3. Electricity and Ethics

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Ethical issues as part of technological development

Technology-related ethical considerations quickly show how difficult it is to find concrete practical situations the ethicality of which one could reflect on. At the individual level one sometimes sees a contradiction here, depending on whether one considers the issue from a technological or medical viewpoint.

Veikko Porra (1991)[1] has assessed technological development in the light of history. According to him, we may notice that the negative technological effects like pollution of the environment, has made people suspicious of technological development. We also associate a lot of risks with technological progress. Economic factors play an important role in technological development as well. There is no return to the old, so we have to solve the problems by inventing more humane and accurate technology.

We can look at the ethicality of technology on many levels. On the global and national level for example, we consider how the disadvantages caused by technology are being reduced. On the company level, however, we might contemplate the ethical responsibilities of the companies. And finally, on the level of an individual engineer, we could ponder on how s/he applies the ethic principles in hís/her work. On this level we often have to think of how an employee must relate his or her ethic values to those of his/her employee. These values can sometimes contradict each other.

Ethical, technology-related presuppositions

Martti Lindqvist (1985)[2] has suggested the following to be the essential presuppositions for technology: to keep the ecological systems alive, to strive for ecological technical solutions, the need to ensure physical prerequisites for the survival of mankind, the need to avoid solutions that

threaten peace and safety, the aim of guarding human dignity and maintain the functionality of the society's systems. In addition to these, Lindqvist has suggested some 'optimal goals', that for instance promoting equality and justice. There are also rules concerning economical factors.

The data bank compiled by The Finnish Association of Graduate Engineers, TEK (2003)[3] also deals with the ethical questions of technology. The website comprises the association's rules of honor and the ethical rules of professionals within technology. These rules for ethics advise professionals to act responsibly, fairly, honestly, and in a courageous way. S/he should not harm nature. S/he should promote intercultural understanding and the realization of human dignity in a society. In addition, the rules deal with caring for oneself, protecting other people's privacy, property and copyrights, as well as some product related issues.

Other set of rules such as these can be found within technology. How are these various ethical issues carried out in the activities of the people within technology?


To discuss the ethics of technology is important not only from the viewpoint of environment but also because of people's mental and physical well-being.

Technology and environment

The first thing that comes to mind is the relationship between technology developers and nature. Examples in our history show how little consideration has been given to nature when developing technologies. However, environmental factors are more important today. For example, environmental effects are considered when new power plants and power lines are built. Different

kinds of environmental certificates have gained ground in the industry. Recycling has also seen various innovations.

No doubt we could pay more attention to environmental issues. In a global sense there is still a lot to do, even though much has already changed.In addition, new branches of technology have emerged, concentrating mainly on cutting the damage and taking care of the already existing problems. From this point of view, the ethical problems of technology today deviate from those at the time when technology was in its infancy. However, the fundamentals are the same.
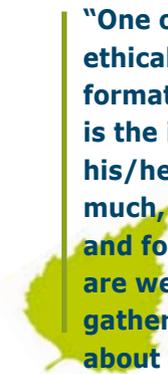
"One of the central ethical issues in information technology is the individual and his/her privacy. How much, in what ways and for what purposes are we allowed to gather information about a person?"

Information technology and ethicality

As I said before, the industry of information technology has its own ethical rules. Development in information technology is different from that in traditional technology and its ethical questions hence get new dimensions.

One special characteristic of technology and information technology is that progress is very fast. Progress being this fast, it is very hard to foresee what the real effects of this development are. No one will be able to predict the final effects. The Internet is a good example of this, as it must have been impossible to predict its huge progress. Consequently, if we want to change the way things are going we might have to do it afterwards, and this makes changes more difficult. Normally we have to at least partly adjust ourselves to the situation and the disadvantages brought on by the development.

One of the central ethical questions regarding technology is how to relate to people, their privacy, and the information gathered about them. Data protection legislation gives us a solid foundation, but there are still limitless opportunities to gather information on individuals and then benefit from it.

Technology and a human being

We already touched on the subject of technology-man relationship when talking about information technology. Development in other technical sectors is also in some ways related to the society's idea of man. The hectic world now values a person who acts almost like a robot and performs his or her tasks consciously. Of course we want people to be efficient, and the national economy to stay afloat, but it is equally important to remember the humanity in people. Actually, what we need today is creative and innovative people, something that robot-like people could never be.

This image of man as a robot-like performer has started to affect the image that the people in technology have of people in general. It is hard to keep up the idea of protecting the human worth, that Mr Lindqvist mentioned, if one's conception of man and his/her value has started to fade.

This phenomenon is most obvious in the attitude towards people when designing research. In some cases the human being is totally forgotten in the development process. The development process is built for some distant character, a performer. To take another example, it is also important to respect people's integrity and bodily privacy.

"The present well-being is mostly due to technology. For the welfare to last and prosper, it is worth emphasizing the importance of humanity as part of the technological development even more than before."

In situations when the technological research concerns people, we can exploit the same principles that are used in medicine when considering ethical issues.

The law about medical research (1999)[4] defines as medical research the kind of studies that have something to do with the integrity of man, and also the studies whose intention it is to get information about the reasons, symptoms, diagnostics, care or prevention of diseases or about diseases in general. It might be wise to apply the same principles in certain technological studies that deal with people.

Considering how stressed and weary many people are today, we should consider whether technological development should pay more attention to human factors. By now we already know how important it is to pay attention to environmental factors and to try to mend the mistakes. Environmental issues have certainly become a part of all development processes. The next step could be 'protecting the human being'. Today's well-being is mostly due to technology. Consequently, we should be grateful for technology. In spite of this, and for us to get to even higher levels and to a better mental state, it would be necessary to emphasize humanity as a part of technological development. At least we can try to open a discussion on ethicality issues. ■

References:

[1]*Porra, Veikko. 1991. Eettisyys ahtaalla tekniikan kehittämisessä. In book: Tiede ja etiikka. Eds. Löppönen, Mäkelä ja Paunio. Juva: WSOY:n graafiset laitokset. pp. 245-263.*

[2]*Lindqvist, Martti. 1985. Etiikan haasteet teknistyvässä maailmassa. In book: Teknistyvän maailman etiikka. Suomen teknillinen seura ja kirkon yhteiskunnallisen toiminnan keskus.*

[3]*Tekniikan akateemisten liitto. 2003. Tekniikan etiikan tietopankki (referred to 20.9.2007).*
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Interview
Ulla Vehmasaho / Professor Leena Korpinen, M.D., D.Tech.

Leena Korpinen says that although well-being in society is mainly a result of technology we should not get lulled by it

"Technological value discussion should center on the idea of maintaining humanity"

We all have an opinion about the potential power, or powerlessness, of technology. Discussion of ethics is thinking of the good and the bad and trying to find out who has the responsibility. The ethics of technology means that we aim at applying technology as well as possible. But why do we wonder if technology is going to overpower people?

Information technology is the most timely discussion topic. The development of IT is so fast that people find it hard to keep up with the bit stream. Consumers are interesting only from the viewpoint of achieving the best possible efficiency. Households are the endpoint of the spreading information technology. They are technological dumps. Can an individual do something to improve the daily life?

- Yes they can. We do not have to succumb to everything, says professor Leena Korpinen, doctor of medicine and technology.

Human considerations have always been there when the information technological devices and systems are designed. The above misconception dates from the times of IT euphoria; the times when anyone who could write code could also design the systems, says Korpinen who has thought about both usability and ethics of technology.

- Also, most of the systems and appliances work well. A few badly designed appliances also spoil the reputation of others. There is another easily corrected practical issue that has functioned as a drawback, i.e. instructions. They are often translated directly from one language to an-

other, without the writer knowing anything about how the device is used or without having any technical expertise.

Korpinen says the situation has improved but the designers should still know more about the user and the operating situations.

- To put it briefly, the person who will be using the appliance or software should be the starting point for the design. In addition, all kinds of people should be taken into consideration, including accessibility. And we must remember to pay attention to the principles of a general sense of justice.

The users must raise their voices

Korpinen throws the ball to the users as well.

- We can not leave all the responsibility to the designers. The users must raise their voice and not just succumb to everything. Not being able to use an appliance or a program does not mean the user is stupid, although this is the impression that is given, underlines Korpinen.

- The ethics of the IT professionals requires them to promote human worth in society. This includes humanity, but how many designers consider this the red thread in their work? And, how do designers in general see human values and the way they influence their work in practise? If it is not possible to picture it in your mind, isn't it impossible to break it?

Whose ethics?

Every job has its own ethical rules that affect the choices made. Korpinen has two kinds of ethics to follow, that of a doctor and that of a technical professional. In your daily life, do you often find yourself in a duel?

- Not really. Perhaps my educational background had more significance earlier, but now the reflection is more subconscious. My thinking is more comprehensive, I don't think just one viewpoint, says Korpinen.

The difference seems significant, however. A medical doctor's profession is a vocation and a sworn commitment to the job. Working in technology is something else.

- The research cultures of medical and technical sciences differ from each other. Every now and then there is a minor inner contradiction. This is reflected, for example, in the field research of my own technical branch,

electric engineering. In a measuring situation where there are people involved, the engineer is interested in the measurement device and the signal and not so much in how the person experiences the situation. Maybe it is true that in technical fields people are not sufficiently taught to look at things from a human point of view.

" The users should not give way to everything; they should raise their voices more often. If the consumer does not know how to use a device or a program, it does not mean she/he is dumb although this is what they want us to believe."

Related to protection of privacy and respect for humanity, Korpinen is also worried about the potential future vision where genetic engineering is used for testing the intelligence of employees or children, for example.

- In my opinion, the creativity and success of a person are not just dependent on the genes. Good genes are a good starting point for growth, but it also plays a great role how balanced a person becomes as an adult. If children were tested and valued according to their genes, it would create major problems to them when they grow up. They would not see their own value as a unique human being, but would mainly value themselves through their accomplishments. This leads to anxiety and, at worst, to self-destruction.

Women's wisdom before national policies

National strategies have gradually moved people from the outskirts to the centre of technological development. The visions of the industrial society in its infancy dealt mostly with machines; there was no room for people. The second phase concentrated on product innovations and even services. The fatherly attitude started to give way to a consumer's view. The third stage from the 21st century on focused on cultural innovations. The goal is to enrich people's daily life, instead of automation of services. The user's role must be emphasized to make this change.

Although the national strategies didn't start to focus on people before the 21st century the wisdom was there even before this, at least in the women. Maiju Gebhard (1896-1986), a pioneer in household work and

known as the inventor of the dish rack, concentrated on facilitating the work of the housewives. But in addition to developing machines, she also strived to change attitudes by pointing out the importance of humanity and priorities. Gebhard, like Korpinen now, emphasizes people's own responsibility. In her opinion appliances and machines alone do not facilitate our work. It is the people themselves and their ability to plan, think and perceive that matters.

Technology is always value-bound – the choice is yours

The base of the philosophy of technology is an immense labyrinth. Still, it is worth having the courage to jump in. In technology as well, ethics means all that we can do and all that we should do, the difference between good and evil, right and wrong. We all make decisions by making choices. Technology is always value-bound. Open, extensive, and healthy and critical discussion creates the foundation for the decisions.

- Our well-being is mostly due to technology, but there is no reason to get lulled by the thought. To guarantee well-being in the future, we should discuss our values from the point of view of maintaining human values, Korpinen points out.

Technology does not mean just machines, appliances and systems. Technology always involves people. Alone it is nothing as it gets its meaning through its relationship to people and culture. It is always linked with a time and a place. It is a question of understanding and interpreting concrete applications and their use. It is about how technical appliances affect people and their existence, how technology shows in our everyday life and how it changes our culture. ■

Technology is always value-bound,ethically correct or incorrect. By the choices we make, we decide which one it is.
Open discussion helps us see the different alternatives.