

KEYNOTE SPEAKER

THE NATION GOING 'E'

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Jaak Aaviksoo is a member of the Board of European Universities Association and the Mid Council of President of Estonia Research and Development Council of Estonia and many other important and outstanding organisations. He was Minister of Education from 1995 to 1996 and without any doubt Mr Aaviksoo has been one of the pathfinders in the development of the information society in Estonia. Therefore Mr Jaak Aaviksoo will give the keynote address – 'The Nation Going E'.

Thank you Mr Chairman.

I would like to start by thanking the organisers for inviting me and offering me the opportunity to address this audience but before doing so I will start by telling a little bit more about who I am and that may explain why I think and say what I am thinking and saying this morning.

1954 - it is before TV time not only in Soviet Occupied Estonia but also in a way all over the world. The transistor was less than six years old and it was as big as present day computers. My background is physics – I studied at Tartu University and did my PhD in 1981 and in the same year I had my hands on my first computer - it was a smuggled Mac which was carried in by six people separately from the US. This was not especially a crime but basically we were afraid that there were other organisations who were as interested as we were in this new technology and we are not very much willing to yield the processor and the keyboard to those authorities instead of academic research institutions. For five years, when the Perestroika, allowed, I spent time in several countries again doing research and physics then returned in the early '90s and decided to stay in Estonia. It was not an easy decision in a way because five years of research in cutting edge labs in the world has given me an impression where the science is done today. The concentration of research a decade ago was not as high as it is today but was still remarkable. I have decided to stay in this country because it was a very promising time ten years ago and I think these ten years has been a big enough reward for participating in the social, economical and technological change of this country.

As I said before somewhere in the middle of the '90s I had a chance to make my small contribution to the educational system of Estonia and one of my basic beliefs was that we have to use the opportunities offered by the new technologies in the educational system. I was much more enthusiastic in those days, not that long ago and it was a controversial period, we understood then and we understand today that computers are not the most important thing, that people are much more important. There was a lot of criticism on the national educational programme we called Tigerleaf that was basically meant to introduce this new technology into schools and I can still argue with many of my opponents that, despite the fact that we were not that much aware of what the end result would be of the educational goal that we were pursuing, what is the point you are going to offer but I was convinced that this was the right thing to do the very day I saw the first computers being taken to schools to 10 year olds who had never seen that device before. I saw their eyes shining and I understood that this was an important contribution to our school life even if it is not that didactical as it is supposed to

be by some of us. I know today that the balance is somewhere between these two extremes of technology changing the world and technology being just a means for achieving something.

Besides all these responsibilities I think I am a little bit a promoter of all societies and in a way the most important question I am asking myself is where is this right balance and what is the relationship between these two very different concepts of information society and knowledge society and I think in a way that the real progress our nations are going to make will crucially depend on our ability to understand the difference and to advance the development from information society to knowledge society and making the information knowledge.

The second question I was asking myself when offered this opportunity why should I accept this invitation. I don't feel myself very much as a Government official, I am not that big a believer of the technologies making the world a better place than it was maybe ten years ago but then going through the background of ICA the different efforts I came to the conclusion that we are brothers in faith because, as I said just a few minutes ago, this internal wish to overcome the limitedness of technology to serve the people is your role as well as it is mine. So let me try in the next half an hour to 45 minutes to reflect a little bit on what are the ideas I have developed for myself to relate myself and my efforts to this controversial technology, society, needs, wellbeing – because it is, I think, the most important question -that really makes sense in the long run.

Before moving to the global issue, maybe it is still worth saying a few words about Estonia. I think you have had a wonderful, wonderful report on Estonian progress in ICT, especially in public administration but not only in that. However, I think the recent history of this country, including the characteristics that were expressed by the Minister, when trying to express the relative success in building up the information society in Estonia is still useful. It is 1.4 million people somewhere far away. Every Estonian, I think, who has been outside of the borders of this country of over 45,000 square kilometres has experienced difficulties in explaining where Estonia is. "Oh, I know, it is Iceland" is one of the good answers. Another tries to put us as far away as New Zealand. And I think it is a fair estimate when we say that 1% of the local population has an idea as to where Estonia is. That is quite a big number, by the way. It is at least 60 million people. It is a little bit of a problem for us. It basically gives us – at least those of us who have been travelling around and have been forced to answer those questions that they want to know better. It is clearly a former Soviet Republic. Fifteen years ago, when flying together from Stockholm to Singapore with a very close neighbour, a Swede, he said "I have been flying over this country for several years and I never thought there was something else there as Soviet Union."

So, it has no direct connections to e-Government, or going-e, or the penetration rate of the Internet. There is something in it. We think Tallinn is a big city until we visit China and understand that it is a small village. We have become very, very rich. In 10 years the city of Tallinn, or at least this one hectare around this wonderful SAS Radisson Hotel, has clearly created an image of Estonia has become a very dynamic, economically successful country. It still has a long way to go. With US\$5,000 GDP per capita, the surprising fact is that we are willing to spend at least 3% of that national income on calling on mobile phones. If the Americans were doing the same, they would have talked 2 hours a day. And again, why does this happen? It is not only the need to communicate – there is more to it. Why has this spending on this new gadgetry so high a priority in this society? And then, what you can read in the reports, the Internet penetration rate, the mobile telephone penetration rate, the fact that you park your car in front of this hotel and pay by your mobile phone, or buy a bottle of beer and use the same device to settle your bill, has been some of the success story in a way. Small things, but they have drawn attention. They have been noticed here and there and I think we are happy about it. We are happy when we read in our newspapers that we still have more mobile phones than Latvia. I wish the Latvians had at least the same amount. In the long run, that is not that important. What is important is that with these new things you can

be more competitive while in other more traditional sectors you cannot be is, I think, one important factor in the success – or relative success, at least – in this country. Well, I think, that is a largely shared vision of Estonia becoming an e-Estonia. How large a share, I do not know, but I think it is a more broadly shared vision than maybe becoming a member of EU - at least when we decide by the mobile telephone penetration rate. Can this vision really contribute to national development in a much broader, deeper sense and in the long perspective? That is a question to which I do not have a good answer at the moment. I think it may contribute to the long-term national development - but not necessarily. It is definitely not sufficient and a lot of good care must be taken about the developments by all different stakeholders in society, including the governments with their programmes, initiatives and priorities because they have the responsibility of channelling these internal national desires in a way in the right direction. A wise leadership is a necessary prerequisite.

Let me next try to explain in a few words what I mean by 'growing e'. It all starts with a curve. Basically, what Growing E means is that you start somewhere here and you go up the curve and this growth is exponential. I think most of the countries have left the exponential growth rate as far as ICT is concerned, at least the countries represented here. A number of other countries are still in the exponential growth phase. What we always have to bear in mind, I think, is that any growth, especially exponential growth, cannot be extrapolated forever. So before we embark on the exponential growth rate, I think it is wise to know where you finish at the end of the day. You may not only grow E but you may go astray or you may go crazy, and sometimes when I sit down and think it over I think that we have gone crazy enough with these things. You always identify, I think, a starting point in this process. Although an exponential growth has no starting point but there is a kind of emotional - a symbolic - starting point and if we try to fix a starting point for growing E I think 1995 is a good number. This is the year of the growth in Internet connections, or at least Internet hosts grew fastest over the last decade. This E is not very successful because I did not use all the modern information technologies to produce it, preferring the old handwriting to give it a little bit more of the human touch. Less flashy, less technology.

Growing E means that one cares for this curve. One thinks it is important that we climb up further the curve - that we have more and more of different outputs for our technology. So growing E means that one cares for this curve or at least one is expected to care for that curve. I understand that all our governments expect us to care for that curve, and by 'us' I mean those responsible for implementing the government programmes in public administration as well as in education. There is an expectation they will use more and more Internet in teaching students in universities but I know that Internet is not teaching anybody and there is nothing more valuable than having five minutes, quarter of an hour or a full hour with your professor, face to face, this can never be replaced by any technology.

Nevertheless, I believe that the technology is important, and the very fact that in every meeting of this kind we try to deny the importance of technology in trying to reach to overcome the burden of technology. I think that we have to be balanced. What I am now going to show you or tell you now is very arbitrary, but I think it is not totally arbitrary when we relate printing and enlightenment. We may have a separate lecture in trying find out what was first: an egg or an hen, enlightenment or printing, or printing or enlightenment. Telephone, telegraph, railways, empires, a totally different culture from the time of enlightenment. Radio, jets, radar, TV, computers and Cold War. The computers were used and developed mainly to win the war, the Cold One I mean. But it ended in killing at least one of the empires and maybe one it will not be the last empire to be killed off as a result of these new technologies.

Now coming to Internet, and matching it with the word 'globalisation'. I believe that there is a very direct link between these two terms. The understanding that the world is finite was there for centuries, but the very fact that it is physically, emotionally, economically, and especially finite has come to our heads only with the use of Internet. I think, especially of

financial transactions, -the speed of financial transactions is the main factor that has changed. The world is growing and in the years to come, these transactions change the world, they bring about globalisation with all its good and bad sides so the people who fight against anti-globalisation, maybe they should direct their weapons against the Internet because they are closely inter-related. We usually can name a number of negative consequences for globalisation. We are not that good at naming the negative consequences of Internet, but I think we should, more than we do so far. It helps us to better understand the challenges that we face, either today or, if not today, then at least in the near future.

Now I would like to come closer to my topic, a synopsis of which you will find in your programme. I am trying to bring to you my ideas about the success and failure in growing E and what it depends on. I think the triangle, or rather, the ovals that I have drawn for you, are very important. They are the major players in every society - industry and technology; the governments or the public sectors; the consumers and citizens and diverse not for profit or non-governmental organisations; different stakeholders in progress at large and in this technological development in a more narrow sense. I think that everything related to the success, progress, failure, and pitfalls is related and directly dependent on the inter-relations between these three players.

There is, however, one over-arching component that is the big red oval that depicts cultural environment. Countries that have siestas are different from countries that have long and dark winters. It is not necessarily true that the dark winters help the information society to flourish. By the way, being in a World Bank organised meeting in Kuala Lumpur a few years ago, when talking about progress in Estonia, and they said "Oh!" when I said where Estonia lies, "Oh! you are near Finland. You have these long winter nights as well". That seems to be at least one of the myths of relative progress in information society. You simply don't have much to do and then you marry the computer and try to realise your secret and less secret desires in this electronic marriage. Yes, well, I am not that good in different cultural backgrounds but I think what I have seen is that a proper balance between the technology governments and consumers, their interests, their pushes and pulls, is a very crucial issue. No single stakeholder can succeed alone. And somehow, the more we think back to the technological progress we've had over the last centuries, I think for the first time we face a situation where the governments have taken an active role in pushing for the technology into their societies.

I will come back to that later, but at least I have been thinking why this has happened with the Internet, why it has not happened with TV or radio? Why is the information society something the governments are so concerned about, that they launch national programmes, they encourage the citizen to consume more of these new services, and so on and so forth? Why is that so important for the governments, and forget about industry and technology because there is a clear explanation and consumers and citizens: they see something they like and can understand their inclination to consume more and more?

So the question is why governments push for E. I asked that at my university once in an auditorium, offering everybody three votes and coming up with a number of reasons. One of them is a global technological competition, or our economies are in tough technological competition. The governments are concerned with the quality of life of the citizens, they want to offer us more and better services, faster, cheaper, and so on and so forth, and they think they can make us happy by doing so. There may be a willingness to advance democracy and other social values. There may be a belief, which I share, that these new technologies help us to offer more and better educational opportunities to make our younger generation more competitive in the future. There may be this international status thing, that they allow all these nice ranking lists, the Estonians are very happy there is something published they will definitely find out whether we are 6th or 26th. We follow the trend, even the French have it already, -I mean a national programme, for introducing computers to schools. It is clearly

part of the game because I think if your neighbours have been pushing for computers into schools there is a pressure on your government to do the same.

Economic competition – it is clearly a growing sector of the economy, and if we are successful in that sector, that's a chance. It is very hard to be competitive in these traditional economic sectors.

I am now going to organise a vote in this room that may have unexpected consequences but you all may reflect your souls, what are the real reasons why the governments push for growing E and why is that different from a decade or two, or even three decades ago, with other technological advances. Now the question, why are some countries succeeding? I said a few words already. I don't know to what extent that is all true, but what I believe is that we need balanced action among the three major stakeholders in our triangle in order to succeed. I think it is true for the time being and in the years to come that industry will have the lead, at least in the information and communications technologies. Whether it is good or bad is another question but it seems to be the economic logic of the modern global economy and it is very hard to change unless the global mentality concerning what happiness means is changing. So far, I think, that industry lead is the logic of that process. There clearly is a customer thrust but I think we should know more and take more seriously what the customers are really using the Internet for. Whether they are educational programmes, whether they are government news or other sites and information. And if we make a guess today then I have no reason to believe that the preferences of the customers are going to change much or fast. I even believe that there is an increasing pressure of removing different barriers to really free the exchange of information, images and so on and so forth. The technology leads and if technology leads there is no stop. As I have said before, I don't have a reason to believe that somebody else, some other stakeholder, would take the leadership over.

Part of the success in this country, and not only in this country, is that we start from a blank sheet. It was said by the Minister that the banking system in the western sense was almost non-existent in this country fifteen years ago. Ten years ago, we had forty banks and now the two bigger ones share 80-85% of the market. And I think with their use of modern technology we managed to bypass the stage of maintaining legacy systems. We had no need to switch over from used procedure of financial transactions to something different. That solved two problems at a time. One of them is that if you are used to something you are not that eager to change it and the other one is that you have always a security barrier: you don't trust a thing unless you are truly convinced that it offers at least the same level of security as the old more traditional method. It seems to be a psychological barrier in very many countries and I don't think that I have seen any sign of that mistrust towards the introduction of plastic money despite the fraud cases that have been taking place, but of course on a statistically negligible level.

There has been an ideological need to succeed. In the very beginning of my presentation today, I drew your attention to the fact that everybody, or almost everybody in Estonia wanted to be somebody, wanted to be modern, wanted to do new things. Everybody who had enough money in the early eighties and who saw our northern brothers, the Finns, coming over with their first mobile phones -six kilo each, wanted to have a similar thing because it was a status symbol. It is still a bit of a status thing in this country, and not only in this country, because in order to be on the scene it is better to have the latest Nokia model not the one from last year, that is good enough for a child.

And last, but not least, the triangle has to work in the same direction. Sometimes this is done in an organised way, sometimes you organise four different events where all these three partners come together in order to communicate and push in the same directions but sometimes it acts or happens almost spontaneously. I think largely it has been the case in this country. In addition to that, of course, there has been this moving away from the centralised government because we are true believers that everything that is different from a Soviet past

is good for us. It takes some time to learn that all that's not that true, but so far we have even benefited from that approach. It will stop when the government will be reduced to the size that it can keep the schools and hospitals going but this takes a little bit of time.

This was not too serious. I basically think it is okay. We started from 95% of the public sector in the Soviet years and we are down to 35% which is considerably less than European average, which is somewhere around the OECD or the global average, and this reduction of the public sector, despite the changes in the government, would have had over the last fifteen years and there have been, I think, six or seven governments altogether. This has been at least one of the major political guidelines to reduce the public sector to streamline the public sector -less state is better than more state. But as I said, with the exponential growth, even with this linear reduction there is somewhere a full stop at least, and we are approaching that point, I think.

Why some fail? There is no need, and I think more and more that the countries who have not shown fast progress over the last ten years might not have failed but rather have taken another course. Maybe they are catching up one or two years later, and does that really make a difference? There is no money. When I said before that Estonians are spending almost 3% of their GDP on mobile communications we might well ask whether that makes sense at all. I do not want to criticise people because this is usually a free decision of the people themselves but at least, I think, it is fair to say that the countries and people who decide in a different way - their decision has to be respected and there is no need to hurry. Two years later, three years later. I was told a wonderful lesson some fifteen years ago in a company of physicists from different countries sitting in a nice bierkeller in Germany and discussing the development of civilisations in the world -the rise in the East and the progress in the West and the decline of the western civilisations and so on and so forth. There was a Chinaman who sat silent for the whole night. It was at the very end when he said, "Yes, I think you are right. The last three thousand years haven't been that successful for China". Sometimes, time has to be understood in the proper perspective and then when we meet again in twenty years in the year 2023 is it really a big thing that Estonians have two times more mobile phones per capita than the Lithuanians? This is something we should think about. There is no need to hurry. It makes more sense to think it over and then decide. I am not suggesting that there will be an apocalyptical end to our efforts going E, that is not the message I am trying to convey. But I am telling you that the sun going down means that, after working hard the whole day, we have to relax and take a sleep and start a new day, with new technologies, new visions, new ideas and if we have wasted all our money and all our strengths on this round of economic and social development maybe we will not be that fit and competitive when the next round comes.

Who benefits? The governments are pushing for you: we are trying to perform better and better all the time, but who is the one who reaps the benefits at the end of the day? Can we really be sure that the benefactors are in this room? The industry clearly makes some money out of it and when I was asked a few days ago on this national informatics counsel meeting what do I think is the most serious problem in Estonia growing E, I said this is one of the biggest contributors to our negative trade balance in this country. I have not done much research into this matter but I believe an increasing number of countries are not improving their trade balance by pushing for more E in their countries. The customer - when they say in a joking manner that there is less time for other nonsenses, you may spend your time in different ways, you may call your friends, you may explore the Internet, you may use all these new modern gadgetries but of course there are a number of other things to do then maybe this is what really makes us happy. The governments -: they are on the ranking lists; they are more competitive if they are. I think it would be a good idea for some of the international organisations to really try to find out whether this competitiveness has really increased in those countries that have been more successful in introducing the technologies into their societies compared to those who have been more modest in that sense. I have not come across such a study but I would be happy to do so.

I would like to say a few words about the threats. One of them, as I said, is the trade balance. The other is what I think is more than a matter of fact but it is rather a fundamental consequence. The E gap which is built up on different lower level gaps, either skills gaps or economic social gaps – this is increasing, at least, globally, despite the efforts to reverse this process. With a few exceptions, and these exceptions are clearly in the countries who have managed to build a solid socially more balanced society, long before modern types of the last decade. I have been asking a question whether there is at least one example where this fast technological development globalization Internet, ICT and other technologies, have really brought to more balanced social structures, they have not had, so far least, a positive answer. Is it fundamental, or is it just occasional? I don't know. But I think it is worth thinking about. It is very easy to put the blame on technology. It is much more complicated clearly, and I am not saying that we should stop using the technology but as pleasing as this technology works in the societies and in the world, there is a question to be answered, because the efforts are there. Most of the governments, especially European governments, but other governments as well, are clearly aware of that gap but it is increasingly harder, as far as I can see to overcome that gap so whether there is a solution, a good solution, is still not clear.

Social problems - consumerism is clearly increasing by the use of this new technology because it has a wonderful ability to bring otherwise inaccessible services to everybody everywhere, and human beings – a long time ago when they were driven out the Garden of Eden – they are weak individuals, not very strong to resist all these challenges. It has not increased as far as different studies have shown, the interest of people of more highly valuable services. Very much in a way that TV made the first step. Usually you don't have too many books in a poor African community but if there is TV broadcasting you will have the antennas on their huts, and whenever they have enough money to install computers with Internet connection, they do so. We are not prepared, and maybe it is impossible to be fully prepared, for more advanced uses of this technology. Real communication may have happened without these new technologies but it is very hard to make clear that relations between young people, they have become more superficial; in a way more aggressive, and this is in clear correlation with overall culture of e-mail and SMS communication. The vocabulary that is used is compressed and together with the vocabulary, the depth of relations is reduced. Whether it is the limitness of this technology, and it may be overcome by more advanced technology including communication technologies is another question, but this seems to be one of the results.

The examples of e-banking and e-post office. Especially elderly people. Communication being made easier but indirectly has taken away the possibility for occasional necessary communication. The number of people you know well enough so you can address them, you can talk to them, is not very big. Going to a bank or to a government office, or local government office, to arrange your benefits, to buy something, to pay a bill, is not only a technical act. It is also a communication act, and this falls away. It is more efficient, it is faster, and it is cheaper, if we take it technically. We may regard this as only an instrumental relation, but it's always more than that. I would even say that it would reduce all the communication of an individual to the government: local, national, regional government. It's not only a technical thing. It is changing the relationship of the citizens to its state. What that means is another question. How that influences the social structure, or the political framework, there is so far very little study. But I am clear that it will be different. It will have an impact on how we think, on how we feel about our government and about our society. The communication is different. The communicating partner disappears, is virtualised. We start to construct our partners in a totally different way. This solitude is a term I think is worth writing down and thinking over. I don't mean only colleagues, who sit side by side, or face each other over the desks communicating via e-mail but I mean in a much broader sense. The technology you use, the means it offers, and your imagination is creating an artificial world around you. I don't think we have to fight it but I think we have to be aware of that.

Why then, we push for E? Why do we fly all over the world to Tallinn, to discuss how our governments and how our agencies can better promote the idea of using information and communication technologies in public service in order to better serve our citizens? It is based on the belief that we really can serve them better. There is a slight chance that by doing so we have an opportunity to advance our basic values. Be it democracy, compassion to your fellow citizen. I think a really important thing is that if we use all our strength to advance education we might have a better chance to avoid the negative consequences and to enhance the positive ones. As far as I can see, the progress made so far is not too encouraging. Language, training – very good results. Some overall access to educational materials, yes. But real education, real lessons, at least most of them, as far as I can see myself and as far as my students have told me, is still very much dependent on real human conduct. I am optimistic, but not too optimistic. The progress is fast but when we really are so far better we can learn a real lesson is still on the horizon. If we manage to enhance our values, and develop our values, if we manage to make the educational systems better, there is a possibility that we can turn the information society into knowledge society, and that really makes sense, as I was trying to explain in the very beginning.

I am trying to conclude. It is all about the quality of life, and all about what is good and bad and these questions do not have answers. I don't have an answer either. I have not speaking to you this morning in order to discourage you, or discourage myself, but to promote information and knowledge societies. I believe that by doing so, we still can serve our people, our countries; it is not an easy task. To be more successful, we need to share our experiences, both bad and good ones, and I hope you manage to do so during these three days in Tallinn. I wish everybody to take back home at least one good idea and one warning that one should avoid when pushing hard for growing E in your respective countries.

Thank you for your attention.