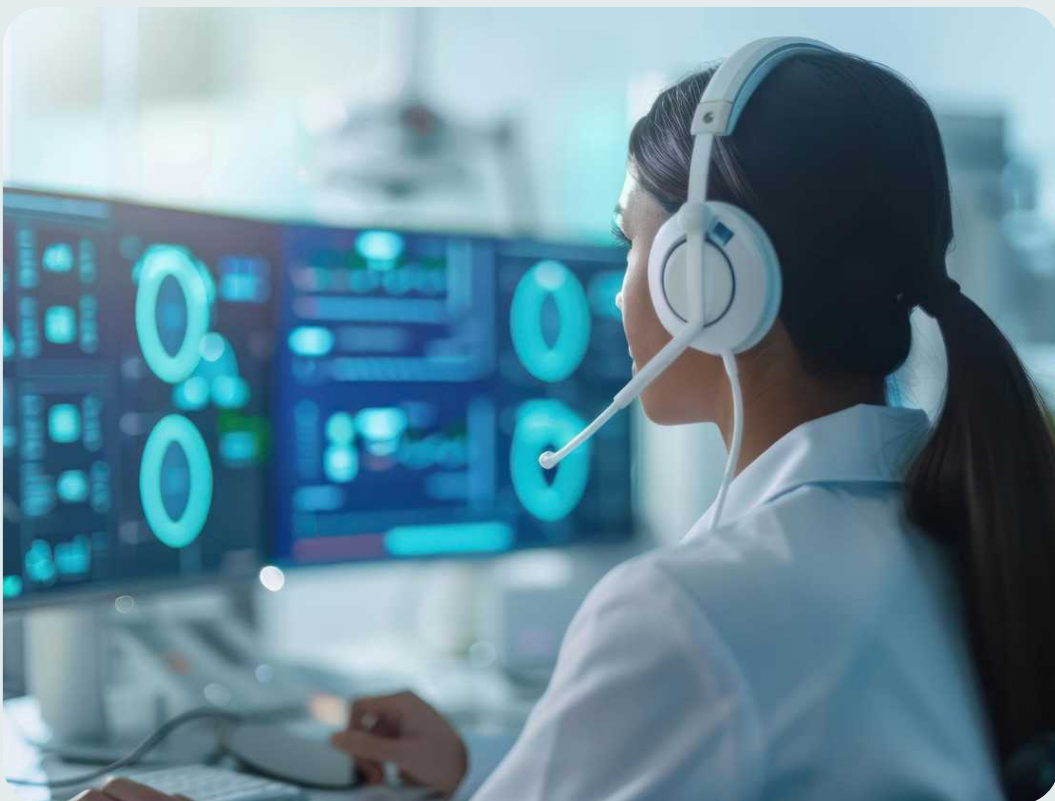


Case Study

AI-powered speech analytics
for Customer Support in
HealthTech



Client: A prominent US-based health insurance technology company

Challenge

The client's customer support teams handled massive call volumes, requiring constant monitoring to maintain service standards. However, traditional quality assurance (QA) methods were insufficient to evaluate these interactions due to:

Limited audit coverage:

Manual auditing covered only 1-2% of support calls, leaving the vast majority of interactions unmonitored

Invisible pain points:

Without a high-level view of all conversations, the company couldn't identify recurring issues that triggered negative member experiences.

Subjective evaluation:

Measuring "soft skills" like empathy and tone was inconsistent, as it relied on the subjective judgment of different QA managers

Script compliance vs. satisfaction:

Strict adherence to scripts often failed to address the root causes of customer frustration.

Solution

ZONE3000 implemented an end-to-end AI Speech Analytics platform to transform the customer support QA process:

Automated speech-to-text pipeline

Deployed a high-precision transcription engine to convert 100% of recorded support calls into structured text.

Sentiment and empathy scoring

Integrated NLP models to analyze emotional markers, detecting levels of empathy and resolution effectiveness in every interaction.

Automated risk detection

Built a flagging system that identifies "high-friction" calls, routing them to support managers for immediate review.

Root cause analytics

Developed a centralized dashboard that correlates conversation topics with customer sentiment to identify systemic service gaps.

Technology used

Built on a modern, scalable stack — from AI models to cloud infrastructure

1 Artificial Intelligence (AI/ML)

Python-based NLP models and LLMs for sentiment analysis and empathy scoring.

 Python

 TensorFlow

2 Data visualization

Power BI for executive-level quality and sentiment dashboards.

 Power BI

3 Speech processing

Azure Speech-to-Text for high-precision multi-speaker transcription.

 Azure

Speech-to-Text

4 Cloud nfrastructure

Azure (managed via Kubernetes) for scalable audio data processing.

 Kubernetes

 Azure

5 Database

PostgreSQL for storing conversation metadata.

 PostgreSQL

Result

The implementation shifted the focus from reactive auditing to proactive customer experience management:



100% audit coverage

The QA team moved from sampling a fraction of calls to having full visibility into every customer interaction.



Objective quality metrics

Standardized AI-driven scoring eliminated bias in evaluating agent performance and empathy levels



Proactive conflict resolution

Support management can now identify and address problematic interactions within hours, swiftly preventing further escalation.



Training optimization

Real-time insights into customer pain points allowed the client to refine agent training based on actual performance data, leading to a measurable increase in member satisfaction.

This case study highlights ZONE3000's capability to transform massive volumes of unstructured voice data into a strategic asset, enabling organizations to set new standards for empathy and efficiency in customer support.