

SUCCESS STORY

Diagnostics Chatbot (DTC)

A GenAI-powered technical diagnostic assistant for FUSO workshop and operational teams.

Company Name

FUSO

Industry

Automotive

Location

Japan

Impact

AI-Driven Diagnostics with Faster Turnaround

Application

Chatbot

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AI-Driven Diagnostics with Faster Turnaround

A CASE STUDY

Enabling faster, standardized, and AI-assisted vehicle diagnostics by transforming complex technical documentation into real-time, actionable guidance.

Background

Mitsubishi Fuso Truck and Bus Corporation (MFTBC) operates in a highly demanding automotive service environment, where diagnostic accuracy and turnaround time directly impact service quality and customer satisfaction.

Technicians work across diverse vehicle platforms - including Canter, E-Canter (EV), and Super Great - requiring them to interpret extensive technical documentation covering electrical systems, mechanical components, and electronic control units. This information is primarily maintained in Japanese and distributed across large, static manuals.

As vehicle systems evolved and became more complex, the effort required to locate, interpret, and apply this knowledge increased significantly. Cubastion, through its ongoing collaboration with MFTBC on enterprise platforms and AI initiatives, identified the need for a system that could bridge the gap between static documentation and real-time diagnostic requirements.

Problem Statement

MFTBC required a diagnostic support system that could enable technicians to quickly access and apply complex technical knowledge in real time, without relying on manual document search or expert intervention. The challenge was to transform static, multilingual documentation into an intelligent, queryable system that supports both code-based and symptom-based diagnostics while ensuring accuracy, consistency, and usability in workshop environments.

Solutions

Cubastion developed the Diagnostics Chatbot (DTC), a GenAI-powered assistant that helps technicians access and apply technical knowledge using natural language or diagnostic codes, delivering structured and actionable insights.

- ② **Intelligent Diagnostic Query**
 - Handling Supports both DTC-based queries and symptom-based descriptions
 - Interprets user intent across mechanical, electrical, and electronic domains
 - Eliminates dependency on exact code or keyword matching
- ② **Action-Oriented Diagnostic Guidance**
 - Provides root-cause explanations and troubleshooting steps
 - Recommends corrective and preventive actions
 - Aligns responses with real workshop workflows
- ② **Visual and Diagram-Aware Assistance**
 - Surfaces relevant wiring diagrams and circuit visuals
 - Links textual explanations with physical system understanding
 - Enhances clarity for complex diagnostic scenarios
- ② **Multilingual Diagnostic Interaction**
 - Supports queries in both Japanese and English
 - Preserves technical accuracy across languages
 - Removes language barriers in global workshop environments
- ② **Workshop-Ready Interaction Model**
 - Supports voice input and read-aloud responses
 - Enables quick copy and feedback actions
 - Maintains chat history for continuity in troubleshooting
- ② **Conversational and Context-Aware Experience**
 - Allows natural language interaction and follow-up queries
 - Maintains context across conversations
 - Adapts responses based on user input and query progression

Business Outcomes

Improved Diagnostic Efficiency

- ② Improved diagnostic efficiency by significantly reducing time spent navigating and interpreting technical manuals

Higher First-Time Fix Rate

- ② Increased first-time fix accuracy through structured, step-by-step troubleshooting guidance

Reduced Expert Dependency

- ② Reduced dependency on senior technicians for complex issue resolution, enabling faster decision-making on the ground

Improved Knowledge Accessibility

- ② Improved knowledge accessibility across teams, reducing reliance on siloed expertise

Enhanced Technician Productivity

- ② Enhanced technician productivity and confidence through easy access to validated technical insights

Challenges Faced

Business Challenges

- **Manual Diagnostic Effort**
Time-consuming diagnostic processes due to manual navigation of technical manuals
- **High Technician Dependency**
High dependency on senior technicians for complex issue resolution
- **Inconsistent Diagnostic Quality**
Inconsistent diagnostic quality across workshops and regions
- **Complex Documentation Interpretation**
Difficulty in interpreting multilingual technical documentation
- **Limited Symptom-Based Diagnosis**
Limited ability to handle symptom-based diagnostics without explicit error codes

Technical Challenges

- **Unstructured Data Volume**
Large volumes of structured and unstructured technical documents
- **Low Searchability of Content**
Diagram-heavy content with minimal searchable text
- **Multilingual Processing Requirement**
Need for accurate multilingual interpretation (Japanese ↔ English)
- **Real-Time Response Requirement**
Requirement for real-time, context-aware response generation
- **Explainability & Usability Needs**
Ensuring explainable and actionable outputs suitable for workshop use

Key Areas of Expertise Demonstrated

- **Enterprise-grade Generative AI Implementation**
Design and deployment of production-ready GenAI systems tailored for enterprise use cases. Ensures reliability, accuracy, and seamless integration into real-world operational workflows.
- **Retrieval-Augmented Generation (RAG) for technical domains**
Combines AI reasoning with structured knowledge retrieval to deliver accurate, context-grounded responses. Particularly effective for complex technical environments where precision is critical.
- **Multilingual AI systems with domain-specific accuracy**
Enables accurate interpretation and response generation across multiple languages while preserving technical context. Eliminates language barriers in globally distributed operational teams.
- **AI-driven knowledge transformation from static documents**
Converts large volumes of static manuals and documentation into an interactive, searchable intelligence layer. Allows users to access relevant insights instantly instead of manual navigation
- **Cloud-native, scalable deployment within enterprise environments**
Builds and deploys AI systems on cloud infrastructure for high availability and scalability. Supports growing user demand without compromising performance or reliability.

Faster Service Turnaround

- ② Accelerated turnaround time for vehicle servicing by enabling quicker diagnosis and action

Faster Technician Onboarding

- ② Enabled faster onboarding of new technicians by simplifying access to complex technical knowledge

Increased Operational Efficiency

- ② Strengthened operational efficiency across workshops through streamlined diagnostic workflows

Standardized Diagnostics

- ② Standardized diagnostic processes across workshops, ensuring consistency in issue identification and resolution

Reduced Diagnostic Errors

- ② Minimized diagnostic errors by providing context-aware and guided recommendations

ABOUT CUBASTION

Cubastion helps global companies run their mission critical systems and operations while modernizing IT, optimizing data architectures, and ensuring security and scalability across platforms. Some of the world's largest companies and Indian Public Sector Undertakings trust Cubastion to deploy services to drive new levels of performance, competitiveness, and customer experience.

Over 18 years, Cubastion has built solutions that impact over 500+ million people around the globe working in different demographics across different cultures. Learn more about Cubastion at www.cubastion.com

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