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**SECOND INTERNATIONAL FORUM ON
CREATIVITY AND INVENTION – A BETTER FUTURE FOR
HUMANITY IN THE 21ST CENTURY**

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**INVENTORS, INNOVATORS AND CREATORS - THE INTELLECTUAL
CAPITAL OF NATIONS**

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I. INTRODUCTION

1. I should like to begin by expressing my gratitude to the World Intellectual Property Organization for the invitation to this international forum “Creativity and Invention – A Better Future for Humanity in the 21st Century.” As a sincere thank you also to the hosts.

2. Although the world seems to have become smaller owing to modern means of communication and transport, it is not very often that one has the opportunity of travelling to China – a country with long history and ancient culture. Before I speak about creativity and inventing, I should like to take this opportunity to give you a short introduction to the country that I come from in order to make it easier for you to understand me. As others have already said, all places on our Mother Earth seem easily accessible, but the modern world does nevertheless consist of a great variety of languages, cultures, traditions, ways of thinking and many other characteristics.

3. I am from Estonia, a small country by the Baltic Sea. If you look at the map of Scandinavia, it is easy to find Estonia. I could not call my country a large one even if I wished to; the same applies to its population, which is about 1.3 million. But the geographical position of Estonia has for centuries tempted conquerors from a number of countries, no matter what the official pretext for conquest might have been. We have lived under the rule of Germans, Danes, Swedes, Poles and Russians. Estonia lies on the crossroads of trade routes between East and West to which all conquerors have dreamed of controlling. Foreign rulers have Christianized us, and now the majority of Estonians are Lutherans. The numerous conquests have doubtless brought European culture and Protestant conceptions to Estonia. The country attaches great value to hard work, which has combined with natural conditions to develop Estonians into hard-working people. Sometimes too hard-working.

4. After the Great Northern War Estonia became part of the Russian Empire and remained so for quite a long time. Our country continued to be subordinated to the Baltic special regime, however, which considerably hindered Russification. Another obstacle to this process was definitely the serfdom that prevailed in Russia. On the territory inhabited by Estonians serfdom was abolished between 1816 and 1819, which was about 45 years earlier than in Russia. This created a basis for the development of education, which in about 80 years, by the end of the 19th century, resulted in the rate of literacy among Estonians exceeding 95 percent. The development of industry was fast, but agriculture faced more problems on account of the great landowners, and many people in the country did not own any land. Regardless of its industrial development Estonia was still mostly an agricultural state.

5. The First World War triggered the collapse of the Russian Empire. Out of its ruins arose the independent Republic of Estonia, which was proclaimed on February 24, 1918. Immediately after that the German occupation began, which was itself followed by an attack from Soviet Russia. Our country, which had only just started its independent development, its population tired of the First World War, was again facing hostilities. You can imagine how difficult it was to think about creativity and inventing in such circumstances. The Estonian Government did however try to concern itself also with that area, and established the Estonian Patent Office on May 23, 1919, while the war against Soviet Russia was still going on. At that time Estonia lacked a network of research institutions; there were no design engineering bureaux, and major factories were either not working or had been damaged during the war. Over 70 percent of the population were involved in agriculture, not necessarily with the aim

of producing for the market but to survive. Long -lasting war have brought people no direct benefit that we know of.

6. Controversial though it might seem, difficult times do however still promote creativity. People have to survive in a situation where they lack practically everything. This engenders creativity in people who in normal conditions have no such inclination. Whether we can speak about nonconformism in this connection is another question. People find ingenious solutions to everyday problems. Undoubtedly this may mark the onset of years of creative thinking and creative attitudes to any problems, which may lead to total nonconformism and non-acceptance of what exists, no matter how suitable it might be. The principle in this case is that what exists belongs to yesterday; one must continuously create something new in the hope that it will also be better. Novelty is not proof of improvement, however, at least not always. It is not enough to satisfy the novelty requirement: the improvement requirement must also be satisfied.

7. When life settles down, a lot of people lose interest in creativity. That is natural and inevitable; I am sure that you all know what miracles mental pressure can produce, for example during school examinations. With only very moderate mental pressure, or none at all, a lot of people do not bother to stretch their minds.

8. What can we say about creativity during the establishment of the Estonian Patent Office? It is not easy to tell after so many years. First of all we have to remember that it was wartime; trading continued in spite of the changed circumstances, and so more attention was focused on trademarks. I assume that quite a number of ingenious inventions were made during this period, but there was no time or initiative to patent them; I wonder even how much people knew about patenting at all. The idea of patenting, as we all know, is the obtaining of exclusive rights with the aim of using them, but how can exclusive rights be exercised when industry has nearly ceased to function?

9. The coming of peace brought changes, but the necessity of novel and better solutions remained. Now it was no longer a question of surviving but of developing towards a better future. In the 1920s and 1930s Estonia remained an agricultural country, but its industry underwent significant development. The growing necessity for technical education culminated in the establishment of the Technical University. Scientific research dealt with oil shale chemistry, as Estonia is rich in the natural resource; the issues of agriculture, forestry and the timber industry were also topical; there were certain problems in food industry and the processing of metals; Estonia built engines and ships. We do not know exactly how much these developments actually brought about new solutions, how many local inventions were patented or how many foreign solutions were used.

10. I should like to pay special attention to the best known invention created in Estonia – the Minox mini -camera. The inventor was Walter Zapp, who now lives in Switzerland. This invention, which is still being used, has a complex history. Walter Zapp made the Minox camera in the 1930s while living in Tallinn, Estonia's capital. His idea and dream was to create a camera that was as small and as easy to operate as possible. Who knows where his inspiration came from? He was clearly a nonconformist who followed his principles, not paying attention to the large amount of different cameras already on the market.

11. At the time Estonia could not provide the necessary technical conditions for production of the Minox. This work was undertaken by a large Latvian electrotechnical factory, VEF, which produced a certain number of the cameras; the production process then continued in

Germany, best placed to provide the necessary conditions at that time. Step by step, the Minox camera became famous; it was especially suitable for intelligence agents. The inventor's original ideas were developed further, and as far as I know these cameras are still in production. As the development of the camera involved Estonia, Latvia and Germany, all three claim to be the country of origin.

12. What comments can be made on this dilemma? Walter Zapp invented, or as we said "made" the Minox camera in Estonia, but its production began in Latvia and the camera became famous in Germany. Which could be considered the country of origin? It could be that Germany does not know where the camera was actually invented, or that very few people are aware of it. In any case this achievement of the 1930s was so outstanding in photography that it has remained competitive until today without major changes. Using this example, what could be the answer to the question whether an inventor could become a millionaire? Did the maker of an invention as successful as the Minox camera become a millionaire, or did he at least come close to that status?

13. The first question that arises is the following: is it necessary to be a millionaire at all? What does it mean to be a millionaire – does it mean just great wealth, or is it also a certain honorary title? It is possible to live a good life with considerably smaller resources, and a large property requires a lot of care. Concern for one's property could easily suppress creativity; this topic raises a lot of questions. Walter Zapp definitely met the conditions for at least increasing his property, if not becoming a millionaire. As Estonia lacked the necessary conditions for producing the Minox, there was no hope of a larger income even though the camera was patented. It is generally very difficult to become rich outside business and in small markets. That does not mean that it is impossible to move from smaller markets to larger ones, but such transfers do require a lot of money, and a lot of work and experience, no matter how successful the invention may be. We know nothing about the economic success of the Minox in Latvia, although it was produced there. The camera did not bring greater economic success in Germany, but owing to the approaching war the world was facing difficult times in which the development and marketing of new products was subordinated to the laws of wartime. This also applied to the transfer of financial resources. The Minox achieved widespread appreciation and use, although not for making family photos; even so, to our knowledge, it did not make its creator a rich man. We all know how reluctant people are to appreciate great minds.

14. The above does not mean that inventing very seldom brings wealth; it would not be difficult to name some examples of the opposite. Nevertheless, a clever invention alone is not enough, although the author may have worked on it for years. It is difficult to expect somebody involved in finding a solution to a certain problem to pay attention to economic issues – that is, to the production and development that will make the invention usable in a wider sense, including marketing, advertising and other related activities. These developments must involve other specialists, who know the current situation in their field of expertise. Smooth cooperation usually produces successful results. Whether the success is enough to make millionaires of all those involved is another question. The final result also depends on whether all those involved in the development of the invention agree to award more recognition to the inventor or inventors, thereby bringing him or them significant advantages.

15. Many inventions are the result of contractual relations; here the problems are regulated with agreements. It also seems that the age of the independent inventor is past. In our complex world it seems improbable that revolutionary inventions will now be made in a

person's workshop at home. Even if the process begins like that, the invention has to be brought to market, and that brings along all the problems we have mentioned.

16. With regard to inventions and related issues in Estonia during the long years of Soviet occupation - the need to develop further, among other things by inventing, was present also during that period. A lot of research institutes and design engineering bureaux were established, and gradually the State began to feel the necessity and interest in industrial property protection. Inventing was quite an active pursuit, and there were even plans that stipulated the number of inventions and their subject matter. I am talking about the centrally planned economy, which at times could become quite economical. With care and meticulous observance of the provisions of the Patent Act, it is not so difficult to accomplish something that meets the conditions of patentability. During the times of the centrally planned economy the requirements for an invention to be considered, such as were exactly the same as in any other patent law, past or present. That made it possible to fulfil the inventing plans. Whether or not the resulting inventions were always useful is another matter. It was extremely awkward to develop the invention into a usable product, as the quantity-oriented economy did not focus on quality, and so was not interested in new objects and the problems connected with their application. That was the in-country attitude, and one should not forget how large the domestic market of the Soviet Union was. At the international level, however, the Soviet Union wished to be treated as an equal partner. That caused considerable controversy between the domestic and international procedures relating to inventions. Inventors suffered most, as they received only very modest economic remuneration from the State for their contribution; it was impossible for an inventor to become a millionaire in those days: he was lucky even to be able to buy a car. It was extremely difficult to receive royalties, even if the invention was a success. The invention was seldom made by one person: more often it was the work of a small group, and there were always more who had an economic interest in the invention. Inventing continued, however, even in such peculiar circumstances. This is supported by the extensive literature that the Estonian Patent Office uses in the examination of patent applications.

17. As for a better future for humanity in the 21st century, the main problem lies in the need to improve the quality of life in developing countries, and countries similar to them, and also to maintain the present living standard in developed countries. I speak of maintaining the living standard because, considering the resources available to mankind, it is impossible to improve the quality of life in developing countries and at the same time raise the already high standard of living in developed countries. It is of the utmost importance to narrow the gap now existing between countries so as to avoid serious socio-political problems in the near future; it would be more difficult to solve them than to improve the standard of living in developing countries. The process absolutely has to involve inventions, as it has in previous times. Look around you! Who knows how many inventions we use in our everyday life? Who knows how many inventions have helped people solve major or minor problems throughout history? Let us consider inventions that have been made in the 20th century but for some reason are still not used; I am convinced that such inventions could be found in great numbers in the patent documentation of countries that for decades have followed the principles of the centrally planned economy. As already mentioned, inventions were made according to plans, but only a fraction of them were put into use. And on the subject of documented but unused inventions, you might be interested to know that a large number have been made in conditions of limited or very limited resources, and precisely because of those circumstances have often been extremely ingenious. I imagine that there should be a vast range of uses for such inventions in developing countries.

18. In the late summer of 1991 Estonia recovered its independence. This was a time of great change, which is usual at turning points in history. Centrally -planned economies as practised in the Soviet Union had exhausted themselves and ceased to exist. That brought about the disintegration of the economic structure that had been built up for the needs of a large unitary State. A lot of research institutes were closed, as they were no longer needed and it was impossible to finance them to the previous levels. Design engineering bureaux finished their work and inventive activities which had annually produced 250 to 300 inventions slowed down. No more plans were drawn up for inventing. Like many other countries, Estonia had moved into the transition stage between centrally -planned and market economy. This situation is also peculiar because many transition countries cannot be considered either developing or developed, although they do tend to belong to the latter group.

19. It is clear that inventions are essential to economic restructuring. In order to ensure a continuous flow of inventions and to provide inventors with a reliable environment, it was necessary to establish a system of legal protection for industrial property. In Estonia it was created in a void, in the knowledge that we had little time - we could not develop the system in decades as many other countries had. The Estonian Patent Office accomplished this aim in ten years, and the first law on industrial property protection - the Trademarks Act - entered into force seven months after the Patent Office started its work. Our present situation could be characterized by the fact that on July 1, 2002 we shall be acceding to the European Patent Convention. What do those ten years tell us? The work in the field of trademarks, as we had assumed, began to produce results fairly quickly. The economy, which had paid little attention to trademarks, very soon understood their significance. The scale of our work in the field of trademarks more or less corresponds to the capacity of the economy and its structure. Estonian trademarks represent 25 to 26 percent of the total number of registered trademarks.

20. The situation is different in the case of inventions filed for patenting. The number of patent applications is not that small, but contains surprisingly few applications for legal protection from Estonian authors. This seems to be a common problem for countries in transition economy: as already mentioned, Estonian inventors once produced 250 to 300 inventions annually, while the corresponding figure today is 12 to 14. This applies to patent applications. The situation is somewhat better in the field of utility models: we generally receive 40 to 45 registration applications a year. The potential is of course higher. Given the number of designers in Estonia, the number of industrial design registration applications could be larger. The number of geographical indications is rather modest, but that is not particularly relevant if one considers our geographical location.

21. Do inventors rock the boat of convenience and traditions? To some extent, certainly; but all this is an integral part of technology and so inevitable. We have to consider the growing population of the world; people need food and clothes, washing powder, houses to live in and numerous other commodities. In some parts of the world the population growth places enormous pressure on the environment. We need new technological solutions and equipment in order to keep the living environment habitable, and less the influence of exhaust emissions on the weather. We need inventions for more effective use of natural resources, to ensure that fields retain their productivity without overfertilization, to fight disease, to increase the security of nuclear power stations and for processing nuclear waste. If we were to name all areas needing the intellect and good ideas of inventors, we would end up with a very long list. This is bound to interfere with the comforts and traditional mindset of many people; but it has always been thus.

22. We all use and benefit from inventions; some of us more, some less. Some authors apply for patent protection for their inventions, some do not consider it necessary or even fail to think about it. Scientists involved in fundamental scientific research are a particular phenomenon in the onward march of progress. Their writings often reveal research results that constitute patentable inventions, and indeed oftentimes before patent protection has been applied for. This means that the most important characteristic feature of a patentable invention – its novelty, is lost and patent protection is no longer possible. This happens everywhere, whatever the State and its social regime. A scientific paper is the symbol of scientific work; its publication results in widespread use of the invention, leaving the author without any remuneration. Another outcome can be that the invention, no matter how good, is never used; putting an invention to use involves expense which can be considerable, and authors will not risk their money if they cannot be compensated by virtue of exclusive rights. The logical conclusion is that patent protection is necessary, and it is always practical for society to compensate the inventor for the expenses connected with his invention; that would allow the invention to be used for the benefit of all or many of us.

CONCLUSION

23. Mankind needs inventions, and needs to keep inventing; it is an endless cycle. We hope, one day, once again to admire brilliant inventions which could be compared with the compass, paper and gunpowder, all of which were invented in China and have had an enormous impact on the history of mankind.

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