The Role of Ethics in the Field of Information and Communication Technologies

Discussion paper prepared for the ICT working group of the Swiss Academy of Engineering Sciences (SATW)

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“Ethics [is]
I: a branch of philosophy dealing with what is good and bad and with moral duty and obligation
II: the principles of moral conduct governing an individual or a group”
Webster's New Encyclopedic Dictionary, 1993

Introduction

The discussion about ethical aspects of computing has no clear starting point. The creation of IFIP TC 9 (The Relationship between Computers and Society) in 1976 may be viewed as the germ of a broad awareness of social responsibility issues in the IFIP member societies. A milestone was the adoption of the “ACM Code of Ethics and Professional Conduct” by the ACM Council in 1992. In the same year, IFIP founded SIG 9.2.2, its Special Interest Group on a Framework for Ethics of Computing. SIG 9.2.2 has its existence in a Task Group which was set up by the IFIP General Assembly after the 12th World Computer Congress where debates took place about having a single IFIP Code of Ethics. The IFIP Ethics Task Group ended its work by publishing the results of an in-depth analysis of nearly 30 codes of ethics/conduct, twenty-one of which pertain to IFIP national societies, representing twelve countries (Berleur & Brunnstein, 1996). The codes and much additional information can be accessed via a Web site maintained by J. A. N. Lee since 1995 (Lee, 1995). In 1999, SIG 9.2.2 published a report on "Ethics and the Governance of the Internet" as another part of the IFIP framework for the ethics of computing (Berleur, Ducenoy & Whitehouse, 1999).

The two meanings of the word “ethics” as cited at the beginning -- one referring to philosophical reflection and the other to more practical governing principles -- correspond to different expectations concerning the role of ethics in the ICT field. Many professionals expect ethics to provide them with a list of "do's and don'ts" giving some guidance in practical work. This expectation relates to the second meaning of ethics, “the principles of moral conduct governing an individual or a group” and assumes that the principles are detailed enough to give advice in practical situations. A typical example of ethics in this sense is "Netiquette" (network etiquette).

However, there are situations in which the other meaning of “ethics“ -- philosophical reflection -- becomes relevant.

1) When new issues arise which are not covered by the existing principles
2) When principles of a given code conflict in a specific situation
3) When the values and principles of different cultures come into conflict

Ref. Item 1) The more practical a code (a set of explicitly stated principles), the less guidance it can give when unexpected issues and problems arise. It is necessary, then, to have recourse to more fundamental ethical principles and to an open societal discourse. The history of ICT can be viewed as a sequence of unexpected issues arising from new steps in technological development. Many of them are not yet "solved" in the sense that society would have reached
consensus on what ethical conduct means in the face of the new facts. In most cases, there is not even a significant level of public awareness of the challenge. I’ll try to give an overview on some of these issues in the next section of this paper.

Ref. Item 2), it is important to see that conflict between ethical principles (an ethical dilemma) is the normal case and not a rare exception. For instance, the principle of loyalty to one’s employer can conflict with other principles such as honesty or even legal compliance. When is there a moral right or an obligation to "blow the whistle"? Codes cannot solve fundamental ethical dilemmas. The ACM code explicitly states that “any ethical principle may conflict with other ethical principles in specific situations” (ACM, 1992). In such situations it is necessary to have recourse to more fundamental ethical principles and, finally, to individual ethical judgment. This is why ethical codes should not be expected to reduce the burden of responsibility resting on the decision maker. On the contrary, ethical conduct means to fully accept the responsibility for one’s choices, and to make them on a high level of awareness and reflection.

Ref. Item 3) is of growing importance in a global society. The ICT sector as a driver of globalization contributes to removing geographical barriers between cultures and, in doing so, is faced with the fact that there are very different ideas of what is a "good" or "bad" use of ICT, e.g. concerning privacy issues, intellectual property rights or the freedom of information. Only an open discourse can create a common understanding of principles. For this reason, IFIP has never tried to define a "global standard" but only a generic framework for the codes of its member societies, recommending that they develop their codes within that framework: "In accordance with the diversity of histories, cultures, social and political backgrounds of IFIP member Societies, IFIP regards it as essential that, when wanted or needed, Codes of ethics or of conduct (or Guidelines) should always be developed and adopted within the member Societies themselves" (Berleur, 1995).

**Challenges for ICT Ethics**

ICT has been creating challenges for ethical reflection for several decades now. I shall list just a few of them here (without claiming to be exhaustive).

**Privacy Protection**
Database technology and various surveillance technologies have given rise to a broad discussion about the right to one’s own data. Privacy protection has now been included in the laws of most countries. The debate over basic issues, however, such as under what conditions sensitive data can be stored, processed and passed on to others and which data are considered sensitive could go on for a long time yet (EPIC & Privacy International, 2002). A new challenge for privacy protection is pervasive computing, which can be used for such purposes as highly efficient surveillance.

**Data Security**
When networks were connected to the Internet, the door was opened for outsiders to intrude into computer systems. Because there is always someone who has to try out every technical possibility, hacking, viruses and other forms of intrusion have become a daily appearance. One consequence of the trade-off between security and usability and because of the unmastered complexity of large software systems (especially operating systems), it will not be possible to have absolute security. No other issue in ICT ethics shows so clearly that the challenge is to find consensus about the borderline between "good" and "bad" in formerly undeveloped fields of action. When does fun turn into criminal abuse? Is hacking without the
intention to gain a material advantage destructive or useful for society? Should information about safety gaps in operating systems or the anatomy of computer viruses be published or not?

**Trust in Complex Systems**

Is it ethically defensible to put technical complexity in the world that is not masterable? Edsger W. Dijkstra emphasised in his teachings the supreme importance of controlling complexity: "...the teaching of programming comprises the teaching of facts...but the trouble is that these facts represent about 10 percent of what has to be taught; the remaining 90 percent is problem solving and how to avoid unmastered complexity" (Dijkstra, 1982, p.107). The new IFIP president Klaus Brunnstein stated at the 2002 World Computer Congress in Montreal: "Because the systems that we use are becoming more and more complex, the user is increasingly forced to trust them blindly in order to be able to use them efficiently" (Brunnstein, 2002).

**Online Communication**

Before e-mail became prevalent in large organizations no one could have predicted that the medium would require new “traffic regulations”, called Netiquette, and that it would emerge in a process of self-organization. In 1985 the Rand Corporation published a study that analysed what was different about the new medium e-mail, and laid the foundation for Netiquette (Shapiro & Anderson, 1985). The standard volume of "Ms. Manners" of the Internet, Virginia Shea, appeared in 1994 (Shea, 1994). Today Google finds more than 150,000 documents dealing with Netiquette.

**Freedom of speech**

The Internet reminds us that this basic freedom can come into conflict with other rights and rules, and that there are great national and cultural differences in how such conflicts should be solved. The basic issue is: Is it permissible to have, or perhaps should there be censorship for content that is disseminated on the Internet? If so, who would be legitimized to perform it, and on what basis? The Electronic Frontier Foundation opposes any form of Internet censorship with its "Blue Ribbon Campaign" (EFF, 2002).

**Intellectual Property**

The World Wide Web has simplified the use of text, images and sounds and thus made it questionable as to whether intellectual property rights can still be enforced. It is hard to distinguish pirated copies and plagiarism from legitimate uses of information. One reaction to this problem is a trend to stronger regulation, as can be seen in how the EU Directive 2001/29/EG of the European Parliament on "Harmonization of Certain Aspects of Intellectual Property Law..." is turning out. It is feared that regulation that is too strong will run contrary to the “primary interest of science, namely to let knowledge become public" (Kuhlen, 2001). Then the much ballyhooed contribution of the Internet to the free access to information and knowledge could become negative in the long run. The “innovation commons” referred to by Lawrence Lessig would be destroyed or severely hampered (Lessig, 2001). In the United States the1998 Digital Millennium Copyright Act (DMCA) has come up against serious criticism (Glanser, 2002, and Lane, 2002), as have its provisions for Digital Rights Management (DRM) (Boell Foundation, 2002).

**Sustainable Development**

"As many people in this world have a need to make up for past austerities, the demand for resources will continue to rise. Meeting this demand with renewable resources is our inescapable challenge...Strategies have to be developed which will make it possible to
maximize the value added while minimizing the amount of resources consumed, especially energy,” (Roos, 2002). The president of SATW is referring to two things in this statement:

- Firstly, the goal of sustainable development, which consists of meeting the needs of those presently living, but not at the expense of future generations.
- Secondly, a necessary prerequisite, in order to reach the first goal: improve the value added per unit of natural resources consumed.

This need has been discussed for some time now as dematerialization (von Weizsäcker, Lovins & Lovins, 1994). ICT can on the one hand make a decisive contribution towards dematerialization and thus to sustainable development, in that it creates optimization and substitution potentials. On the other hand, rebound effects will compensate for, or even overcompensate, any gains in efficiency, unless the framework conditions for business are rigorously reframed in the direction of a eco-social market economy. This can only succeed in a global perspective in the opinion of Franz-Josef Radermacher, which must primarily tackle social inequality (Radermacher, 2002). In addition to the rebound effects from ICT applications, one also has to admit that the material side of the immaterial is no longer negligible. ICT itself produces relevant material and energy flows, which accelerate the consumption of non-renewable resources and cause considerable disposal problems (BAN, 2002).

The issue of sustainability in the information society (Heiskanen et al., 2001) has also been dealt with by the Finnish Ministry of the Environment; likewise the "Digital Europe" project of the EU (Digital Europe, 2002), the GIANI working group of the German Informatics Society (GIANI, 2002) and the "Sustainable Information Technology" unit of Empa in Switzerland (Empa, 2002) deal with the topic. Ralph Isenmann has proposed an ethical framework for this field (Isenmann, 2001), which differs from the usual triple bottom line of sustainability, which has been criticized from a philosophical standpoint (Meyer-Abich, 2001).

From ICT Ethics to Information Ethics

This paper has concerned itself with ethics in the field of and Communication Technologies. However it is clear that the transition from issues of ethical use of ICT to a more general discussion of information ethics is a gradual one. Approaches to information ethics include the above mentioned topics, but offer a broader and better founded framework to deal with them. UNESCO works on information ethics, with the support of Nethics, an association located at the University of Constance (Nethics 2001, Kuhlen 2002). A more theoretical approach to information ethics has been developed by Luciano Floridi, University of Oxford (Floridi, 1998).

References


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A short version of the morandum "A Sustainable Information Society Doesn't Come About by Itself" can be downloaded in German and English from http://ais.gmd.de/~goehring/MemoNIG.pdf


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