FROM MOUSE TO MOUTH

Speech and translation software is transforming computing of all kinds

It's a glimpse of the world before Babel. In a laboratory in Heidelberg, Germany, researchers sit down for a marathon teleconference with colleagues in Japan, South Korea, Italy, France, and the U.S. Everyone speaks his native tongue, and the computer system, put together by global speech consortium C-Star, translates into any of six languages. As long as the conversation sticks to the computer's specialty—travel—communication is glitchless. "You can say, 'I, uh, sort of would like to find a place to, you know, sleep,' and the computer knows you're looking for a hotel," says Alex Waibel, a computer science professor at both Germany's Karlsruhe University and Pittsburgh's Carnegie Mellon University. After 25 years of development, the computer is growing ever closer to mastering the spoken word. To date, the $1.3 billion voice software industry has stuck largely to rudimentary applications, from telephone computers that understand spoken numbers to dictation devices that take notes for slow-talking doctors. But now, machines talk and understand well enough to start taking on head-
Without keyboards, information appliances will listen, interpret, respond, and serve

gier and more articulate long. Many to funded srX-language search the funding ness. For
Most Japan's The ofbusinesses, including a lot of those with overseas operations,
are programming voice-activated dialing into their handsets. Now, manufacturers are wondering how much more speech to give their machines. The trouble is that speech programs require computing and battery power, both at a premium in credit-card-size phones.

STANDBY. Cell-phone companies already have speech-recognition technology, and many are now picking up the slack. The C-Star Consortium of research universities, which produced the six-language translation program, is funded by a Who's Who of telecommunications companies, from AT&T and Siemens to Japan's ATR.

Most of these companies have their eyes on customer-service programs. Many companies rely on call centers that give customers a machine drone through a menu, usually followed by a long wait. The idea now is to push smarter and more articulate voice programs into these centers.

“The telephone companies are all very hungry for call-center applications,” says Alfred Hauenstein, director of product management for speech-recognition products at Siemens. And for international businesses, such as hotels, the speech systems could fold in translating programs, such as C-Star's.

Even as speech software takes off, Europe's market leader, L&H, has been having a rough year. The $211 million Belgian company's raoring stock fell by a quarter in April, as the U.S. Securities & Exchange Commission disallowed research-and-development write-offs, leading L&H to restate and lower its earnings. Still, the company is pushing ahead on projects with minority shareholders Microsoft and Intel. And its Voice Xpress, an off-the-shelf computer-dictation program, is battling with IBM, Dragon Systems, and Philips in the under-$100 market.

At the same time, L&H is pushing translation applications onto the Internet. It offers a translation browser that flags up rough summaries of foreign-language Web pages. Such services should grow in demand as the Web, 54% of which is now in English, continues to grow faster in other languages. With Intel, L&H is developing machines that understand verbal queries, hunt down information, and provide answers over the phone. “We're talking about machines that can figure things out,” says L&H Chief Executive Gaston Bas-Iaens. “You ask it about L&H stock, and it knows to call up Nasdaq.com.”

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