

Client Name: JBL

Domain: Consumer Electronics & Audio Technology

Association Since: March 2021

Current Status: Ongoing

Overview: JBL has partnered with our organization to create a next-generation Predictive Customer Support Assistant. The system leverages a custom-trained Large Language Model (LLM) to proactively address common customer issues, analyze support ticket trends, and provide instant, accurate solutions. The goal is to reduce resolution times, enhance customer satisfaction, and provide insights to the product development teams based on real-world user feedback.

Project Scope: The assistant ingests a wide range of data, including historical customer support tickets, product manuals, community forum discussions, and product specifications. It uses natural language understanding to diagnose issues from user queries and offers step-by-step troubleshooting guides, warranty information, and repair options, integrated directly into JBL's support portal.

Team Structure and Collaboration

Team Size: Approximately 25 people

Roles and Responsibilities:

- **Project Lead:** Manages the overall project strategy and stakeholder communication.
- **AI/ML Specialists:** Responsible for training, fine-tuning, and evaluating the predictive LLM models.
- **Backend Engineers:** Develop and maintain the core API, database, and integration with JBL's CRM.
- **Frontend Developers:** Create the user interface for the support portal and internal analytics dashboard.
- **Data Scientists:** Analyze ticket data to identify patterns and inform the predictive models.
- **QA Engineers:** Focus on the accuracy of AI responses and the reliability of the system under load.

Collaboration Tools:

- **Asana** for project and task management.

- **Notion** for centralized documentation and knowledge sharing.
- **Microsoft Teams** for daily communication and meetings.
- **GitLab** for code repository and CI/CD pipelines.

The team operates on a Kanban-style agile framework, with continuous deployment and a focus on iterative feedback from JBL's customer support division.

Technology Stack and Business Impact

LLM and Frameworks:

- **Custom Fine-Tuned LLaMA 3** on JBL's proprietary data.
- **Hugging Face Transformers** for model deployment and management.
- **PyTorch** for model development and experimentation.

Data and Retrieval Layer:

- **Weaviate** for vectorized data storage and semantic search.
- **MongoDB Atlas** for storing ticket metadata and user interaction logs.

Infrastructure:

- **Python and Flask** for the backend API services.
- **Vue.js** for the frontend customer-facing portal.
- **AWS** for cloud hosting (S3, EC2, SageMaker).
- **Snowflake** for data warehousing and analytics.

Business Impact: The Predictive Customer Support Assistant has automated responses for over 40% of inbound queries, leading to a 55% reduction in average ticket resolution time. It provides the product team with a real-time dashboard of common issues, influencing future product design and firmware updates. The technology is a key differentiator in JBL's customer experience strategy.

Project History and Service Lines

Headquarters: JBL is a global brand with major operations based in Los Angeles, California.

Project History: The initiative started in Q2 2021 as a proof-of-concept to analyze patterns in support tickets for a single product line. After successfully predicting major

issues and reducing associated support costs by 30%, the project was officially greenlit and expanded in 2022 to cover JBL's entire product catalog and become a customer-facing tool.

Service Lines Involved:

- AI and Machine Learning Solutions
- Customer Experience (CX) and Digital Strategy
- Cloud and DevOps Engineering
- Data Analytics and Insights

This project represents a strategic partnership between multiple service lines to deliver a comprehensive AI-driven solution that integrates deeply with JBL's business operations.

Future Enhancements and Roadmap

Planned Enhancements:

- **Voice Integration:** Allowing customers to interact with the assistant via smart speakers and phone systems.
- **Proactive Outreach:** Automatically notifying customers of potential issues based on their product and usage data.
- **E-commerce Integration:** Recommending accessories or upgrades based on the customer's support history.
- **Sentiment Analysis:** Advanced tracking of customer satisfaction in real-time during support interactions.

Roadmap:

- **Q3 2024:** Launch voice integration beta for select smart speaker models.
- **Q4 2024:** Full integration with JBL's mobile application.
- **Q1 2025:** Rollout of proactive outreach features and integration with the e-commerce platform.
- **Q2 2025:** Expand language support to Spanish and French for global coverage.