Rollout!

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Tetsuo stared at the pitcher of ice water. It was close to overflowing and dripping with condensation. The ice sparkled under the hall's bright lights. It was so cold and inviting. He wanted to grab the handle—it was only two feet in front of him—and rub the pitcher against his graying temples, then empty it over his head. Of course, he could do no such thing. Instead he reached out and sipped at his small glass of water.

Tetsuo forced himself to stop daydreaming about the pitcher. He looked around the convention hall. Three thousand people waited for his talk and the all-important demonstration. The camera was set up in the center aisle, ten rows back. He had been up all night supervising the sound crew. Anything less than perfect sound would be a disaster. He caught the eye of the sound man, who gave him a thumbs up sign. Tetsuo had been up the night before last supervising the hardware technicians. A hardware failure would be embarrassing and lose them marketing momentum, but would not directly reflect on their new software. Three nights ago he had been up with the software engineers, who had discovered a bug that would have been absolutely fatal. All the problems had exhausted Tetsuo. His career, his division, the company itself, their American partner firm and even world affairs were on the line. The anticipation for this closing event had been building throughout the three days of the convention. Everyone was speculating about whether his team could pull it off. He would be working in real time without a net, as the Americans say.

The young man introducing Tetsuo was still droning away at the lectern. Tetsuo was to have introduced his CEO, but the CEO had fallen gravely ill last week and asked Tetsuo to take his place. Tetsuo had tried to demur, reminding the CEO how shy he was, but the CEO insisted. Just look at the three thousand in front of you and forget the three hundred million watching through the camera, he joked. Tetsuo thought about those three hundred million—all about to listen very carefully to his every word—and started staring at the water pitcher again. It looked so crisp and fresh and cool. He closed his eyes. He was imagining himself skiing down a pristine mountain slope when he heard in the back of his mind ". . . and now the Vice-president of New Technologies, Tetsuo Watanabe."

Everyone in the hall was applauding. Tetsuo stood up and carried his glass to the lectern. He set the glass down and withdrew his pocket prompter from his jacket's inside pocket. He cleared his throat. Tetsuo suddenly wished his English was a little better.

"Thank you. Thank you very much," he began. "It is a pleasure to return to the heart of Silicon Valley on a sunny California day to be here with all of you and give a small demonstration of our new product, RosettaSoft." At any rate, one of his staff had *said* it was sunny when he came back with the sandwiches. Tetsuo had not left the convention center complex for the last three days.

"I have many happy memories of coming to the Valley to work with our American partners on this project. There were breakthroughs and setbacks, progress and plateaus. Through it all, our sense of wonder at the richness of human communication only deepened. But before I come to RosettaSoft itself, allow me to briefly recap the highlights of almost twenty years of development.

"I was a newly minted computer scientist when I found myself—to this day I still don't know how it happened—in a small discussion group that included the editor in chief of our company's flagship publication. The conversation had rolled around to world events. The editor remarked that one inherent tension in the modern world was between homogenization and diversity. A lively debate followed. Some held that the benefits of world trade and communication were worth the cost of increased

homogenization. Others felt that material gain should not be placed above one's cultural heritage. Still others felt you were fortunate just to have the freedom to choose and not have one or the other forced upon you. I mostly held my tongue, not being used to such lofty discussions." Tetsuo took a sip of water and sneaked a glance at the audience. He seemed to be holding everyone's attention so far.

"Gradually the conversation came around to this proposition: more than dress, more than food, more than music; it is language that is most fundamental to one's identity. What could be more dear to oneself than the sweet sounds of the mother tongue?" Tetsuo hoped that his language was not too flowery.

"It was at this point that the editor gave me a sly look and asked me what I thought of automated translation. I replied that it was certainly a knotty problem and that, decade after decade, the solution was always just around the corner. He agreed that human communication was profoundly complex and ambiguous. Then he added that a new standards committee was forming and perhaps I should attend the first meeting.

"Well, let me just say that my oldest daughter was in first grade when I attended that first meeting and that I was still attending standards committee meetings after she had graduated from college. Such exciting meetings!" The audience gave him a good laugh. He was relieved. Nothing is more deadly than failed humor.

"The biggest conceptual breakthrough for RosettaSoft came early on. We had settled on the goal of universal translation software—software that could translate text from any language to any language—and begun research before we fully realized the magnitude of the undertaking. Even if one leaves aside extinct writing systems and languages (and living languages spoken by very small numbers of people) there remaintwenty-seven actively used writing systems and hundreds of languages."

Tetsuo started the first visual. The large screen above and behind him showed seventy-five names of different languages scattered on it. Then an animation began, inserting lines from each name to every other name. Soon the lines blackened the entire screen.

"As you can see, the number of language pairs is overwhelming-to say nothing of the commercial viability of writing software to translate Finnish into Zulu, for example." A small laugh this time.

"We were sitting in a bar after work hours, dejected, when the solution presented itself. Given our low spirits, we were quiet and half-listening to the other patrons of the bar. There were businesspeople from Germany, from Korea, from Malaysia, from Thailand. Yet they weren't speaking German, Korean, Malay or Thai. They were all speaking English! It hit me like a thunderclap. I pulled out my pen and took the napkin out from underneath my drink. The diagram I drew that night in the bar looked essentially like this."

The second visual appeared on the screen. In the middle was the word English, written very large, with the names of seventy-four other languages arranged in a circle around it. This time the lines began to appear like spokes in a wheel, connecting English at the hub to the other languages on the rim. Very neat and tidy.

"You see how it works? Just translate to and from English. Nothing else required.

"After this breakthrough, we made steady progress. We had a stable product for the batch translation of text years ago. When my company promoted me to the newly created position of Vice-president of New Technologies, my first task was to prepare that product, code named BabelBreaker, for its introduction.

"Then that sly old editor in chief dropped by my office. He had retired the year before and was using his time to read more widely and deeply than he'd been able to while working. He had been reading about

the new multigigachip technologies just then coming to market. Perhaps we should add real time speech recognition and generation to BabelBreaker? What people really want to do is communicate. What they want technology to do is help—not hinder—them, he said.

"I must confess my first reaction was not one of enthusiasm. I replied that it would be a nontrivial undertaking. He said that he had already chatted with the CEO about it—and the CEO was quite enthusiastic.

"Back to the drawing board. Speech capabilities were added and we even incorporated the ability to cooperate with third party recognizers and generators. We retained the text capabilities and added the capacity to generate transcripts from spoken input. And we renamed it RosettaSoft.

"Does it work? Well, you can tell me. If you have understood what I have been saying today—then it works. Two days ago, we made a fully functional version of RosettaSoft available. Three hundred million downloads and counting." Tetsuo swallowed hard and took a sip of water. He did not look at the camera. Time to start wrapping up.

"This product, this miraculous RosettaSoft those of you watching on the Net are using this very moment, handles all twenty-seven actively used writing systems and seventy-five languages. We will add ten more languages by the end of the next calendar year. It truly marks the beginning of a new era in global communications and—it is my fervent desire—global understanding."

The audience rose to its feet applauding. The sound man gave him another thumbs up. Tetsuo managed a smile for the first time in days. When the applause ended, Tetsuo finished his presentation.

"If I may remind you of just one thing: the version of RosettaSoft you have is fully functional for today only. At midnight it turns into a pumpkin! However, I am happy to say that our server is ready to receive your orders for a permanent version. Given RosettaSoft's remarkable capabilities, we think you will agree that the price is quite modest.

"To conclude our demonstration, I would like to introduce San Jose's very own International School Girl's Choir." The audience applauded again and Tetsuo returned to his seat. The lectern lowered itself and disappeared. The house lights dimmed and spotlights lit up the stage.

A young Brazilian girl walked onto center stage and sang one line in Portuguese. Then a young Indian girl dressed in a sari came out and sang a line in Telugu. Then a Japanese girl dressed in a kimono, then a Spanish girl, then a Tanzanian girl. One by one they came out and sang a line until all had taken their place. They paused, then sang the chorus of "The Friendship Song" in unison in English. They were an explosion of song and color. The audience was thrilled and applauded loudly.

The house lights came back up and everyone began congratulating everyone else. The demonstration had gone off without a glitch. Tetsuo patiently answered the same questions over and over from members of the audience. Finally he was able to leave the hall and go to his room in the convention center hotel.

Tetsuo closed the door behind him and sat at his desk. Now came the critical test. He turned on his computer and navigated over to the order processing server. He entered his password and held his breath. Then he saw the numbers. Orders were flowing in by the millions.

They had done it. It was a success. People around the world could now access all the information on the Net in their own language.

Tetsuo stood up and stretched. He took off his jacket and loosened his tie. Tetsuo felt very happy and fulfilled. He went into the bathroom and splashed ice cold water on his face. Then he turned on his music

player and lay down for a well-deserved rest.

The forlorn sound of a shakuhachi grew faint in the distance, like the moon setting in a dense fog. Daybreak arrived. A crane cried and took flight.