Chapter 4
Ethical Issues of Emerging ICT Applications

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ABSTRACT

This paper concentrate on a proactive engagement with emerging information and communication technologies (ICTs) with the goal of an early identification of the ethical issues these technologies are likely to raise. After an overview of the emerging ICTs for the next future (leveraging the results of the EU funded project ETICA), the paper identify the possible ethical consequences. Then the emerging ICTs are evaluated from different perspectives for prioritizing technical and policy intervention on them. The question of governance is then addressed with a final collection of recommendations for policy makers, industry, researchers and civil society.

INTRODUCTION

Proactive engagement with emerging information and communication technologies (ICTs) should allow an early identification of the ethical issues these technologies are likely to raise. This, one could continue the argument, would allow avoiding some of these issues and ensure that the beneficial consequences of technology research and development will outweigh the problematic consequences. This idea is by no means new and

in some incarnation or other has influenced the way in which scientific and technological progress is planned and governed. Such proactive engagements with novel technologies tend to concentrate on technologies that are either perceived to be problematic from the outset or that have already caused significant ethical issues. It is much less common in areas that are less headline-grabbing, including the area of ICTs.

Due to the increasing influence that ICTs have on most areas of life in western industrialized nations, there is a growing awareness of the ethical relevance of these technologies. There are

numerous high-profile examples of issues, questions or controversies that are directly related to or caused by new ICTs or new areas of application. Noteworthy examples include privacy issues in social network sites, intellectual property questions arising from the activity of search engines or the extent to which states can and should use the capabilities of novel technologies to store and analyze data on citizens. In addition to these larger issues which have caused significant public debates, there are numerous more localized issues, which a look in any newspaper will reveal. ICTs play a role in traditional issues of an at least partly moral nature from fraud to murder. They furthermore cause novel issues, as for example with regards to privacy or intellectual property issues.

This recognition of the moral relevance of ICTs was the starting motivation of the ETICA project (GA230318). The acronym ETICA stands for "Ethical Issues of Emerging ICT Applications." The project lasted from April 2009 to May 2011 and included 12 partners from 7 European Member States. ETICA had four main aims which will structure the present discussion. It set out to:

1. Identify emerging ICTs.
2. Identify ethical issues likely to be raised by those ICTs.
3. Evaluate and rank these issues.
4. Provide recommendations on appropriate governance structures to address these.

Before these individual aspects are discussed in more detail, it is important to briefly explain the claims that the project can raise and their limitations. ETICA aimed to discuss future developments. The future is, however, fundamentally unknown and unknowable. However, human beings always explicitly or implicitly make assumptions about the future and base their decisions on these assumptions. In many cases these assumptions and beliefs turn out to be correct. A key issue here is that we can in many cases reasonably assume that the future will be similar to the present and the past.

We can extrapolate from the past to the future. At the same time one needs to understand that this approach only works to some degree. A key factor that influences the reliability of extrapolations to the future is the temporal horizon in which such extrapolations take place. To put it differently, we can reasonably expect that tomorrow is going to be similar to today. Such an expectation is more likely to be disappointed in a month, a year, ten years and it is very unlikely to hold 100 years or even 1000 years from now. The ETICA project therefore had to define the temporal horizon in which it wanted to explore ICTs. It settled on the medium term future which was defined as approximately 10 to 15 years from the time of investigation, i.e. the time from 2020 to 2025. This was justified by the traditional view of technology innovation and development life cycle which suggest that research takes about this time to mature and become socially and economically relevant.

A temporal horizon of 10 to 15 years certainly exceeds the horizon in which statements about the future can be made with high certainty. Any projections of predictions of the ETICA project therefore need to be understood in this way. The best way of reading the outcomes and findings of ETICA is thus to see it as a foresight project. This means that ETICA does not claim to be able to predict the future and know what will happen with regards to ICT. Instead it is best understood as a foresight project (Georghiou, Harper, Keenan, Miles, & Popper, 2008; Martin, 2010). Foresight research recognizes the limits of the possibility of predicting the future but find the value of exploring the future in visualizing possible alternative futures and using such understandings to make present decisions about appropriate ways of dealing with and influencing such technologies (Cuhls, 2003). These considerations can also guide the reading of the present chapter. The reader should not so much ask herself whether the following accounts are true but rather whether they are enlightening and help her to form an opinion that will allow for current action.

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