



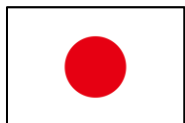
# AI-Powered Platform for Hearing Aid Care and Rehabilitation

# Company Overview

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|          |                                                                   |
|----------|-------------------------------------------------------------------|
| Founded  | April 2021                                                        |
| CEO      | Seiichi Sinden                                                    |
| Capital  | JPY 3million                                                      |
| Address  | 67-11 Imaizumicho, Utsunomiya, Japan                              |
| Business | Hearing-aid diagnostic DX                                         |
| Website  | <a href="https://www.otocure.co.jp">https://www.otocure.co.jp</a> |

# Social Challenge: Hearing Loss and Dementia



In 2060, population will be less than 100 million

Elderly  
population  
will exceed  
**40%**

People with  
hearing  
loss  
**15M**

Dementia  
cost /year\*  
**¥24T**

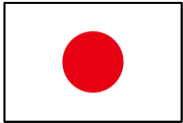
\* <https://mhlw-grants.niph.go.jp/project/24159>

## Hearing loss

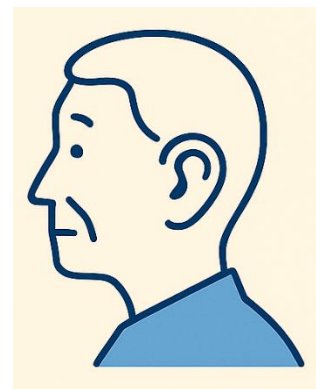
The leading modifiable risk factor for dementia. (Lancet Commission 2024)

# Hearing Care in Japan

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Unqualified sales   Ineffective  
Sales by non-medical professionals Hearing aids

- Only 15% own hearing aids; 30-40% are satisfied.
- Social isolation, depression, dementia risk



# The Utsunomiya Method®

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## Auditory training



Counseling



Audiological  
Evaluation



Hearing aid  
Fitting

Every 1–2 weeks  
Three-month training

- Clinically proven auditory training
- Gradually increasing the volume → Hearing-impaired brain closer to normal function
- 6,000+ patients, 91 presentations, 64 papers.

# DX Transformation Vision

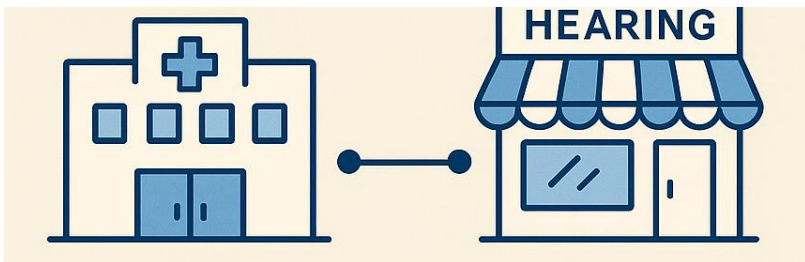
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- Digitize and scale the Utsumiya Method® through an AI-driven care platform



- Provide AI-powered diagnostic support and remote rehabilitation



- Integrate clinics and retailers nationwide

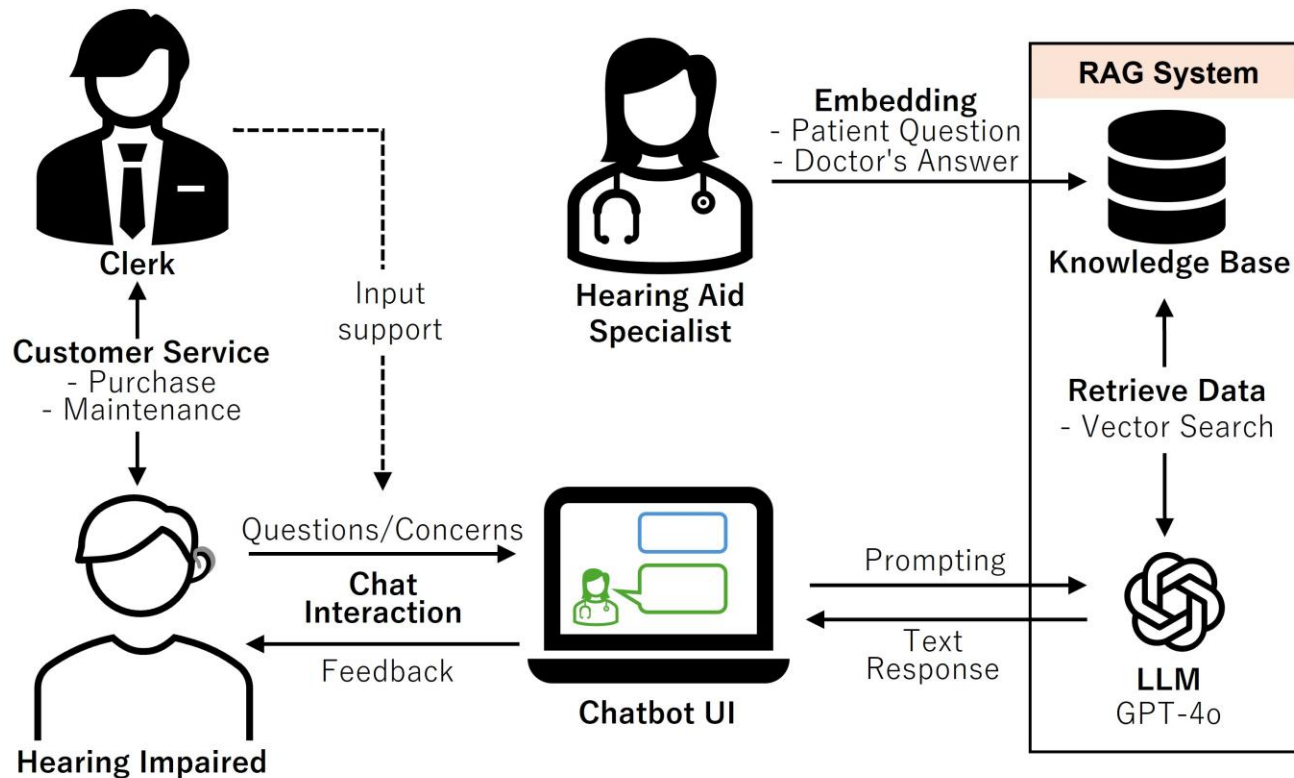
# AI System Overview (LLM + RAG)

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- Input: Hearing aid questions and complaints
- Output: Responses incorporating
- Integration: Smartphone app or hearing aid feature
- Deployment in retail and educational fields

# Use Cases

- Retail customer service
- Training of hearing aid professionals



Proposed System Flow (Retail Usage Scenario)

 補聴器の専門

補聴器は慣れるのに時間を要しますが、適切にトレーニングをすれば、ほとんどの人が問題なく使えるようになっています。

補聴器に慣れるか不安です。



Web Application Example

# Proposed Method

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- Chatbot System using LLM + RAG  
Generates answers from a proprietary hearing aid knowledge base
- Knowledge base built from expert interviews and real Q&A data  
Covers user concerns and adaptation stages

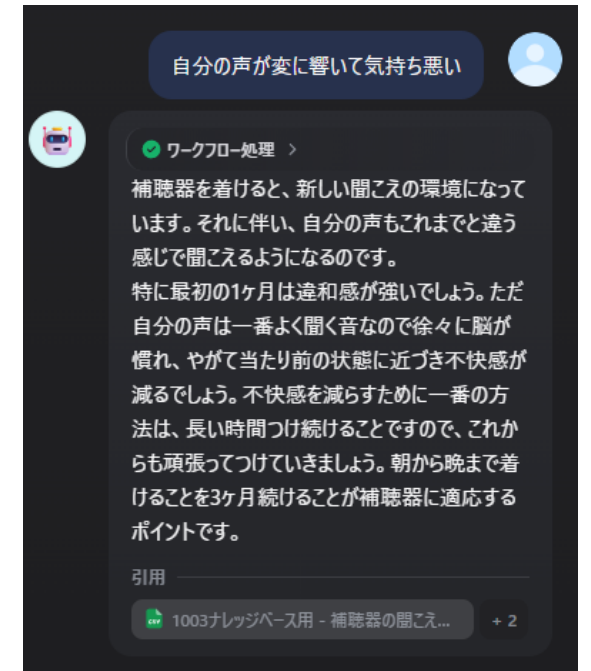
# Implementation and Response Example

## Application Development using Dify

- Knowledge Pre-registration
- Vector Search Retrieval
- LLM Response Generation



Chatbot Flowchart



Response Example

# Implementation and Response Example

## Prototype Phase

- Rapid development using **Dify** to build the initial RAG pipeline.
- Enables retrieval-based response generation from expert knowledge.
- Useful for early-stage proof of concept.

## Next Phase:

### Advanced AI Implementation on Google Cloud

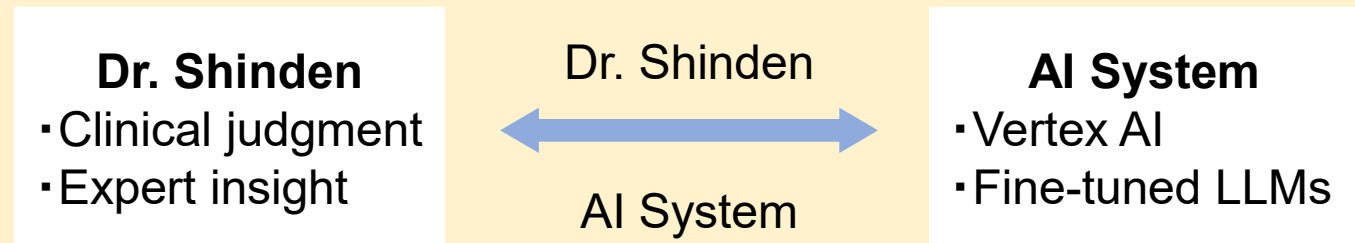
To achieve more natural, expert-level interaction comparable to *Dr. Shinden's responses*, we will transition to **fine-tuning using Vertex AI** on Google Cloud.

#### •Fine-tuning enables:

- Enhanced domain specialization
- Improved responsiveness to patient context
- More consistent and clinically accurate recommendations

#### •Google Cloud provides:

- Secure medical data handling
- Scalable deployment
- Model version control and continuous improvement



# Prototype Demo

## Step 1: Select the fitting

- Initial fitting
- Second or third fitting session
- Follow-up fitting after several months

## Step 2: Select the level of hearing loss

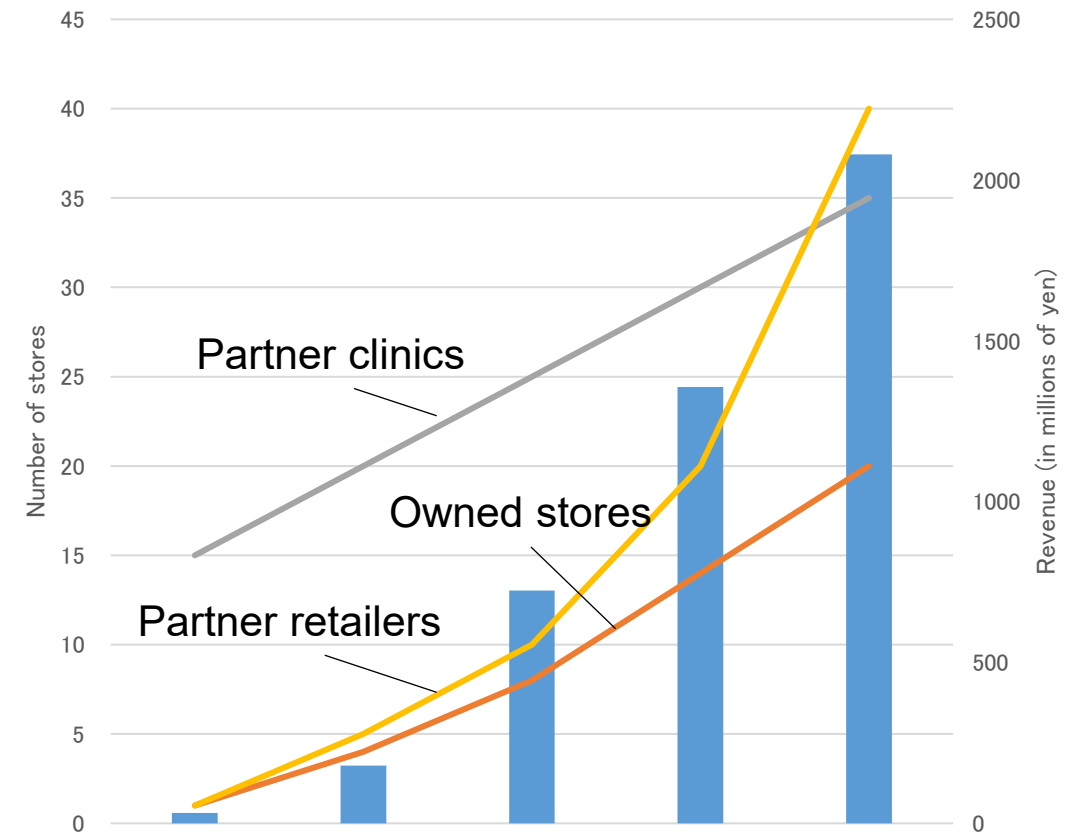
- Mild hearing loss
- Moderate hearing loss
- Severe hearing loss



These selections condition the RAG pipeline, enabling stage- and severity-specific retrieval and responses.

# Business Model & Expansion Plan

- Revenue streams include PB hearing aids and B2B SaaS subscriptions
- Goal: 20 stores, 25k units, 4% share, ¥2B revenue in 5 years.

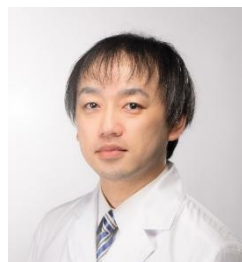


# Team



[CEO: Seiichi Shinden, M.D.](#) 

Inventor of the Utsunomiya Method®  
Chief of Otolaryngology & Head of Hearing  
Center, Saiseikai Utsunomiya Hospital



[CTO: Daisuke Suzuki, Speech-Language-Hearing Therapist](#) 

Clinical developer of the Utsunomiya Method®  
Section Chief, Dept. of Speech-Language  
Pathology, Saiseikai Utsunomiya Hospital



[CAIO: Takuro Watanabe, Ph.D.](#) 

Leads AI architecture, LLM/RAG strategy, and  
clinical AI development Project Researcher,  
Keio University (Information & Computer  
Science)



[CCO: Yasuko Ochi](#) 

Leads clinical operations, medical data  
strategy, and product design



[SE: Yousuke Ambo](#) 

Software Engineer, Application, DWH, and BI  
development

[Finance Lead: Yuki Miyoshi](#) 

Financial planning, fundraising support, and  
operations.

## Scientific Advisory Board



[Naoki Oishi, Ph.D.](#)   
[M.D. \(Keio Univ.\)](#)

Associate Professor, Department of  
Otolaryngology, Keio University  
School of Medicine.