MACHINE TRANSLATION SUMMIT II
Opening Address
C. Rohrer, Conference Chairman

Herzlich willkommen in München! Welcome to Munich! Welcome to MT Summit II! A: conference chairman I am glad and relieved that so many have responded to our invitation. We are more than 250 participants from all over the world. Thank you for coming! Please do participate actively in the conference in order to make it a success.

What is the aim of the second MT Summit? Like the first MT Summit in Hakone, Japan, this conference brings together users, research and development experts and government policy makers in order to promote practical MT systems.

Why do we need MT? A global economy presupposes worldwide circulation of information. This flow of information is hampered by the language barrier. The information, however, must be available in the national language of the user. Therefore it has to be translated. The demand for translation is very high. In western Europe alone more than 150 million pages were translated last year. There are not enough qualified translators, the costs are enormous. Consequently, MT is the only solution. The use of one language, like English, as a world language is ruled out because we must preserve the linguistic and cultural identity of our partners. We don't want to reduce our national languages to the role of dialects, limited to folkloristic purposes.

As I said, the first MT Summit was convened in Japan. This was no accident. Japan has made the greatest effort to develop practical MT systems. Fifteen private companies have developed research prototypes and/or commercial systems. In addition there are projects sponsored by the eminent and the very ambitious attempt to translate even telephone conversations automatically (ATR Interpreting Telephony Research Institute in Kyoto).

We had many applications from Japan. Unfortunately we could not provide time slots for the presentation of all the systems. Therefore several systems are only present at the exhibition. In comparison with Japan, Europe invests much less in MT. The EC is funding one big project but the overall amount spent in Europe is far below the Japanese figures. Especially computer makers in Europe and in the USA show far less enthusiasm than their Japanese competitors. This is, of course, reflected in the programme of our meeting and in the accompanying exhibition.

The emphasis of this conference is on <u>practical</u> MT. It is not a conference where computational linguists and computer scientists discuss special problems in technical jargon. We have three sessions where <u>operational</u> MT systems are presented. Furthermore we have a panel on practical experience in the application of MT systems. At this panel you can ask questions like what results have been achieved so far? Where and how can MT systems be used? Why don't more companies use MT systems? Have these systems been introduced prematurely? Please don't hesitate to ask questions at the panels! We need your active participation at this conference and in the future.

Besides operational systems there will be presentations of <u>systems under development.</u> We intend to give you a global view and have included systems from Europe, China, Japan and America. Of special interest are the multilingual projects: EUROTRA, the project of the European Community which should lead to a system translating between the nine languages of the EC., and ODA, a project of an MT system for Japan and its neighbouring countries. ODA intends to translate between Chinese, Indonesian, Malaysian, Thai and Japanese. In the panel on new directions in MT systems we will try to look a bit into the future. We use natural language for representing, storing and processing information. If one really believes that the layman, the casual user, will be able, one day, to interact naturally with the computer, then natural language is the optimal instrument. MT is only one application in the area of Human-Computer-Interaction, but it is one of the most difficult and challenging certainly. Research on MT can lay the basis for future high-level knowledge and information processing.

Research on MT is very expensive. Therefore we have to find ways to share the research and development costs in the precompetitive phase. To give one example: every MT system which translates from German into another language will need an electronic dictionary of German. Why don't we pool our resources and develop a common German machine-readable dictionary? Or if we think in terms of Europe '92, why don't we share the costs of electronic dictionaries for the languages of the European Community? We must cooperate. Or, to quote La Rochefoucauld, the famous French philosopher and moralist of the 17th century: "It would foolish to try to be smart alone". Which form such a cooperation should take is one topics of the panel on governmental views of MT.

The political decision makers, however, should not only discuss administrative measures. One of the main reasons why MT is not more advanced and not used more widely lies in our educational system. The study of language at the universities and at the school for interpreters is part of <u>the humanities.</u> In the humanities <u>computers</u> are still very often rejected on ideological grounds. When they are used, they have a purely instrumental function, they don't serve as a tool for creative research.

A few weeks ago the Wissenschaftsrat, the highest body which advises the German Federal Government on questions of university education, recommended that every university student (irrespective of what he studies) should take a four-hour semester course in computer science. I don't know of any German university which already fulfills this requirement. A translator certainly needs more than a four-hour course, but at the moment he does not even get that. In addition all students must have access to adequate computers. The more a user of an MT system knows about language, computers and computational linguistics, the more he can profit by the system. Most potential users today have an unrealistic picture of what a computer can do with natural language.

Another angle from which we have to approach MT is <u>technical writing.</u> MT is not for poetry or fiction. - Syntactically and semantically political speeches also fall under fiction. - MT is for technical texts. Now who writes technical texts? Where do you learn to write good technical texts? The better a text is written, the easier it is to translate, for human translators as well as for machines. Two steps are necessary. On the one hand, courses on technical writing should be established at university level, preferably at technical universities where the future technical writer can at the same time study the subject he will write about later. On the other hand, more research is necessary on technical language and sublanguages in general. How can one produce texts which do not contain ambiguities, or at least only very few ambiguities? Is it necessary to restrict the number of syntactic constructions and the words which can be used in order to avoid ambiguities? Can we make MT fully automatic by controlling the input and still produce texts which don't bore the people for whom they are written? For me these are fascinating questions? Why shouldn't they also fascinate some students and professors of German, especially if the student finds a job afterwards?

At the beginning of our talk we said that a global society, a world society, needs a free flow of information and that it is translation which makes this flow of information possible. Johann Wolfgang von Goethe, a Weltbürger, a citizen of the world, par excellence clearly recognized this fundamental task of translation when he wrote:
"Denn was man auch von der Unzulänglichkeit des Übersetzens sagen mag, so ist und bleibt es doch eines der wichtigsten und würdigsten Geschäfte in dem allgemeinen Weltverkehr". ("Kunst und Altertum", Artemis, Gedenkausgabe, Band 14, S. 932). Translated literally: Whatever one may say about the shortcomings of translation, it is and remains one of the most important and respected occupations in world communication, trade and traffic. (Following Herder, Goethe uses 'Verkehr' in the sense of communication, trade and traffic).

I hope that MT Summit II will succeed in promoting translation in general and machine translation in particular.

Address of Welcome

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Ladies and Gentlemen,

I have pleasure in conveying to you the best wishes of the Federal Government
and of the Federal Minister for Research and Technology, Dr. Heinz Riesenhuber;
we all hope that the MT SUMMIT II will be interesting for you and for the organizers.
In Hakone, I announced our intention to hold this convention in our old German
capital of Berlin; but our efforts in this respect were not successful; I am therefore
happy to welcome you to the Bavarian capital - which is in fact frequently called
Germany's secret capital and - with regard to the weather - shows its best side, today.

The Federal Minister for Research and Technology supports work in the fields of
MT and computer linguistics for three reasons:

1) Machine translation systems require computer linguistics research and
   development in the analysis of the source language, in transfer and Interlingua
   problems and in the generation of the target language. R&D results must lead
   to software developments, which can then help to realize the translation. Ana-
   lysis, transfer or Interlingua and generation are directly connected with basic
   linguistic questions and the related basic research. Computer linguistics, software
   development and basic linguistic research are a complex R&D field. The object
   of research is the still enigmatic structure of human language and of individual
   languages in the field of tension between practical handling in translation and
   theoretical knowledge and profound understanding. It seems to be expedient
   therefore that at the MT SUMMIT II, MT suppliers and leading computer linguists
   together attempt to present and explain to the translators the state-of-the-art.
   Considering the increasing internationalization and globalization of scientific,
   economic and cultural developments, the BMFT feels it is his task to make a
   supportive contribution to this R&D field.

2) The BMFT supports R&D, it does not, however, support commercial MT systems because this is the task of industry, which is also responsible for commercialization. Provision of government support in this field would always contort competition, In addition, translators and their representatives fear that the use of MT systems might take their jobs away. This fear is understandable - against the background of a general reservation about computers - but, in my view, it is irrelevant at the present time. And it is very unlikely to materialize in the future for the following reasons:

   a) The demand for translations is increasing in many areas at an above-average rate, in particular with regard to long technical texts and manuals.

   b) Machine translation systems will always be developed further in order to make ever better translations, which will not, however, be perfect for a long time into the future. Pre- and post-editing of such machine translations will always call for the translator. However, translators - and rightly so I think demand a certain quality standard of machine translations, since pre- and post-editing must not, of course, take longer than direct translation by the human translator.

   Here, the complex semantic problems, which have not yet been solved satisfactorily play an essential role; the human translator will always be better than any machine. For this very reason, it seems important to me that MT systems be used to support translation. The exhibition provides you with quite a comprehensive survey of systems which are either already on the market or in the development stage.

3) The BMFT also provides support for scientific and technical information including its dissemination via electronic data bases. Owing to the existence of worldwide telecommunications networks, this information market is a world market par excellence, in which buying and selling of information is a matter of seconds. This world market demands that data bases be offered in the English language; it has become almost general practice for German information products such as the Beilstein data base and physics or mathematics bibliographic data bases offered in the STN Network. The German language, which was once the leading language

science, has been replaced by the English language after the First and Second World Wars. Of course, we also face translation problems in this field when establishing or using such data bases, and here MT systems might acquire a new significance. However, to put it somewhat pointedly, the computer and the English language have a particular affinity for each other, which the German language and the computer do not have. For this reason and on account of the scientific, economic and cultural position of the Federal Republic of Germany, another concern of the Federal Government is that the German language be included in MT systems, at least in the language pair German-English, but in future preferably also in other language pairs.

These are the main ideas behind our promotion activities, which will be explained in detail in the Panel II. In conclusion, I wish the SUMMIT II every success and continuation in two years. Thank you.

Grußwort des Staatssekretärs im Bayerischen Staatsministerium für Wissenschaft und Kunst, Dr. Thomas Goppel, MdL, anläßlich des 2. Gipfeltreffens zur maschinellen Übersetzung (Machine Translation Summit II) am 16.08.1989 in München.

Anrede!

Für die Einladung zum 2. Gipfeltreffen für maschinelle Übersetzung danke ich Ihnen herzlich. Es ist mir eine große Freude, die international führenden Experten auf diesem in die weite Zukunft weisenden Gebiet hier in München zu begrüßen. Ich tue dies auch im Namen der Bayerischen Staatsregierung und speziell im Namen des Bayerischen Staatsministeriums für Wissenschaft und Kunst. Daß Sie, meine Damen und Herren, München als Tagungsort gewählt haben, werte ich als Zeichen der großen Bedeutung, die der bayerischen Landeshauptstadt als Forschungs- und Industriestandort inzwischen zukommt.

Durch maschinelle Übersetzung sollen Texte und sogar gesprochene Sprache schneller, als dies bisher möglich ist, und zugleich gut übersetzt werden. Das Anliegen, die Produktivität beim Übersetzen zu steigern, wird angesichts der bestehenden Sachlage überaus verständlich. So heißt es in einer Pressemitteilung zu dieser Veranstaltung, daß 1986 allein in Westeuropa ca. 100 Mio Seiten übersetzt wurden und weltweit jedes Jahr viele Milliarden ausgegeben werden, um Informationen in einer anderen Sprache zu vermitteln.

Wachsende internationale Verflechtungen machen es immer selbstverständlicher, mit Partnern aus verschiedenen Sprachgemeinschaften zu kommunizieren, Dies gilt seit jeher für Wissenschaft und Wirtschaft, aber in zunehmendem Maß auch für die Politik, man denke etwa an die fortschreitende Einigung Westeuropas mit dem Fernziel einer Europäischen Union,

Grundsätzlich sind zwei Wege gangbar, um Sprachgrenzen zu überwinden. Man konnte sich zum einen auf eine für alle verbindliche Sprache einigen und auf diese Weise das Problem der Übersetzung umgehen. Dieser Weg wurde und wird beschritten - ich erinnere an die Rolle des Lateinischen in vergangener Zeit oder auch an die ganz ähnliche Funktion, die das Englische gegenwärtig erfüllt.

Bei allen Vorteilen, die eine einheitliche Sprache bietet, bleiben doch gravierende Nachteile bestehen. Wer sich einer fremden Sprache bedienen muß, ist häufig nicht in der Lage, mit der von der Sache her gebotenen Differenziertheit und Subtilität zu formulieren, sich dem Gesprächspartner mitzuteilen. Mißverständnisse sind dann unausweichlich.

Auf lange Sicht wird die Dominanz einer einzelnen Sprache aber auch kulturelle Unterschiede einebnen. Gerade im Hinblick auf die Einigung Europas, das, wie ich meine, zu Recht stolz ist auf seine kulturelle Vielfalt, sollte deshalb die Bedeutung und das Gewicht der verschiedenen Nationalsprachen erhalten, ja gestärkt werden.

Damit stehen wir wieder vor dem Problem der Übersetzung. Sie ist der zweite Weg, Sprachbarrieren zu überwinden.

Was die maschinelle Übersetzung anbetrifft, so liegt ihre

wirtschaftliche Bedeutung auf der Hand. Man braucht sich beispielsweise nur vorzustellen, daß die Lieferung eines "fertigen" Produkts an einen ausländischen Empfänger verzögert wird, nur weil die übersetzte Fassung der Bedienungsanleitung noch nicht vorliegt. Unter ökonomischem Aspekt erscheint das untragbar. Eine leistungsfähige maschinelle Übersetzung wäre deshalb für ein exportorientiertes Industrieland wie die Bundesrepublik Deutschland ein Faktor von überragender wirtschaftlicher Bedeutung - wäre, weil in diesem technologischen Neuland die Grenzen, wie mir scheint, manchmal noch fließend sind. Ich bin allerdings sehr neugierig und lasse mich gern eines besseren belehren.

Ein Politiker verbindet mit den Fortschritten der maschinellen Übersetzung zum Beispiel die Erwartung, daß das umfangreiche Schriftgut der EG künftig rechtzeitig auch in deutscher Fassung vorliegt. Die Freude darüber wäre allerdings getrübt, wenn die Texte dann noch holpriger und schwerer verständlich ausfielen,als sie es bisher schon der Fall ist.

Vielleicht ließe sich durch maschinelle Übersetzung auch ein Trend aufhalten, der im wissenschaftlichen Publikationswesen unseres Landes zu beobachten ist. Immer häufiger wird nämlich in Englisch und nicht in der Muttersprache veröffentlicht. Ich jedenfalls würde mich freuen, wenn dem Deutschen als Wissenschaftssprache wieder mehr Geltung verschafft werden könnte,

Wie kaum ein anderer ist der Forschungszweig "Maschinelle Übersetzung" auf interdisziplinäre Zusammenarbeit angewiesen. Für künftige Erfolge auf dem Gebiet der maschinellen Texterfassung ist es unerläßlich, daß Informatiker, Linguisten, Psycholinguisten und sicherlich noch eine Reihe weiterer Vertreter verschiedener Fachdisziplinen intensiv zusammenarbeiten.

Einen Beitrag zur Förderung dieser interdisziplinären Kooperation darf man sich z.B. von dem Lehrstuhl für Computerlinguistik erwarten, der an der Universität München neu geschaffen wurde. Das Besetzungsverfahren ist allerdings noch nicht abgeschlossen. Des weiteren können sich im Rahmen einer Kooperation zwischen der Firma Siemens und der Universität München derzeit zwei Linguisten bei Siemens weiterbilden.

Meine Damen und Herren, noch ist es viel zu früh, in der maschinellen Übersetzung das Ende jener Sprachverwirrung zu erkennen, die mit dem Turmbau zu Babel ihren Anfang nahm. Auch die Schüler an unseren Schulen sollten sich nicht zu früh freuen und glauben, sie könnten das Übersetzen bald ebenso den Maschinen über-lassen wie jetzt schon häufig das Kopfrechnen. Ich wünsche Ihnen, meine Damen und Herren, jedenfalls nicht, daß sie eine maschinell ins Englische übersetzte Fassung meines Grußworts lesen müssen.

Vielleicht aber kann ich Sie eines Tages auf Bayerisch begrüßen, und eine Maschine übersetzt es Ihnen simultan ins Hochdeutsche, Englische oder welche Sprache auch immer Sie gerne hätten. In diesem Sinn wünsche ich Ihrer Tagung einen erfolgreichen Verlauf und Ihnen darüber hinaus noch genügend Zeit, den Charme und die Schönheit Bayerns und seiner Landeshauptstadt kennenzulernen und auf sich wirken zu lassen.