THE USER-DEVELOPER EXPERIENCE

Tatsuo Arai
Japan Convention Services, Inc.

JAPAN

JCS's Position as a User-developer

Japan Convention Services (JCS) is one of the largest companies in the field of international communication. Our services cover translation with specialists in many fields, documentation, a full range of interpretation, both for business and special purposes, multiplex news broadcasts for the major Japanese TV networks, the organization and management of conventions, trade fairs and expositions, among other things. With this wide range of business activities as a background, we decided to enter the field of machine translation as a user-developer. For us, being a user-developer puts us neither in the category of the normal user, nor completely in the category of developer.

A user-developer does not function as a prime user, who receives special support from the system supplier in return for cooperation in testing and polishing up the system in the early stages of its release. Much of the prime user's cooperation is in practice in the preparation of user dictionaries. The user-developer engages in a much wider range of activities than the prime user from the very earliest stages of system development. JCS has been engaged in both grammar development and dictionary compilation for the PIVOT system.

Why did we choose to become a user-developer rather than stay in the position of a prime user? Because our primary need is to find practical and immediately applicable by-products of the machine translation systems currently being developed. The prime user's position in the development of conventional systems is effective. In the case of new types of systems, such as natural language processing systems, he may not be so effective in fact. Once an MT system has passed the development stage, design changes are not easy to make. The feedback from users, that is translation companies and translators, needs to come in while system development is still going on.

On the one hand, few system suppliers would at this point in time claim that their system is good enough yet to meet the demands of quick, accurate and cheap translation. On the other hand, there are many very practical and useful utilities in any machine translation system which can help the translator in his work. Putting these by-product utilities to work also provides a lot of new information on how best to implement the different facets of the user interface in larger systems. So we are a kind of user - we speak for the user. At the same time, we contribute to the development of the complete system.

Advantages to JCS from being a User-developer

The largest advantage we have received from our position as user-developer is the freedom both to use the fully-developed MT system and to exploit the by-products of the development of that system. A typical example is our development of a system based on morphological analysis techniques, called TER-GET (TERminology-GET).

The TER-GET system performs two functions. The first is unaided insertion into the Japanese source text of English terminology in specific technical fields; in this role, the TER-GET system acts as an automated dictionary for technical translators and terminologists. The second function is compilation of lists of Japanese words appearing in the source text but not registered in the TER-GET system's glossaries; this enables terminologists to continually update glossaries, and provides a tool for continual system improvement.

We have been operating the TER-GET system for nearly one year, and it has proved to be very helpful for both translators and terminologists. The system was developed by JCS independently from the PIVOT system. Our ability to develop this system independently has been precisely because of our position as a user-reveloper. Had we continued as a prime user this would not have been possible. Our experience as user-developer has added to our know-how in a way which would not otherwise have been possible.

JCS's Contribution as a User-developer

JCS's biggest contribution to the development of the PIVOT system may have been our ability to provide documents from a variety of special fields. Developers of MT systems usually use their own documents as trial text, and this limits the range of the text used and may produce a system which works well only for certain specialized fields. The performance of this type of system for documents in other non-related fields may actually be quite poor.

The nature of JCS's business in the field of international communications means that we handle a very wide range of documents. In technical fields: operation manuals, user manuals, service manuals, technical specifications, reference guides, and others. These documents cover the electronics, telecommunications, automotive, steelmaking, machinery, and chemical industries, and extend to architecture and similar fields. We handle contracts, reports, proposals, letters, abstracts, circulars, brochures, catalogues, annual reports, news releases, and many other documents.

From this wide selection we were able to provide a variety of documents as trial text for the PIVOT system, and because of this breadth of field, the PIVOT system was able to develop as a wide-based , rugged system with the ability to handle a variety of written styles and terminologies. Without this input from JCS as a user-developer, the PIVOT system may have developed based on the style of NEC's computer manuals!

Evaluation of Our Performance as a User-developer

Obviously, the fastest way to develop a practical MT system is to limit the input text in both style and field. In fact, most system developers have had to limit the field from the start because of the problem of dictionary compilation. This has the added disadvantage of limiting grammar development to that particular field's style. Even with this limitation, however, a reasonably good performance can be achieved.

In the above respect, our very strength as a user-developer also contains a potential weakness: the prime user has the advantage in developing a practical MT system which specializes in a limited field. Most prime users, however, do not have the capability to compile system dictionaries or develop grammar rules. They are usually limited to compiling user dictionaries. One way of optimizing this situation is for a user-developer with capabilities like JCS to concentrate on a limited field.

Should we , then, limit the field of the source text? The answer to that depends on where the emphasis is rut. If emphasis is put on development of an ad-hoc system, then it seems reasonable to limit the source text. On the other hand, if the emphasis in the design stage is put on optimizing system performance, in producing a rugged system, it would be better to have no limits on the source text.

There may be many mixes for the ideal user-developer according to where priorities are placed. At JCS, we in many ways represent the model user-developer in our role in the design policy of the PIVOT system. One thing is clear; the user-developer's role is to put the system supplier in touch with the realities as seen from the translator's viewpoint. Without this, the system supplier cannot develop a system which meets real needs in the real world of business. This is what makes the user-developer so essential in development of machine translation systems. The breadth of experience in the real business of translation which JCS was able to contribute to the PIVOT system has been a major factor in the overall success of the system.