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By Melanie Siegel and Hubert Pabst

Improving documentation through controlled language and terminology

In 2008, Konica Minolta introduced controlled English and Japanese to their authoring and editing processes in order to make documentation more consistent. The process sent the team through an in-depth analysis of existing documents and helped the company to become more quality-focused.

Organization of a multinational company

Konica Minolta is a multinational company that authors technical documentation in Japan, Germany, Australia, and the United States. Its documentation is translated into more than 30 languages. Konica Minolta headquarters are located in Tokyo and coordinate activities across the world, including the translation of documentation that was originally written in English and Japanese.

A European documentation group oversees the translations and modifications of documents for the

European market.It was this European documentation group that became the driving force for introducing standardized, understandable communication and information. This included documentation on the whole product lifecycle, such as service information in the knowledge management system, technical documentation and technical training material. The Japanese headquarters assumed responsibility for the project and set up a global project team. The team then started to develop target definitions for every regional headquarters to adapt and implement.

Getting ready for machine translation

Konica Minolta's Service Division started to research language technology developments to find out about the usability for their work. The so-called "Natural Language Processing Project" was split into the following subprojects:

1. Machine translation
2. Summarization
3. Search
4. Automatic Sentence Creation (for example, FAQ)

In preparation for machine translation, the company struggled with its English content. The baseline for all translation should be high-quality English documentation. However, the quality of the English text appeared too low and not standardized enough for machine translation systems. Additionally, after a more in-depth study, Konica Minolta found out that misunderstandings in daily communication stemmed from poor quality and inconsistency in writing.

Therefore, they introduced a measurement system for the machine translation system and tried to analyze the theoretical cost of the misunderstandings in communication and information, based on time and communication charges:

The cost was too high. There was a burning need to improve the quality of the English documentation and communications.

Discussions at the tekom conferences added to the impetus for change. Two new Natural Language Processing subprojects were born:

1. Controlled Language
2. Terminology

Increasing efficiency in technical communication and information

The targets for a controlled language application were defined as follows:

- Bring the Content of Konica Minolta´s Service Knowledge Management System to a required high quality English to support machine translation
- Translate the content of all user documentation from Japanese into high-quality controlled English to support a low-cost translation process.

To implement these targets, the company introduced the controlled language checker acrolinx IQ(tm), which supports authors with spelling, grammar and style checking as well as terminology management.

The company realized, however, that the language rules for its special use of languages had to be carefully

defined. To find an agreement across the world for a common Konica Minolta English required substantial effort and flexibility on the part of the project team. Extensive knowledge transfer also took place between project members and acrolinx.

Language service provider acrolinx undertook an initial feasibility study of Konica Minolta guidelines showing that many rules could be implemented using acrolinx software. Some of the rules were already contained in acrolinx style rule sets (e.g.: do_not_use_future_tense). Other rules needed to be added (e.g. check_specific_adverbs). In many cases, it was found that building up a terminology database and using this database to check Konica Minolta documents could best implement rules in the guidelines. An extensive analysis of Konica Minolta data supported these findings.

Establishing terminology

Alongside the controlled language project, Konica Minolta started another worldwide project called "terminology". During its discussions about the acrolinx rules, Konica Minolta realized that there was also a drastic need for a well-prepared terminology. In order to standardize usage of English in its documentation and communication, it had to create a terminology based on prohibited and preferred terms.

As a first step in setting up terminology, acrolinx ran a Term Extraction on a large number of documents that identified term candidates. Acrolinx aggregated these candidates to evaluate inconsistencies in the documents and validate terms.

The Japanese team became increasingly interested in the project. The English rules in acrolinx IQ(tm) were presented in Tokyo and people were impressed. Two factors were important for the further development of the system: Support for non-native English and support for Japanese documentation.

Like the German group, the Japanese group writes documentation directly in English. However, non-native English can entail different issues for speakers of different native languages. Acrolinx identified and supported these issues.

Furthermore, in Japan, a substantial amount of documentation is written in Japanese. As a result, acrolinx also had to support Japanese writers.

A coherent process had to be established for providing non-native English support to both the European and Japanese writers. Konica Minolta and acrolinx also cooperated in developing linguistic resources and rules for Japanese authoring support.

Finding common ground

Working in an international team on two sides of the world creates numerous obstacles, such as differences in language and time zone, and the inability to meet with all participants in person. To overcome these obstacles, the project teams made use of web conferencing and email. Cultural differences, such as different vacation times and style of communication, also influenced cooperation. As a result, onsite visits and personal communication were highly important.

Support for non-native English is based on the same rules for Japanese and German speakers, but with a different focus. A data analysis yielded interesting statistical results. The difference between native German and Japanese speakers already emerged in English spelling: While most spelling mistakes made by Germans involve the omission of letters, Japanese spelling mistakes display a greater range of issues, including the addition of letters and derivation problems. The concept of sound-to-writing is different

between the groups.

In Japanese grammar, an important factor is the concept of linguistic agreement between subject and verb, which is based on honorification and not on number and gender. As a result, a large number of grammar mistakes by Japanese speakers are due to agreement. Both Germans and Japanese, however, confused certain words (amount - number, affect - effect - impact) - more semantic aspects of the language.

The most prominent difference in style entails the usage of articles. As the Japanese language uses no articles, it is extremely difficult for Japanese to use them correctly in other languages. On the other hand, Germans, like English native speakers, do not have significant problems with articles, so rules had to be adapted to account for J-English. Culture also produces certain differences: Japanese tend to formulate language in a more indirect way, which is not feasible for English technical documentation. Whereas Germans have problems with simple language: they tend to write long and complex sentences.

In essence, the same spelling, grammar, and style rules apply for non-native and native speakers of English, but the focus and issues are different. The only way to get to these is intensive data analysis.

The development of a corporate style for Konica Minolta was therefore based on analyzing a massive number of documents and including existing guidelines, which were checked for feasibility and tested on the data.

Testing and training global teams

Konica Minolta provided training with acrolinx IQ for its editors and technical specialists and helped them understand the rules. The company wanted the software to serve as a daily support tool and personal trainer, not as a rigid supervisor.

The creation and refinement of the rules improved documentation substantially. On the one hand, the software has helped ensure high quality English documentation. On the other, the editors have internalized the rules for English.

Project results

- Konica Minolta was able to reduce translation costs through an increased reuse rate of five to 15 percent.
- Konica Minolta has a terminology database and can check terminology in different file formats
- Konica Minolta receives positive feedback regarding the quality of its English

Ongoing issues

- The project is ongoing and requires a time commitment
- Konica Minolta is not experienced with the long-term implementation of the software or its final results. However, the software has motivated many departments to think more about the quality of their information and communication. This intriguing side effect has contributed to Konica Minolta's success around the world.

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