc.* 31(2):57–72.

Stahl, Bernd C. 2002. "Information Technology, Responsibility, and Anthropology." *HICSS* 8(1):247b.

Tavani, Herman T. 1995. "A computer ethics bibliography." *SIGCAS Comput. Soc.* 25(4):9–38.

Tavani, Herman T. 1999. "Computer ethics textbooks: a thirty-year retrospective." *SIGCAS Comput. Soc.* 29(3):26–31.

Tavani, Herman T. 2001. "Cyberethics biliography 2001: a select list of recent works." *SIGCAS Comput. Soc.* 31(2):30–36.

Thompson, J. Barrie and Elizabeth Towell. 2004. Workshop on Teaching Ethics in Software Engineering Programmes. In *CSEET '04: 17th Conference on Software Engineering Education and Training*. Los Alamitos, CA, USA: IEEE Computer Society pp. 162–164.

Weckert, John. 2000. Introduction: computer ethics, why bother? In *CRPIT '00: Selected papers from the second Australian Institute conference on Computer ethics*. Darlinghurst, Australia: Australian Computer Society, Inc. pp. 1–2.

Werth, Laurie H. 1997. Getting started with computer ethics. In *SIGCSE '97: Proceedings of the twenty-eighth SIGCSE technical symposium on Computer science education*. New York, NY, USA: ACM Press pp. 1–5.

Wheeler, S. L. 2003. "An analysis of the association for computing machinery (ACM) code of ethics." *SIGCAS Comput. Soc.* 33(3):2.