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SYSTRAN'S CONTRIBUTION TO MANKIND

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In our nuclear age, we hear more and more how peace is important and that mankind must be saved. A better understanding certainly contributes to peace and the overcoming of language barriers helps to achieve understanding.

I witnessed during the second world war how language barriers inhibited the quest for peace. At the end of the war it was obvious that we had entered an era dominated by sophisticated weaponry capable of mass destruction and I felt even more deeply that I had to devote my energy to the elimination of conflict causing factors. As a first step to overcome the language problem, I felt that I should know as many languages as possible. I was particularly anxious to master Russian since tension was developing between East and West, creating a new major area of conflict.

The war displaced many families. With my knowledge of English, German and Hungarian at that time I was able to help many Hungarians acting as a kind of 'liason officer' (without being in the military) between third U.S. Army on the one hand, and the Hungarian Red Cross and newly established Hungarian Welfare Committee (Hungarian Caritas) on the other. During the week I stayed in Munich while at the weekend I was anxious to see my mother and grandmother who had very simple accommodation as refugees in the upper Bavarian mountains.

Events, like fate, helped me to acquire a good knowledge of Russian which later helped me to launch Systran, and without such events we would probably not be here today: in Munich I met a Russian refugee, Professor Wilpert (his ancestors went to Russia under Catherine the Great). He had a record player and a set of Russian linguaphone records. I borrowed the record player for many consecutive weekends, took it to the mountains and learnt Russian all day long Saturday and Sunday. Since the record player had be wound by hand, I was able to take it to one of my favorite places near a peaceful brook, and, in the quietness of the forest, I learned Russian. I played those records so often that they became unusable and Professor Wilpert could not use them to teach Russian. Our friendship was damaged and there was no more contact between us until 1956 when I met Prof. Wilpert quite coincidentally on a street in Los Angeles. During 1961/63 Prof. Wilpert worked for me when I prepared the Autotran and Technotran systems. These systems were forerunners of Systran.

After terminating my work for Hungarian refugees in Munich, I was very anxious to continue my studies which, of course, were interrupted when my native country Hungary was taken by the Russians in 1945.

I wanted to know more about international relations, the role of historical, economical and social factors and particularly I wanted to find out how and why intelligent human beings are capable of killing each other and how our civilization could allow the development and implementation of more and more powerful weapons whose only purpose was destruction.

During my studies I became interested in the importance of economic factors in international relations thus I started working as an economist. However after a few years I realized that I couldn't make enough of a contribution towards my highest goals: to prevent conflicts, to avoid conflagration and particularly to avoid a major war, so I left this work and put myself in an environment where I could concentrate on taking the first concrete steps towards my most important goals.

I was at the California Institute of Technology when they acquired their first computer. After getting acquainted with the logical operations of that machine, I became fascinated by the obvious practicality of using such a capability to translate languages automatically. I had a day-time job and realized that to prepare and test out algorithms for the computer, I needed plenty of computer time. An unexpected factor helped me: the computer, a Datatron 205, had a drum which had to be shut down in the evening and restarted in the morning. Repeatedly the operators had problems with the starting of the drum. I made an offer to the management: I would be willing to watch the drum all night, take the necessary steps should something go wrong, if in turn they would allow me to use the computer at night to test and debug my programs. The management accepted and the first ground work was laid, exactly thirty years ago, for today's Systran.

Of course such an arrangement necessitated keeping rather unusual hours. A typical day for me was as follows: my regular work between 8 a.m. and 4.30 p.m. with a short lunch break. Eat an early dinner at 5 p.m. and sleep between 6 and 10.30. At 11 p.m take control of the computer room until 7 a.m. the following morning, subsequently eat breakfast, shower and back to work again at 8. This went on for many months. I lived with my mother and grandmother just a few blocks from the computer room and my mother usually brought me a hot meal between 2 and 3 a.m. (At that time it was safe to walk in Pasedana at night.)

Many of the algorithms which I thought out and tested during those long nights are working in Systran today, although before I devoted myself exclusively to the design and development of Systran I also created several other workable systems in the field of machine translation like the Serna system at Georgetown, and subsequently the Autotran and Technotran systems.

Systran was really born with the IBM 360 computers in 1963/64. My purpose in designing, developing and implementing it was to have a system which takes full advantage of the latest hardware to overcome language barriers on a large scale. My wish that this system serve mankind from an idealistic point of view always genuinely surpassed monetary considerations. My friends used to tell me: "Peter you gave away the farm".

I have been criticized for signing the first contract with the European Commission for a relatively small amount and making available not only the English-French module but for the same small sum the total basic Systran software 10 years ago. I was told repeatedly that I should have asked for a higher sum, continuous royalties, etc. My consideration was and is Systran's contribution to the Commission activities and the fact that it would promote better understanding between member countries and even between countries outside the Commission.

As far as I can see Systran has a double contribution to mankind: by eliminating language barriers on a large scale it definitely contributes to lessen the tension among nations, thereby helping to prevent confrontations. This first contribution is an important one but certainly not enough to ensure a safe world for ourselves and for our children.

Today when the deterrent policies of the superpowers are holding almost the entire population of our earth hostage, causing a massive violation of human rights, today when a submarine commander or a computer failure can cause a chain reaction which may eliminate millions of innocent people, today when the danger of accidental nuclear war increases daily, Systran must do much more to save mankind.

Therefore I have sold World Translation Center Inc. with all the corresponding rights and decided to use the revenue from the sale to begin developing two great Systran-supported projects which will eliminate the ever increasing danger mankind is facing today. The first project is an International Symposium on conflict resolution to be held in Dunedin, New Zealand, on October 28 of this year, the second a private university on the South Island devoted to eliminating conflicts and preparing in a special manner a new generation of statesman, politicians and diplomats from students selected because of their talents from many countries.

May I ask for the distribution of pamphlets and some other information concerning these two important projects on which I would like to elaborate a little bit more.

The obvious question is why I wish to undertake these projects in Southern New Zealand?

Because it is a neutral environment situated far away where events can be observed with distance and consequently with objectivity. It is a peaceful environment which is conducive to productive thinking. When you are down in New Zealand you have to a certain extent the same feeling as Congressman Bill Nelson from Florida, Chairman of the Subcommittee on Space in the U.S., had during his flight in the shuttle. He described it on a television interview and I am quoting: "The lasting impression when you look back from space on this fragile globe suspended in the black void of space, is that it is absolutely necessary for us to try to reason together to love one another and to find peace."

From space as well as from New Zealand the danger that we are facing can be seen more clearly since we are not exposed to it directly, we are not targeted. It is an interesting feature of our human mind that we cannot seem to cope with danger when we are directly in it. I travel to New Zealand frequently, five times last year, and each time after I return to San Diego, i.e. a targeted area, I experience a change in me. My mind protects me telling me that an accidental catastrophe, which could destroy the whole city, will never take place. A few weeks later, when I am back in New Zealand, I see differently again.

As I mentioned earlier, the first step towards the elimination of global danger is the International Conflict Resolution Symposium which is supported by monies which I received from Mr Jean Gachot when he took over World Translation Center and its rights. This Symposium will be held at the oldest university in New Zealand, the University of Otago next October. This conference will bring together internationally recognized and accepted scholars from around the world who, for two weeks, will work collectively and apolitically towards reaching a real solution to today's danger in general and to the problem of accidental nuclear war in particular. This Symposium will differ from other summits and conferences in that the participants will not merely read papers and discuss possibilities, but actually create a workable system, recommendations supported with weighted arguments and detailed explanations of the alternatives. While the systems will clearly define how all dangers and threats (starting from the biggest ones) can be systematically eliminated, the recommendations will assure that every country and its inhabitants will be able to maintain independence and stability.

The second project serving mankind is the Aorangi International University in Dunedin. In addition to offering graduate courses in, for example, international relations, political science and conflict resolution, member of the faculty and carefully selected devoted and talented students will work together in making concrete plans for achieving ideal peace on our globe.

The suspicious great powers will not accept recommendations from one another. On the other hand the leaders of these powers should know that control is running out from their hands and there are more and more persons who - losing their heads under temporary confusion, or being under the impression that they have to fulfill a mission - may start a nuclear war. This is the time when a relatively neutral brains trust must act to influence the great powers. Credibility and acceptance will be ensured first by the objectivity (the distance and detachment from actual happenings), secondly by the fact that during preparation of the plans and recommendations, conflict resolution software systems and up-to-date data banks will be utilized, and thirdly by the prestige of the faculty.

The slogan of the university will be; 'Mens sana in corpore sano' (sound mind in sound body). High intellectual education will be constantly interchanged with healthy sports.

There cannot be a higher goal before us than to do everything humanly possible to save our civilization. I am very glad that Systran can make a serious contribution towards this goal. The monies I received from Mr Sadao Kawasaki after I handed over the Japanese related systems, as well as the payments of Mr Jean Gachot I mentioned earlier were generated by Systran. Through the Aorangi International University they will serve the best interest of mankind.

There are of course sceptics who say 'it cannot be done', that I will not be able to carry out successful fund raising for the remaining portion of the money which will ensure the construction of the buildings and budgets for operations for at least the first five years. Systran is a typical example that what is necessary can be done if there is enough will and devotion. Systran was needed twenty years ago as we need today to solve the problem of menacing nuclear suicide. Scepticism must be dismissed and all efforts must be made to realize what is strongly needed today.

Twenty years ago even members of the Academy of Science of the United States belonged to the group of sceptics as far as machine translation was concerned In 1963 and 1964, experts were called before a special Committee of the Academy to testify that machine translation could not be done. The dates of the hearings were carefully selected to fall at a time when I was in Europe. The ALPAC report was a devastating blow to machine translation particularly in the United States.

The Systran project which I just started at that time remains almost the only practical approach in the field. In 1965, the Deutsche Forschungs Gemeinschaft (German Science Foundation) called together for a one day meeting top German linguists to have a consensus of opinion concerning my Systran approach. I made a presentation and answered a number of well-reasoned questions. The majority of the experts decided that the Systran concept was the right one and I received my first contract to develop the system on a larger scale. Until that time and even the following two years I wrote all my programs myself in 360 Assembly languages. The first system was debugged and implemented on an IBM 360-30. The first 32 bytes in the analysis area (that is all I had at the time) and almost all the bits in those bytes still carry the names I gave them in 1965-67

The attitude of the German Science Foundation had an influence in the United States. The U.S. Air Force decided to make an open bid for practical machine translation after all the problems which they had with MARK I and MARK II (I am referring of course to the photodisc). I had to compete with IBM and Bunker Ramo Corporations. Systran was the winner. The next and probably most significant step in Systran's development was the continuous sponsorship of the Foreign Technology Division (FTD) of the U.S. Air Force at Wright Patterson Air Force Base. The Air Force had no suitable computer at that time and in Southern California there was only one installation at Systems Development Corporation in Santa Monica. Thanks to the foresight of Prof. Unger, the University of Bonn installed the first IBM 360-50 in Europe and Prof. Unger was kind enough to offer me the night shift for debugging Systran during the months of September, October and November 1968. During these months with the cooperation of excellent programmers from the University, Systran was implemented for the first time on a larger computer. Early in 1969, Systran was installed at Wright Patterson Air Force Base. With devoted staff members I spent many nights at FTD's newly installed computer to ensure smooth operation of the first version.

Ten years ago, Systran was installed here at the Commission. I am thankful for the Commission's continuous support during the past 10 years which certainly enhanced considerably Systran's success. I am also thankful to other Systran Users who trusted Systran from the very beginning and participated in the development of new language pairs as well as dictionaries. I would like thank particularly NASA, General Motors and Xerox Corporation.

Although I started Systran alone, the system could never have achieved its success without excellent staff members. Some of the La Jolla staff members have been working with me for the past 15 years and have made a significant contribution. European staff and most recently the Japanese have also helped in further refining the system and expanding its capabilities.

I am happy that Systran will go down in history as the only large scale system to overcome language barriers. I myself will continue to support Systran 1n every possible way, giving advice and recommendations whenever I am asked. May I ask all Systran users who have gathered here today to work together to unify the somewhat different systems and coordinate future developments.

I am somewhat withdrawing myself from Systran to be able to concentrate more on the high goals I have mentioned, in order work for the best interests of our civilization. I am convinced that these vital projects, which can be implemented thanks to Systran, have a good chance of saving the Northern Hemisphere since their approach is so unique and convincing.

Please continue to support Systran. And would any of those of you here today who would like to participate in what is possibly Systran's greatest contribution to mankind at the Aorangi International University please contact me directly. Or write to me at the address in New Zealand as indicated on the pamphlet.*

Thank you.

*Peter Toma's New Zealand address is:

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