FROM SILENCE TO SIGHT:

VISUALIZING AND TRANSLATING CONVERSATIONS FOR INCLUSIVITY

As the Tokyo 2025 Deaflympics, an international sporting event for deaf or hard-of-hearing individuals, draws closer, increasing attention is being focused on innovative technologies that support their participation in society. New possibilities for communication have been opened by a groundbreaking technology, available as both a smartphone application and a computer program, that combines a compact microphone and a dedicated display to visualize conversations.

A revolutionary microphone and application have emerged that make it possible to intuitively display who said what in real-time conversations involving multiple speakers, while visually indicating the direction of each speaker on a dedicated display such as a computer or smartphone screen. Launched in March 2023, VUEVO (pronounced "view-vo"), was created by Japan's Pixie Dust Technologies, Inc., incorporating feedback from individuals with a hearing disability.

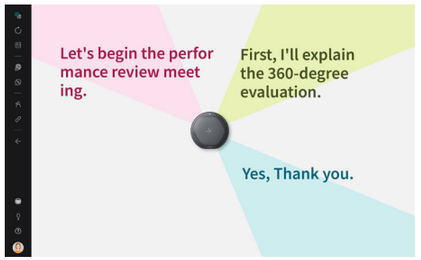
VUEVO's system can differentiate the speaker in a conversation thanks to an array of eight small microphones housed within its compact device, as well as the company's proprietary algorithm. Through rigorous trial and error, the development team succeeded in capturing voice waveforms and accurately assigning them to individual speakers. According to PR Manager YAMADA Yasuhiro, "The technology gives a heightened sense of self-worth to people with a hearing disability." It does so by clearly identifying who is speaking, empowering users to actively participate in conversations.

VUEVO's positive impact is tangible for users like TANI Sonoko of Persol Diverse Co., Ltd., who was diagnosed with a hearing disability at the age of two. Tani ordinarily uses VUEVO during meetings and when speaking with others at her desk. The device's ability to display nearby conversations as text helps her follow and join in discussions and reduces the gaps in information she used to experience; she rarely needs to "pretend to hear" anymore, since the device allows her to confirm what is being said in real time. Whether in group meetings or one-on-one dinners, Tani feels she can now truly participate. "I feel a true sense of happiness being able to actively take part in conversations," she says, noting how VUEVO has boosted her confidence by expanding what she can achieve.

VUEVO's applications extend beyond aiding individuals with a hearing disability, finding favor in settings such as hospitality services for foreign tourists thanks to its real-time visualization and translation capabilities that support more than 20 languages, and up to 120 languages via the VUEVO Display multilingual translation and transcription service.

Typically installed in stations and hotels, VUEVO has found use in unexpected places such as the unique VOWZ Bar in Tokyo's Yotsuya, where Buddhist monks serve drinks and engage in conversations with customers. The nuanced terminology of Buddhism-related anecdotes and the difficulty of translating religious terms for non-Japanese guests would often pose a challenge, but by adopting the VUEVO Display, smooth, face-to-face communication became possible. Yamada explains, "There is a universal demand for direct communication without relying on intermediaries like interpreters or hand-held devices. The VUEVO Display lets people maintain eye contact in conversation, sometimes even bridging cultural gaps."

Yet some issues, Yamada notes, still remain. "The greatest hurdle is the psychological barrier. People often hesitate, unsure if they can communicate with individuals who have disabilities or speak a foreign language. We want VUEVO to break down those internal barriers." VUEVO user Tani echoes this sentiment and shares her hopes for the future. "It's crucial to create a society where tools like VUEVO are widely accepted and embraced, without barriers or hesitation. Wouldn't it be great to see a world where everyone's conversations are visible, like speech bubbles in manga?" ●



Left: In group meetings, the VUEVO microphone (center) identifies speakers and transcribes the conversation onto individual devices such as computers and smartphones. PIXIE DUST TECHNOLOGIES
Below: Illustration of how audio picked up by the VUEVO microphone appears on a computer. Conversations can be separated into up to eight color-coded directions, and unused directions can be muted to avoid audio interference. PIXIE DUST TECHNOLOGIES

The VUEVO Display (left) and VUEVO microphone (right). The microphone captures conversation audio and displays it as a transcription on the speaker's side of the screen and a translation on the listener's side.

YAMADA Yasuhiro, PR manager for Pixie Dust Technologies, Inc.

At VOWZ Bar in Tokyo's Yotsuya, the VUEVO Display smoothly translates and displays religious anecdotes in real time to the delight of non-Japanese visitors. PIXIE DUST TECHNOLOGIES