IN THE BALANCE - ERICSSON LANGUAGE SERVICES

by Gary Jaekel

This talk will present an overview of the translation market and how this market is affected by developments in the telecommunications industry, as well as some information about the investment in machine translation made at Ericsson Language Services.

I would like to start off by saying a few words in general about Ericsson Language Services. Ericsson Language Services became an independent company within the Ericsson Group as of July 1, 1994. Technically we are a subsidiary of a company called Ericsson Infocom which, in turn, is wholly owned by Ericsson Radio - the Ericsson company responsible for marketing and developing mobile telephone systems. While this move has placed new requirements on us and opened new possibilities, our areas of operation have not changed from our previous organizational placement and structure. Broadly speaking we offer products and services within the areas of Language Training, Translation and Terminology and our customer base is Ericsson worldwide. We currently deliver our products and services to 23 different Ericsson companies. Though we are free to market Ericsson Language Services outside of Ericsson, and intend to do so more aggressively in the long-term, our foremost goal in the

short-term is to consolidate our position within Ericsson. This is reflected by the fact that currently only 1% of our turnover comes from customers external to Ericsson.

My intention today is to say something about the following general areas: (SLIDE)

An Overview of the Translation Market

How developments within telecommunications have affected translation needs

Our work with machine translation

(The first two points will somewhat run together)

<u>THE TRANSLATION MARKET</u>

As you all know, there have arisen a number of different estimates concerning the translation market worldwide, within the European Union, per country and so on. The figure 20 billion dollars worldwide was once put forward by a Japanese survey at the end of the 80s. As far as Sweden is concerned, its fairly recent

membership in the European Union has led to an enormous increase in the demand for translation, and not only for the various official bodies of the EU itself, but also through increased needs within the import/export sectors. In passing, we who work within the areas of translation, terminology, language training and interpreting are gratified to see that language-related professions are finally receiving increased prominence and priority. Suffice it to say that the translation market is very large and that there are both vast untapped goldmines out there and well-worked seams in need of entrepreneurs who can dig more efficiently. If we are to bring things into focus, what is Ericsson's need annually? I have done my best to answer that question in countless surveys and at numerous occasions such as this one. The answer is that there is no way of determining this with any degree of exactitude. I estimate Ericsson's worldwide translation needs to be about 100,000,000 SEK per year, or approximately 10,000,000 ECU. Of this Ericsson Language Services currently handles about 10%. The Ericsson market is there and, I would suggest, not being handled efficiently from my point of view. Ericsson is a very decentralized company with well-delegated responsibility and authority. This may be very good in many respects, but the extraordinary thing is that while many transnational companies are procrastinating about an investment in machine translation, for example, Ericsson has had three installations of machine translation systems going to one degree or another at the same time: our installation of Logos, and two installations of Metal at Ericsson affiliated companies. (One such installation was closed down about a year ago). In addition,

Ericsson briefly marketed its own MT system called Eritran, a product it acquired through the purchase of a telecommunications company in Germany. Yet another system was appraised by the then Translation Section within Ericsson Telecom before I became manager there in 1987. What this means is that Ericsson has worked extensively with three or four machine translation systems over recent years without even knowing it, so to speak. This is unique in my experience.

Even if the market for translation done using a machine translation system is obviously not the same as the translation market as such, the problems encountered in implementing a machine translation system to meet that market's demands and requirements are basically the same as the broader, more traditional market, writ large. If I may re-work a joke once told by a friend of mine who happens to be with us today: Any given company knows exactly when it will be celebrating its first one hundred years of existence, yet it will, with certainty, take until two days before the event for the promotional material to be sent in for translation. Now, while inadequate planning by the customer is endemic to the translation business, I maintain that this little anecdote also illustrates the fact that companies often don't know what they want to say until the last minute. These days, the market and other circumstances surrounding business are so volatile that the half-life of any information produced is extremely short.

I am sure I am not alone in maintaining that a company always reflects its customers. Customer requirements are always the driving force behind how a company acts on the market. If a software company localizes its software sort of when it gets around to it, the need for getting around to it won't exist for very long. A few years ago, when telecommunications operators in the industrialized world functioned as public authorities or, at best, publicly owned companies, simply getting around to it was basically the name of the game. In a monopoly situation, the private subscriber's need to get a telephone or an opportunity to invest in new technology were secondary to the seemingly absolute necessity for peace and quiet within the telecommunications authority. Now that has all changed, or is increasingly changing, not only in industrialized countries, but around the world.

Telecommunications products, like any other product, need to be documented. The problem is that the final end user encounters a so-called terminal, like this, which, believe me, is extremely easy to operate when compared to the system which lies behind it. The end users of that system are the personnel employed by the operator, of which there may be several on any given national market. These operators want to make money because their shareholders demand a return on their investment. This means that they want new services and functions rapidly and effectively. Downtime in a telecommunications system can be fatal. So, though system crashes and other more minor problems are expected to occur, they need to be handled as efficiently as possible. An

important factor in this handling is the quality of the documentation accompanying the system and, increasingly, that this documentation is in the language of the operator's personnel. Moreover the documentation is not to be written in, to the layman, university-educated engineer hieroglyphics, but in simple, task-oriented language directed towards personnel who, as far as their jobs are concerned, are not generally interested in the undoubted sophistication of the systems design.

All of this has placed the delivery and operation and maintenance of telecommunications systems much closer to the problems and possibilities reigning within the consumer software market. One major difference being that, instead of the localization of a user's manual of perhaps a couple of hundred pages, we have to deal with, at least in Ericsson's case, three to four thousand documents amounting to 15 to 20 thousand pages, quite apart from whether the documentation is delivered on paper, or, as is more often the case today, CD-ROM.

This state of affairs must be seen as a challenge, and, for any translation business venture or service organization, a very attractive opportunity. What are the factors which may stand in the way of the meeting this challenge? To my mind, the following constitute the two major ones. Firstly, for all the money the translation industry generates, it is a cottage industry which may consist of a number of administrative hubs, but which has relatively low profit margins and where turnover is traditionally paramount. Concentrating on rapid turnover is a bit like water-skiing -

everything's fine until you stop, at which point you're worse than dead in the water. It is still so that too few translation companies offer package solutions to their customers' needs. But what about translation service organizations within industry? Speaking both from experience and from what I've heard in various countries, a service department within an industrial company should be, at most, seen and not heard. The job should get done, but it shouldn't cost anything because the service is not part of the industrial company's core business. It is simply a fact of life that it's hard to blame a company for giving priority to what its stockholders want it to give priority to. This is why industry increasingly, and with few exceptions, is moving to outsource services like translation. Getting large corporations to make major investments in language technology is seldom an easy task. Typically, if machine translation suppliers approach upper corporate levels, they are likely to be met with either blank stares - "machine what?" - or a next to gung-ho attitude where expected and immediately slashed overheads are the only issue.

The second factor is wholly within the companies themselves: there is all too often a lack of control over the documentation process. Documentation may well be recognized as a necessary evil, but less often as a vital part of the product itself. If there are too few translation companies offering complete solutions to their customers, there are even fewer willing to tackle the mess evident in the documentation handling of many large companies. As I hope to make clear in the next part of my talk, this issue is easily of equal importance to translation, for the best results, as is linguistic

quality. One viable approach is machine translation, but there are, at best, too few companies, organizations, people willing, or capable (?) of looking at things in a larger perspective. Machine translation isn't the answer to anything, it is potentially a very valuable part of a process.

WORK WITH MACHINE TRANSLATION AT ERICSSON LANGUAGE SERVICES

On other occasions I have attempted to go more into our reasoning behind the requirements we place on a machine translation system, the source documentation, our initial problems and a few prerequisites for success. Here I would just like to review the goals of the project, the type of documentation we are working with and a bit about the workflow which goes under the name of SATMET, or Semi-automated Translation Method. (SLIDE) We are presently working with Operations & Maintenance documentation for the AXE switching system. The documents are increasingly delivered on CD, rather than paper, in SGML format, and are written or edited, for the most part by technical writers. The text is stored in SGML Publisher, graphics in Island Draw and the language is controlled, though there is more that can be done here. (SLIDE) The goals of the SATMET project are to provide translation from English to French, Spanish and German, establish the translation process in the documentation process, increase translation productivity by 50% and increase quality by 100%. Our environment at Ericsson Language Services consists of a UNIX network containing all of the

Ericsson documentation tools necessary in this context, as well as Logos and other aids. We have one system administrator, who is also project leader for this particular project and 3 to 6 translators, 2 for each language. Our workflow is the following: SLIDE

We have been working with machine translation, and in particular the Logos system, for about three years. Just to give you an idea of what we have been doing during this period: we have tested various system configurations, built up our own UNIX network, developed Translation Tool, fed in terminology and worked on ways to incorporate terms in file form, acquired translation resources, trained translators in Logos as well as SGML in general, SGML Publisher and so on, maintained ongoing discussions with Logos and parts of Ericsson about further development, marketed our idea within Ericsson, and, of course, translated. I'm quite sure I've missed something. And work during this period has not been a full-time occupation for those involved. We have received during this period one concrete order for translation where we could use our method: translation from English to French for Matra Ericsson in France.

While we have been propagating for the use of our, as yet unfinished method, extensive efforts have been made to market and polish the Docware concept (Ericsson's re-vamping of the documentation process) within the Ericsson world. If you recall

what I said earlier about the decentralization of Ericsson, you will realize that these two intimately connected processes of documentation and translation have not been, and are still not, easy to implement. The pro argument is up against well-established routines which, though far from perfect, seem to work well enough, as opposed to something new which, at first glance (and even at relatively close inspection) seems only to eat up time and money. For our part, during this period of development, we have spent in the vicinity of 2.5 million SEK, 250,000 ECU, and, when our current order is delivered, will have received about a quarter of this in income. On the other hand, knowledge of our work with machine translation has led to our involvement as a reference in other development projects both in- and outside Ericsson.

If we return to our goals for the project, I can give you some idea of how things are progressing.

Translation from English to French. Spanish and German

Our order from Matra Ericsson comprises some 4000 documents. All of these obviously need to be delivered. As to the other languages, we intend to trim the method through running and finalizing a test suite of 50 assorted documents per language through the system. We are also running test translations of a few documents in Framemaker for Ericsson in Germany. Both Ericsson in Switzerland and Spain will begin discussions with us early next year.

SATMET in the Documentation Process

The first step here will be to fully productify SATMET through documenting the method. This will be accomplished and formalized by the end of this year. Secondly, through our involvement in the documentation development projects, we will help to determine the future direction of Docware accessibility and quality at Ericsson.

50% Increase in Productivity

Despite some major problems which need to be solved and which I will go into in a moment, we are currently reaching our goal as to productivity concerning the translation of one type of Ericsson document. Experienced translators working with O & M documentation can produce about 12 physical pages of text per day manually. When we began working with Logos in a production capacity, we initially saw only a very slight increase in productivity. Currently, after working about a year in production mode, we are, on average and for all types of documents receiving a 26% increase in productivity. If we remove the pre-editing we are forced to do because of DTD problems, etc., we would receive a 40% increase. If we confine ourselves to Operational Instructions, which are re-written in SGML, rather than converted from another format to SGML, we are covering a day's work in about an hour and a half.

What are the problems? Let me say at the outset, and quite contrary to what I thought would be the main problem in this context, that we find the quality of translation received after the system has been trimmed to be quite acceptable. Editing is

required, of course, and my translators maintain that a "human" translator would have solved certain translation problems more elegantly, but the resulting product is perfectly serviceable. No, our major problems concern limitations in Logos or difficulties connected to SGML. If we take Logos first, the main problem is the current limitation on the length of a term or phrase which can be input to the system. The titles of Ericsson documents, for example, are also terms which need to be handled consistently in translation. Another problem, which may seem at first glance to be a detail, but which causes serious problems, is where an input term or phrase, divided by a carriage return, is no longer recognized as a term. Logos is addressing these and other smaller problems and we are expecting solutions in their next major release. As to SGML, Ericsson, in converting to SGML, solved certain issues by putting them in a sort of SGML gray zone which, in turn, creates problems for Logos's SGML filter. This is generally a DTD problem, and the solution we are looking forward to is a universal DTD to replace the current 27 different DTD's we now have theoretically to deal with. The result of all this and similar issues is that we now have to protect certain text segments, reserving them for manual translation at a later stage. Not only is this time-consuming and not terribly interesting work, but it is also essentially pre-editing, a step not specified in our method. Currently, this work represents the difference between a 26 and 40% increase in productivity.

Of course there are other matters to be attended to in working with such large projects: structuring libraries, working with terminology, quality control vis-a-vis the customer, planning, meetings, general

administrative costs, but taking all of this into account, it is clear that our original goal of a 50% increase in productivity was quite realistic. Once again, a translation operation can pull its own weight and more, only so long as the proper prerequisites are met for the most efficient use of an intelligent translation process.

100% Increase in Quality

Here we have a step in our workflow concerning ongoing quality control by the customer. In our translation project for Matra Ericsson, our work is measured against their system for quality control for translations done by traditional means. Without going into this in detail, faults are divided into categories of major and minor, where a certain number of major or minor faults are permitted per 100 pages. MET's measurement of the documents we have delivered thus far have provided results in line with their quality requirements.

Now, this may sound like an unbelievable success story soon to be made into a major motion picture, but I cannot emphasize enough the fact that working in this way requires considerable rethinking of traditional approaches to translation projects and the job of translators. Since we have also been permitted to invest resources in this concept, both at a time when we functioned as a service unit and, thus far, as a company, it also of the utmost necessity that the right people within the organization be willing to take the risk, and

argue for the vision, the concept. As manager, and now managing director, I have certainly been one of these people, but there have also been others - my current and previous superiors, and customers - who have placed their trust in our judgment.

In short, Ericsson Language Services, as well as any other organization or company supplying translation to industry, is in the balance, that is to say, not only at a sort of permanent crossroads where customer requirements and service viability meet, but also in the weighing up of what is possible and what must, at least for the time being, remain in dreamland.