Momir ĐUROVIĆ
President, Montenegrin Academy of Sciences and Arts

CAN WE LIVE WITH TECHNOLOGY ADVANCE?

Your excellences ambassadors, your excellences ministers, very distinguished participants of the conference Technology + Society =? Future.

„Technology wants what life wants: Increasing efficiency; Increasing opportunity; Increasing emergence; Increasing complexity; Increasing diversity; Increasing specialization; Increasing-ubiquity; Increasing freedom; Increasing mutualism; Increasing beauty; Increasing sentience; Increasing structure; Increasing evolvability." (Kelly Kevin) Shaping the future in order to realize those goals that enable the establishment of a socially inclusive and environmentally healthy community is the fundamental challenge of human society.

Our own age is characterized by a deliberate fostering of technological change and by the growing social role of knowledge. The development and adoption of new technologies are changing individual and social values. There is only a „soft" determinism in the technology-society relationship, hence different societies can react differently to the same new possibilities. The rapid technological development of the past century — in biotechnology, information technology, nanotechnology and artificial intelligence — holds the promise to do the same for our current, post-industrial world. But what comes next, in a post-industrial world? Technology advances and growth may soon progress at a such fast rate, and perhaps a rate than is faster than our ability to deal with it.

Many stories, like one on communities the Oji-Cree, which were literally being killed by technological advances, offers an important massage to the human race. The problem with technological evolution is that it should be under our control but, unfortunately, we don't often make the best decisions. The most straightforward explanation for the lack of appreciation is that modern technologies are too complex to be understood by anyone but the experts.

Although the human have been accommodated to biological evolution, there is the principal difference between technological and biological evolution. Biological evolution is driven by survival of the fittest, and it favors organisms who are adapted to their environments. Technological evolution, for contrary, has a different motive force. It is self-evolution, and it is therefore driven by what we want, rather than

to what is adaptive. In a market economy, it is even more complex. If we're not careful, our technological evolution will take us toward not a singularity but a sofalarity. That's a future defined not by an evolution toward superintelligence but by the absence of discomforts.

The developments in digital technology have been truly dramatic and their implications far-reaching. Intelligent Machines add further concerns. Neuroscientists, psychologists and researchers in the field of artificial intelligence come up with the term cognitive technology to describe how electronic devices and other tools can assist and influence humans' mental activities that may have profound effects on how we live. Medicine, energy, computation, weaponry, and basic materials may soon include nano-components. Nanotechnology could even change what it means to be human. The BINC technologies are likely to lead to big changes in societies. This could be as drastic as the differences between the Stone Age and the Bronze Age, or from agricultural society to the scientific age of industry. Inevitably, such a shift leads to changes in economic and political systems, national sovereignty, balances of power, the environment, the human condition, even religion. We are witnessing that economic, cultural and technical cooperation among nations is growing, resulting in increasing interdependence while creating both opportunities and challenges for the private and public sectors. But, the outcome will depend on how things are distributed — everyone can enjoy a life of luxurious leisure, or most people can end up miserably poor. So far, the trend seems to be toward the second option, with technology driving ever-increasing inequality.

Such technology „mega-trends" will greatly impact the society, giving opportunities for improving individuals lives and facilitating democratization and transparency. In the same time, these technologies present concerns about individuals privacy, data security and necessary adjustments for individuals, organizations, governments and the society in general. Furthermore they will not happen overnight, but are well on their way to reality and most of us don't realize it. This time the changes will take within a generation or so. With the right political, legal and economic structures and institutions in place, those changes can promise meaningful work, leisure time, prosperity and freedom for all. While society as a whole is not really cognizant of or prepared for the shifts to come, apathy and avarice conversely could seen this transition bringing our world into a new dark age, a dystopia controlled by a tiny elite, At the same time Political Systems also appear to be relying heavily on using technology, changing the way the economy or even society work, before the law can catch up.

Among many Hawking has made, too, a point about how increasingly advanced technology could potentially harm humanity believing „the development of full artificial intelligence [AI] could spell the end of the human race." Ray Kurzweil does not see humans and machines coexisting, though; he believes they will merge. Looking as science fiction he claims: Humans will integrate more and more technological devices into their body, a process that has already begun. The interface between biological and artificial parts will be broadened to a point where human consciousness can be downloaded into a powerful computer that simulates all aspects of a brain. When this happens, computers will also become conscious. Ac-

cording to Moore's Law, computer evolution will happen by much greater rate than that of natural evolution, thus computers will become more powerful than humans. Toffler has demonstrated that knowledge and technology are the two powerful determinants in facilitating changes in society, and thus bring the society to an unprecedented process of transformations to a new type of order. One can go on citating many well known scientists who expressed similar concerns.

Serious efforts are to be devoted to anticipate the consequences of technological developments. Thus, there might be need that technologies must undergo through strict selection procedures to evaluate the purpose of their innovations and applications in the society. Certainly, the research in some areas such as bio, nano and many more technologies cannot be stopped and should definitely continue, but certainly in a more controlled environment. It should become obligation that their results on society and our entire planet should be studied in details before a decision to commercialize and release them is made.

The conference is devoted to many questions related to the interaction of emerging technologies and society. Certainly answer are not so simple, obviously because we have not been jet adopted to the age in which knowledge and technologies, regardless produced by human or machine, are our destiny.

Those were some of issues why I had suggested to ALEEA, EASA, WAAS, and GRT to run the conference which has shown to be of a great interest, and no event in which all who wanted were accepted to participate. No dough, knowing many of participants at the conference that a light will be shed to some of still not fully understand questions among which there are many more than mentioned in this address.

Last but not least let me express to all of you welcome to Montenegro and to Montenegrin academy of Sciences and Arts. We are small country but long lasting even celebrating these days 1000 year having state, and 10 years since its independence was reestablished. Montenegrin academy is small but keeps organizing conferences in which top world intellectuals and thinkers participate. We will try, again, the best so you return here on the similar occasions next time, as you have done this time.

Thank you for attention!