

Hurdling the Barriers of Language

THE Japanese are largely poor at speaking English. Even so, with the upcoming Tokyo Olympic and Paralympic Games in 2020, English lessons are becoming popular among those who hope to participate in volunteer activities. Many lessons are given by the Tokyo Metropolitan Government to train volunteers who can help foreigners in their native language as a small act of hospitality. The lessons are so popular that they are fully booked every time they are given.

Meanwhile, with the Tokyo Games in mind, Panasonic, a manufacturer of electronic products, is making progress with its multilingual translation system. The company aims to create a world in which people can easily overcome language barriers.

The development of three types of dedicated devices is underway – a tablet, a megaphone and a wearable device. Panasonic is working to improve the devices using its proprietary expertise, including sound-detecting and noise cancellation technologies, to ensure that the devices can clearly

interpret voices, even under noisy conditions, such as in tourist areas and train stations. The company has developed its original translation engine, a core product component, by modifying the translation engine developed by the National Institute of Information and Communications

Panasonic is developing a multilingual translation system that promises to be a world-beater by the time of the Tokyo Olympic and Paralympic Games in 2020.

TOSHIO MATSUBARA

The tablet-type device will be useful in hotels and tourist information centers because it displays photos and descriptions of the facilities and the destinations mentioned in a conversation.



Technology (NICT). Human vocal data is processed into text and translated via Wi-Fi, through the cloud.

The tablet-type device features a tablet and a micro speaker unit connected to the tablet. It enables two users to communicate with each other through the tablet's screen. If one person speaks into the microphone, in approximately two seconds that person's speech and a translation are displayed as text. The translated audio is generated simultaneously. In addition, the device shows information on the screen related to the facility or the product name mentioned in the conversation. For example, if a person asks the device where Tokyo Tower is located, the information is automatically displayed as a photo and the directions are also given.

The megaphone-type device has the capability to translate what is spoken in Japanese into multiple foreign languages and share this translation with a large number of people through the megaphone. It is also possible to repeat the announcement automatically. The device will be used to make announcements or give directions to a large number of people, such as when giving information on the available services or the transfer information at a train station, when providing evacuation guidance, or when engaging in a security operation at an event.

The wearable-type device is small and smartphone-like, and can be worn from a strap around the neck. Equipped with four microphones that can detect sound from any specified direction, it can recognize what the user has said; even if the user is speaking while looking straight ahead, without holding the device close to his or her mouth. Like the

tablet-type, a translation of what the speaker has said is displayed on the screen as text and the audio is also translated.

“What we are

The wearable-type device measures 9.4 cm x 5.6 cm x 1.2 cm.

The megaphone-type device is being used in a validation trial conducted in places such as Narita International Airport



developing is a system dedicated for corporate use. By making the devices with specific applications, we can accomplish a highly accurate and functional translation that responds to corporate needs,” says Keizo Ishiguro, Director of Panasonic AVC Networks Company's Technology Development Laboratory. “To enhance the accuracy of the translations, we continue to develop products step-by-step, making a list of frequently used words through validation trails and checking the logs to see how the translations are carried out.”

Panasonic aims to commercialize the megaphone-type device in FY2016 and the tablet-type device in FY 2017. The timing of commercialization of the wearable-type device is under consideration.

The accuracy of the translation is approximately 600 points on the TOEIC scale, and at the moment the company aims to raise that level of accuracy to 700 points by 2020. It also plans for the devices to support ten languages by 2020. Currently they support five languages; namely, Japanese, English, Chinese, Korean, and Thai. If ten languages are supported, then approximately 90% of the languages spoken by overseas visitors in Japan will be covered.

“We are conducting validation trials in department stores, hotels and airports. There is a very strong need for this,” says Ishiguro. “We will continue to increase the accuracy in hopes of contributing to the success of the 2020 Olympics.”



All photos: Masatoshi Sakamoto