

# Machine translation

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## JAPAN

Leading figures in the field of machine translation from all parts of the world met in Tokyo in April for an International Forum on Translation Technology (IFTT '89). The 400 people present made it one of the largest events of its kind. The host was the Japanese Electronic Industry Development Association.

In his keynote address Professor *Makoto Nagao*, of Kyoto University, chairman of the conference, commented that while some commercial systems were available, and some users found it more economic to work with them than without them, systems today were still imperfect and not easy to operate.

There was, first of all, a need to improve the systems. Secondly, there was a need to become more familiar with existing systems. Thirdly, it was necessary to realise that machine translation systems were engineering systems, not biological systems, which meant they could only work within the range of the design specifications. The final requirement was for intensive research based on completely new paradigms, which allowed for human-like flexibility in interpretation and understanding, and in learning capability.

*Veronica Lawson*, independent consultant, from the UK, summarised how technology had improved in four areas: inputting, text preparation, post-editing and dictionary development, since the pioneering years, and then identified the areas in which MT could be used most effectively.

Another major paper was that of *Hozumi Tanaka*, of the Tokyo Institute of Technology, who reflected on what was required to make MT more sophisticated. One was a computational model which could perform semantic analysis and context analysis at the same time, and a promising model in

this area was a language analysis node using the augmented context-free grammar. New research on converting dictionary information was also needed, as was more need of parallel processing in language analysis. He warned, that although MT systems in current use were often based on the C programming language, as systems become huge and complex, a more sophisticated language was needed.

*Professor Yorick Wilks*, of New Mexico State University, was another speaker who glanced at the future, though he was sardonic about many attempts to implement linguistic theories. He thought that advances in MT would come from what he called the "phenomena of scale", i.e. using very large volumes of information.

Other papers gave updated information on the use of machine translation systems in Japan, the United States and in Europe.

One of the most valuable aspects of the conference lay in the exchanges of views by leading practitioners in the several panel discussions which came between the formal papers.