Beyond technology

Mankind as an end, or the end of mankind?

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Abstract: What we call a knowledge-based society is in reality a society based on intangible resources. Information is only valuable if it is structured in the form of knowledge that subsequently will impact society, when people decide to exercise their competences. Our society is dependent on all kinds of factors that determine our decisions and the efficiency of our actions. Passions and willpower are as much involved as knowledge itself. Creativity will become the critical resource restoring Man in a central position in society. Creativity cannot be mobilised by means of force. Therefore development is dependent on whether fundamental freedoms are respected. The digital revolution speeds up the evolution of the knowledge-based society. It may result in a form of development that might be aggressive to mankind and its environment. But it is also possible to promote a positive form of development, if we are able to show that the rules of the game have changed.

Key words: democracy, management, technological impact, society

WHAT IS IT WE ARE TALKING ABOUT?

When trying to build up this knowledge-based society, we have to ask ourselves what are we really talking about: what exactly is this new society that we associate with knowledge, information and communication, and even with intangible factors? The World Summit on the Information Society in Geneva has been labelled by governments as being on the “information society”. The reason for this is that political leaders are impressed with the power of information technologies and by the transformations that are induced into our economy and our daily lives. However, this technician inspired vision implies that information has acquired an extraordinary value. In fact information has always been important, especially when rare and hard to obtain. But today information is more and more abundant and accessible. Its value is dropping, and even turning into the negative when spam or useless e-mail copies are piling up in our mailboxes. Information of value is the kind of information that has been sorted, interpreted, combined with other information in order to become knowledge.

Because of our competences, we are able to let various selected informations interact with one another which grants information sense and value. To build up knowledge out of information we must already have an appropriate kernel of knowledge at our disposal and a scale of values to help us sort data fulfilling our aims. And then we also need the will to complete the necessary efforts for the task. Some writers claim that, thanks to digital technologies, the transmission of knowledge is performed at no cost, since we can instantly duplicate, free of charge, any piece of work and send as many copies as we want to the other end of the world. This might be true when just sending digital files, but it is not true for knowledge which only becomes real when it is endorsed by humans. Human effort is needed to read the digital files, to understand it, digest it, and eventually possess its contents by transforming it. All these steps require time and involve many intangible factors, from intellectual faculties to desires and intuitions which are part of one's own personal culture.

Knowledge will only impact society if it is used and processed. There is a world of difference between data acquisition and competence. The latter is a capability to put knowledge to work. Competence involves character, behaviour, mind patterns and a way of thinking. For example, a medical doctor may have very deep knowledge of a speciality. But, he may nevertheless be a very poor physician, incapable of effectively treating his patients, because he has no integral view on their condition and is only focussing on his own speciality. This narrow and Cartesian way of thinking separates problems from one another and may lead to wrong diagnosis and prescription, ordering special treatment, efficient for arthritis but with

dangerous side effects for the digestive system. To make things worse this medical doctor may have no social skills and will refuse to discuss the case with colleagues from other specialities, failing to gain necessary help. This professional will, more or less abruptly, produce a clever diagnosis triggering a psychosomatic reaction aggravating the whole situation.

Besides raw knowledge, real competence involves two extra elements: one intellectual and the other behavioural: a new way of thinking that is suited to deal with complexity, and a willingness to interact with others (Portnoff & Lamblin 2003).

Table 1. Three steps of accelerated mutations

	12th Century	18th & 19th Century	1950- today
Materials	Medieval revolution Iron	Industrial revolution Steel & concrete	Intelligence revolution Hyperchoice, nano- materials
Energy	Water-mills	Steam engines. Combustion motor	Harnessing energy
Life	Selection of plants and animals	Microbiology	Genetic engineering
Time	Hours (clock)	Seconds (chronometer)	Instant communication
Work organisation	Serfdom	Taylorism	Participatory and quality management
Nature of work	Repetitive and physical works	Repetitive and physical works	Creative and relational
Human status	Interchangeable labour	Interchangeable labour	Possessor of expertise
Society	Reproduction Society Slow changes except particular periods	Reproduction Society Slow changes except particular periods	Creation Society, constant changes
Arena of power	Land	Finance	Intangible: Mobilisation of talent, trust
Tools of power	Constraint	Constraint	Intangible : Conviction, emotion
Critical resource	Material resources	Material and financial resources, asymmetry of information	Intangible: shared information and power, creativity

NO SECURITY WITHOUT FREEDOM

The concept of “information society” puts too much stress on the information and computer side of it all. The real revolution is in the dramatic increase of available knowledge (Gaudin & Potnoff 1983; 1985). But it is rather unfair to talk about a knowledge-based society as if organisations till now have been based on ignorance! What is new? Traditional resources like raw materials or physical force are still important, but not critical any longer. Provided we can put human creativity to work, we will not suffer any shortage of natural resources or energy. If one of these happens to be missing, we shall have all the necessary knowledge to find a replacement. But we must take into account two new elements that might limit our efficiency. The first is that we have the power to destroy ourselves, if we lack wisdom and understanding. Our stocks of nuclear weapons are large enough to suppress every single form of life on earth. If we prefer a slower process of self-destruction, we must continue to seek short term financial profits, while neglecting the environment and international law.

We can also deny our citizens sources of information and expression, and prevent specialists from warning us of all the upcoming dangers. This happened in the former Soviet Union and the result of it was the Tchernobyl explosion. (Portnoff & Portnoff 1994; p. 38). This is still the case in today’s China and the result is the out-of-control outburst of SARS and AIDS (Portnoff 2003). Nowadays, the exercise of freedom in an environment that respects the law, is the major condition to guarantee security.

NOT MORE EFFICIENCY WITHOUT RESPECTING OTHERS

The second new element is that in a fast and permanently changing world, innovation is crucial. This implies that all the time we recreate the very conditions that allow us to live in a modified environment. That is why we have suggested to use the expression “Creation-based Society” (Gaudin & Portnoff 1983; 1985).

Creativity has become the critical resource and condition of our development. And this makes freedom of thought, freedom of communication and freedom of expression so vital since creativity vanishes when one tries to repress these. Creativity has always fed on interaction between different cultures, on tolerance and on individual and collective freedom.

Innovation is more and more the outcome of a networked kind of collaboration. The growing complexity of all the issues and the rising

number of competences that one has to put together in order to deal with these issues, obliges us to build collective forms of intelligence. This means that not one single person has all the necessary competences. Whether we are an individual team member, a corporation, a region or a country, in all cases we need to convince those who have complementary talents to join forces with us and collaborate. The goal is not so much to arithmetically sum up competences, but to build up synergy. The end result is a force that might be either far superior, or far inferior to the sum of individual resources that have been shared in the process, depending on the quality of the various interactions between players. Positive interactions are only possible between free and willing partners. It is possible to force other people to share with us their physical strength, but never their creative intelligence. The conditions to gain efficiency have switched from a logic of coercion to the logic of persuasion and seduction. We now have to convince others and win them into partnerships.

The efficiency of partnerships between corporations and of strong customer relationships has been demonstrated by the success of companies such as Wal-Mart and Dell. In his paper Mikko Ruohonen (Ruohonen 2004) shows the competitive advantage created by clustering two or more organisations with complementary competencies. Should this be extended to personal relationship? If everyone agrees that people are involved, the question is: which people? Should involvement be limited to high ranking executives, those “symbol manipulators” to quote Robert Reich, excluding all others and considering them as second-class material? We are convinced that the option of excluding the majority of staff does not provide the necessary reactivity in a fast moving environment and in front of a complex set of issues. We can no longer afford such a waste of intelligence and creativity, as we did when humans and machines were run by Taylorism.

The more hierarchical and divided an organisation, the less easy and fast communication and exchanges will be. This type of organisation will be the less innovative and reactive. We must never forget that the destruction of the space shuttle Challenger on January 28, 1986, was largely due to lack of respect in the hierarchy (Mayer 2003). The vice-presidents of the company who produced Challenger’s booster rockets, refused to listen to experts that kept opposing the launch. They were mere employees and in such a hierarchically structured company, one was not used to listen to lower ranking staff members. This kind of behaviour is still rather common today and is one of the main causes of malfunctions within corporations and administrations.

THE NEW POWER OF CITIZENS

Anyhow, the situation is that nowadays, in developed countries, people are no longer willing to be considered as cattle or robots. Surveys in 1981, 1990 and 1999 on values in European countries (European Values Study, EVS) (Arval & Futuribles 2002) have noticed a rise of individualism, a strong desire for self-expression and at the same time willingness to develop positive relationships with others. These trends are connected with strong ethical expectations. This is one of the reasons why no country in the world has ever reached the level of economical and technological development that we enjoy in the West, without undergoing democratic changes due to pressures from the masses. This has been the case in Taiwan and South Korea, following the footsteps of Japan. The digital network revolution amplifies this trend. The Internet acts as an accelerator in the process of spreading ideas, as an enabler in the search for information and in establishing collaborations. The cost and communication problems involved with activities, such as remote collaborative work and exchange of information, are dropping fast. Better informed citizens may exercise a choice, when confronted with commercial and political proposals. Whenever they are dissatisfied, they can express themselves over the Internet and set up efficient online consumer lobbies. We are witnessing the rise of a new power balancing traditional commercial, financial, ideological and political powers (Daloz & Portnoff 2001). Never in history have small corporations and small territories had so many possibilities to express and defend their own personalities, provided they agree to get involved in partnership networking. Many non-governmental organisations use the Internet in order to protect the environment, minority rights, and more generally human rights. Next to Amnesty International, many lesser known organisations are fighting, especially in Latin America, to promote integration of women, rehabilitation of sexually abused children, freedom of press and education, and anticorruption laws. In her project, Annie Corsini-Karagouni (Corsini 2004) gives a convincing example of e-solidarity against female genital mutilations in Kenya.

Today, authoritarian regimes are disturbed by the kind of testimonies carried over the Internet. Obviously these new media, which are at the disposal of the people, can be used by all sorts of powerful organisations, including fast growing crime related ones. Many are seeking the role of Big Brother by using modern capabilities to control our lives, spread false information or to try intoxicate us with their commercial, political or religious propaganda. But, for as long as the world has existed, every single new means of communication has been simultaneously used by both promoters of individual freedom and by its fiercest opponents. Fortunately,

since the printing machine was invented, every improvement in the speed of communication has resulted in promoting freedom, the last achievement being the fall of the Berlin Wall.

THE FUTURE IS WIDE OPEN

Instead of being frightened by the future because many dark scenarios are possible, we must be pro-active and work in favour of a humanist Renaissance scenario. This is certainly possible, if we really want it. First of all we must have the courage to say 'no'. There is no unavoidable fate, the future is not written anywhere and nothing binds us to accept that wrong political and economical forms of government may continue for the only reason that they have always been around.

For otherwise, this will surely lead us to economical, social, political and ecological major catastrophes as Amartya Sen (Sen 1999) did show and prove. We must try to input some form of intelligence into individual and collective egoisms and convince leaders of this reality: any organisation turns out to be economically more efficient, when respecting human aspirations and distributing responsibilities and power. This kind of organisation, whether it is a company or a country, will show a higher degree of creativity, will react faster to changes, and will know better how to handle the unexpected. Organisations that have retained Taylorism will be slowly outnumbered by those who set their money on networks and human beings. We must clearly show to those who would be tempted to use the power of the Internet to control us, sell us any kind of goods and offend our privacy, that there is a red line that should not be crossed or otherwise they will provoke violent reactions from consumers and citizens. These misbehaviours would ruin confidence in electronic commerce and customers would soon disconnect from the network. It is most important that all the players understand the new rules of the game: we are all interrelated and interdependent.

Because of this we need a global way of thinking that helps us to understand the complexity of the issues. This complexity-based thinking must be developed and trained starting at school and this requires a higher level of cooperation between teachers to converge the various teachings and topics.

We must support «positive» technological options: peer to peer exchanges against hierarchical organisations, shared standards (open source) against proprietary solutions (Windows)

Finally, we can make the best use of digital networks within organisations to demonstrate how counterproductive traditional partitioning

can be, isolating people and preventing them from seeking global efficiency. Water proof compartments do not always save ships, but they will surely sink us, if we do not remove them.

We must repeatedly demonstrate that in the long term sustainable development is the only solution for life. That freedom and democracy are necessary for creativity and safe technological progress. Knowledge without freedom is useless and dangerous: there is no example in the world of real technological and economical development at European level without education and democracy: Japan, South-Korea and Taiwan became democracies before reaching their present technological excellence. The two key words that both support human and economical development, and reduce the digital divide are “Human Rights”; two words, forgotten by Unesco in the WSIS draft final document. These include also Women’s Rights, as Amartya Sen explains; the right for girls to go to school and for women to work outside the home.

BIOGRAPHY

André-Yves Portnoff is doctor in metallurgic sciences and director of the “Observatoire de la Révolution de l’Intelligence at Futuribles International”. He is co-author of “La Révolution de l’Intelligence (1983-1985)”, the first report that introduced the concept of the intangible based society in France. Journalist and consultant on foresight, he currently collaborates with large businesses and with SMEs interested in integrating the consequences of human and technological evolution into their strategy and management. His publications include:

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