

Reaching Billions of People in Multiple Languages with a Single Source

a report by

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Global Solutions for Medical Information Processes

When aspirin was discovered in 1897, presumably by Arthur Eichengrün, and the success story of the agent acetylsalicylic acid began, it was inconceivable that this drug would one day become a painkiller that is used all over the world. Nowadays, the global use of medical, technical and pharmaceutical products is an integral part of the corporate strategy in the multinational pharmaceutical and medical industry and, increasingly, even mid-size companies are entering international medical markets with innovative products. The globalisation of medicine and the concurrent international merging of most diverse medical products are both among the strongest of the economic and social effects of globalisation at the beginning of the 21st century.

Service providers offering translation and localisation (adaptation of translations to target market requirements) of medical information are facing great challenges in the wake of these developments. The solution will require highly specialised knowledge in the various medical fields at the highest levels. A miracle cure for the management of product information is eXtensible Markup Language – or XML.

One Hundred Official Languages

The number of official languages is thought to be about 100, ranging from A – as in Aimará in Bolivia – to Wolof in Senegal. However, this estimate does not include official regional languages. It seems logical, therefore, to pose the question: “How can medical product information be presented and distributed efficiently all over the world?”

Safety Through Detailed Information

The purpose of medical products is to reveal important information about the health status of an examined patient and to ensure a successful healing process. Therefore, the reliable and safe handling of these products is vital to their correct application. For

this reason manufacturers are obligated to provide information that will guarantee their correct and safe use. A complex framework of norms and guidelines, as well as their international implementation, determine the form and content of the information. In addition to package labelling, the instructions for use (IfU) require a detailed presentation of the information that must be conveyed.

Product Information

Product information must be created professionally. Moreover, it must be managed systematically. In the case presented here – which may be seen as typical – the relevant information was integrated in a document management system (DMS) that offered not only high security but also the ability to track changes. The documents were usually created with word processing software that allowed high transparency even at the development stage and enabled the user to see the subsequent print image on the monitor. To ensure greater readability, the information was arranged in two columns. At this point the technology would usually start to reach its limits because to achieve the desired outcome, the layout creation had to be complex. Since text quantity may vary greatly from one language to another, laborious layout changes became necessary after the translation.

Developments during the last few years have resulted in considerable changes in product-specific documentation for manufacturers. An increased need for depth of detail and precision of the relevant information has to be reconciled with the demand for high transparency, unambiguousness, and clarity in its presentation and transmission. A successful development effort – new findings, and the constant challenge of securing, improving and perfecting the product features – is associated with a high update rate in the instructions for use.

Under these conditions document processing is becoming increasingly more difficult, tedious, error-prone and expensive. Errors arise from frequent copying and adjusting of text passages or occur when the ‘find/replace’ functions are used. Clarity and



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transparency drop when facts diverge due to different phrasing or layout options. The consequence for the translation process is that identical passages must be translated a number of times, which not only requires more time but it also raises the cost. The growing number of documents and, therefore, the frequent reworking of the layout are clearly a significant cost factor that must be optimised.

This is why the following tasks became paramount; firstly, to change how instructions for use were created so dramatically that information could be conveyed more clearly, simply and safely; and secondly, to simultaneously free it from redundancy with a well-adapted structure and from the common layout problems. Document creation was to happen faster and require fewer staff members. After all, the purpose was to reduce translation cost by avoiding multiple translations and harnessing the advantages of innovative translation technology.

XML is a standard for the creation of machine-readable and user-readable documents in a tree structure. As a meta-language, XML defines the rules for the design of such documents. The XML standard is developed by the World Wide Web Consortium (W3C, <http://www.w3.org/XML/>).

XML-based Documentation Application

Within the XML-based solution, each document needs only limited product-specific information and a significant amount of work is covered by reusable elements. A quick change implemented in one text module is then executed almost instantly in all linked documents. The document author does not need to worry about layout adjustments the system is set up with a predetermined layout scheme. Moreover, documents can be merged so their number is drastically reduced. The translation into all necessary and desired languages and, therefore, the opening up of new markets has become possible with XML.

The Application – Content Before Format

At the core of each XML application is a defined document structure (DTD – Document Type Definition) that follows international and national guidelines as well as company-specific requirements. Thus, the author is consistently required to gather all necessary information. Owing to the fact that XML documents with DTD are structurally uniform, fully-automated formatting is possible. Documents being translated within the XML format are structurally identical not only in the source language, but also in the target language and are formatted automatically during the same process.

In the XML realm documents do not need to consist of a single file. They can also be assembled from several modules that, in turn, can be saved as individual files. This means ‘reuse’ becomes an option. This means the utilisation of the same content in several (master) documents. The hierarchical structure of an XML document facilitates a controlled segmentation along the lines of the structure. Entire passages of product information can be reused. Thus, content that is identical across several documents needs to be manipulated only once, in one location.

Reusable text modules also affect the translation workflow. First, all reused modules are translated into the desired languages. This translation effort only needs to be performed once. Subsequently only the document-specific sections of the master document must be translated.

Summary – Global Communication and Global Information Management

Owing to the fact that the compilation and the publication of product information is so costly, companies in the medical and pharmaceutical industry that wish to capitalise on the opportunities of globalisation must blaze new and efficient trails. Global information management for the medical field will increasingly be transformed into an integrated content lifecycle management to provide the right data at the right time at the locations where they are needed – and at the lowest-possible cost. Six goals are central to this endeavour:

- intelligent and universally reusable information;
- minimising errors through data consistency;
- reduction of text quantity;
- lower translation costs;
- shorter production cycles for publication;
- accelerated time to market.

The internationalisation of medical information with the help of XML documentation applications will become standard within a few years. It will become indispensable for the communication of complete, correct and timely information about medical products for global markets. Service providers in translation and localisation of medical information will need to meet these challenges while, at the same time, satisfying high demands for their professional competency. Only those companies that respond early on to the changing competitive environment and consistently pursue an exclusive specialisation in medicine will be able to provide such services. ■

An extended version of this article can be found in the Reference Section on the website supporting this briefing (www.touchbriefings.com).

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