



SYSTRAN: DaimlerChrysler's Language Engine

By

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June 2002

The 1998 merger of Daimler-Benz AG with the Chrysler Corporation formed one of the world's largest automotive companies. The new entity, DaimlerChrysler (DC) employs more than 372,500 people in 37 countries. The company's brands include Mercedes-Benz, Chrysler, Jeep, Dodge, Freightliner, Setra, Smart and Sterling. The DaimlerChrysler Services division is a leading provider of financial services. The company's total revenues were \$136.1 billion in 2001.

Communication Challenges

With its large multinational workforce, the newly formed DaimlerChrysler faced substantial communication challenges in integrating its operations centers in Germany and the United States. Although the company has two official languages - German and English - the level of language skills varies considerably among DaimlerChrysler employees. While most German-speaking DC employees can speak some English, not all are able to do so with the ease and accuracy that is needed for effective working relationships. Among the English-speaking staff, very few have any knowledge of German at all. For both groups, understanding corporate documentation written in a different language may be difficult or impossible.

Many of DaimlerChrysler's company-internal documents, such as human resources materials, are professionally translated and published for employees. But the merger increased the number of informal day-to-day communications among employees in the United States and Germany. These interactions, which include email messages, internal Web pages

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containing message boards or corporate documentation, and other unpublished company texts, were difficult for employees with limited language skills. Traditional human translation was not a viable solution because of the volume, transience and immediate delivery requirements of informal communications. In addition, human translation would be prohibitively costly.

Evaluating MT Solutions

As U.S. and German interactions increased following the merger, DaimlerChrysler's Language Services Department began to receive numerous requests for automated translation support. With the popular success of machine translation applications such as AltaVista, many DC employees had witnessed firsthand the benefits, as well as the potential pitfalls of machine translation software. In response to the many inquiries, Edith Kroupa, DC's manager of language technology implementation, organized an evaluation of machine translation solutions and their ability to meet DaimlerChrysler's unique requirements. Four commercial MT systems participated in the evaluation. The evaluation entailed building a profile of DaimlerChrysler's requirements, identifying the features of the MT systems, and comparing the fit between the two. The chief considerations for DaimlerChrysler were:

- German-English bidirectional language pairs
- No installation of client software
- Seamless integration with DC's IT environment
- Low performance costs
- No maintenance requirements
- Ease of use and access

With thousands of employees, DaimlerChrysler recognized that installation of client software would create enormous maintenance burdens for IT staff. As a result, a centralized server installation, and integration with DC's IT

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environment was essential. Low performance costs were also important to achieving a return on investment because the potential volume of translation was very large. Since very few DaimlerChrysler employees were familiar with translation technology, ease of use was also an important consideration. The company also evaluated the quality of translation among the four systems using a combination of published studies and internal testing of DC documents. Of the four systems, SYSTRAN met best DaimlerChrysler's requirements for ease of integration, low performance costs, language pairs and translation quality.

About SYSTRAN

SYSTRAN is the leading innovator in machine translation technology. Founded in 1968, the company's machine translation system has been in continuous development for more than 34 years – longer than any other machine translation system in the world. SYSTRAN has traditionally been recognized for its extensive range of language pairs (36), its exhaustive dictionaries and grammars, and its translation quality. A complete rearchitecture of the system was recently completed. The resulting system combines state-of-the-art natural language processing techniques with deep linguistic resources built up over three decades. The system's modular design is highly efficient and allows easy re-use of system components.

Implementation

DaimlerChrysler first implemented SYSTRAN's technology as a test installation within Language Services. The installation of the system was performed by Heisoft, an authorized SYSTRAN integrator based in Cologne, Germany. The test was successful, demonstrating SYSTRAN's ease of integration within the DaimlerChrysler IT environment, and its reliability and performance. Based on these results, an intranet installation of SYSTRAN was completed. The current production system is used by 25,000 DaimlerChrysler employees for the translation of Web pages, emails and

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corporate documents. Users access SYSTRAN using a browser-based interface that interacts with a central SYSTRAN intranet server located within DaimlerChrysler. The terminology dictionaries used by SYSTRAN are maintained by Language Services to ensure consistent terminology usage and complete coverage of DaimlerChrysler vocabulary. Language Services also operates a help desk for SYSTRAN users. SYSTRAN's staff has worked closely with the Language Services group to provide technical support and customization during the implementation phase.

Results and Future Plans

DaimlerChrysler has seen an increase in the productivity and effectiveness of informal business communications through the use of SYSTRAN. The production system currently processes more than 4,000 translation requests each week. DaimlerChrysler conducted user acceptance studies during the implementation process. The results showed that although users recognized the limitations of non-customized machine translation, they still found it to be a useful tool for translating informal communications.

Based on the success of the implementation, Daimler Chrysler is preparing to launch SYSTRAN machine translation capabilities on the company's employee portal. This will extend the reach of the technology to a broader range of users, and a wider variety of document types. Additional language pairs will be deployed based on the needs of users.

The DaimlerChrysler MT story is unique because the initiative to deploy machine translation originated with employees, not company management. Historically, management-driven imperatives to deploy MT within corporations have met with limited acceptance, especially within corporate translation departments. The initiative of DC employees in the choice to use MT has been instrumental to its success. It also illustrates the powerful impact that Internet MT applications have had for individuals, who in turn can evangelize

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the benefits of MT technology within their companies. This grassroots motive for MT deployment may be a bellwether for corporate implementations of the future.

About the Author

Mary Flanagan is an internationally known expert on applications of translation technology for colloquial text and holds a Ph.D. Computational Linguistics from Georgetown University. She led the Advanced Technologies group at CompuServe from 1992-1998. Dr. Flanagan founded Maverick Language Technologies in 1999, a consulting firm that provides translation software evaluation and integration. She holds multiple patents in the domain of real-time automatic translation technology and serves as an industry expert to IDC.



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