

Autonomous Voice AI Agent Impacting Japanese Call Centre Business from Singapore

A Singapore-based AI agent development company has completed a commercial development of a multilingual voice AI agent for Japan BPO and Call Centre provider.

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Voice AI Agents at Work

Amid the global "AI boom" that has seen significant advancements in 2025, and as AI adoption accelerates within the call centre & contact centre industry, a Singapore-based AI agent development company specializing in multilingual solutions has developed a multilingual voice AI agent together with a BPO Service provider in Japan.

“

This project represents a challenge to assess how far autonomous VOICE AI agents can contribute to addressing key issues in Japan's BPO industry, aging society, worker shortages, customer harassment.”

Zenta Nishida

Functional AI Partners Pte. Ltd. (Headquartered: Singapore; Managing Director: Getty Poon, a member of [Singapore Computer Society](#)) and [elDesign](#), Inc (Headquartered: Minato-ku, Tokyo; CEO: Kenichi Sakagoshi) are pleased to announce that we have jointly completed development of a multilingual VOICE AI Agent for BPO business in Japan with know-how from BPO operations by elDesign, Inc.

Through this development, the AI agent can now handle tasks that were traditionally performed by human operators in call centers, and do so in multiple languages. This enables significant cost reductions for standardized

operations such as shortening response times, providing support during nights and holidays, and handling foreign language inquiries.

Furthermore, based on simulations for 1,000 calls per month, the system achieved a cost of US\$0.67 (approximately ¥101) per call, at a cost on par with or lower than standard outsourcing rates in the call center industry..

With further development, we aim to reduce the cost to US\$0.20 (approximately ¥30) per call, addressing critical issues such as workforce shortages and structural cost challenges faced by businesses.

□Background

In 2025, the adoption of voice AI agents (primarily in English and Chinese) has surged across call centres and contact centres worldwide. While the Japanese market has lagged, this project aims to enable complete call resolution through autonomous voice AI agents that extend beyond traditional voice guidance or simple chatbots.

In Japan, the call centre and contact centre industry has made much progress through digital transformation (DX), yet operator shortages persist. With remote work becoming standard, as BPO companies are increasingly engaging customers via non-contact channels such as web and social media, this trend shift underscores the demand for AI agents that integrate seamlessly with diverse channels.

□ Overview of the AI Agent Development

We have developed this multilingual VOICE AI Agent in 1.5-month development period. After our extensive research and careful business decisions, we have selected technical platforms of 11 Labs, n8n, Twilio to complete as well as Japanese voice data training from scratch.

□Technical Overview□

Language: Japanese / English

Development Platform: Eleven Labs, n8n, Twilio

Communication Channel: VOICE (SIP), Email (Internal / External Communication)

LLM inside□Gemini, Grok

□Reasons for Platform Selections□

Our development approach prioritizes data management within Japan while leveraging the latest global technologies to ensure stable service delivery unaffected by Japan's isolated technological ecosystem.

ElevenLabs (USA): Given the uncertainty surrounding which large language model (LLM) will dominate in the future, we exclude voice AI platforms offered directly by LLM providers (e.g., Google Cloud TTS, Microsoft Azure TTS). Among alternatives, ElevenLabs was selected for its superior versatility, API integration capabilities, and advanced Japanese voice training features. Its robust base functions for call log management were also key, with the final decision influenced by its exceptional multilingual log comprehension, including Japanese.

n8n (Germany): For workflow design and email communication, n8n was chosen due to its extensive support for various LLMs and its user-friendly UI/UX. This enables clear explanations of designs even to non-technical client executives and facilitates ongoing operations by in-house staff during the deployment phase.

Twilio (USA): As an essential SIP trunk provider for integrating with call centre and contact centre

IP telephony systems, Twilio was selected for its high compatibility with the core platform, ElevenLabs.

This choice also aligns with the accelerating adoption of SIP trunking among Japanese call centre systems, which have traditionally offered only basic VoIP integrations.

□Comments from the Development Team Lead□

“This project represents a challenge to assess how far autonomous VOICE AI agents can contribute to address persistent issues in Japan's call centre and contact centre sectors, including an aging society, talent shortages, customer harassment, nuances of the Japanese language, and the growing presence of foreign workers.”

“Voice AI agents are already common solutions to worldwide call centre and contact centre industries. The client emphasized that a Japan-only solution would not suffice, which aligns perfectly with our perspective and leading to this project completion aiming toward global standard.

“The biggest hurdle during the development was namely Japanese pronunciation. Together with supports from elDesign expertise, we managed to build our own Trained Voice. I see much improvements in its quality as technology improves in the very near future.”

□Future Vision

For Call Centre business operators in Japan, we have made “DEMO” environment of this project available. We aim at increasing AI adaption Ratio of 30% for Call Centre industry in Japan by 2030. We are currently accepting enquiries from Call Centre business operators in Japan for AI Agents adaption to study, develop and solve their business issues like us.

□Company Profiles

□Functional AI Partners Pte Ltd ([FunAi](https://fun-ai.io/))□

Established in Singapore in 2022, Functional AI Partners (FunAi) focuses on practical AI agent development for the Asian market under the motto “Simplifying AI Agent Utilization.” The company has successfully developed over 21 AI agents to date, each designed to deliver operational value and usability across diverse industries.

A member of the Singapore Computer Society, FunAi continues to explore meaningful applications of AI in the evolving digital economy.

Website: <https://fun-ai.io/>

LinkedIn (English): <https://www.linkedin.com/company/functional-ai-partners-pte-ltd>

□elDesign, Inc.□

Founded in 2014 with the vision of "designing a new lifestyle from the perspectives of energy, environment, and economy," the company engages in both consulting and incubation within the energy sector. Committed to addressing societal challenges through the creation of innovative businesses, it will continue to pursue new ideas and technologies in its ongoing endeavors.

Website□<https://eldesign.jp/en/>

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