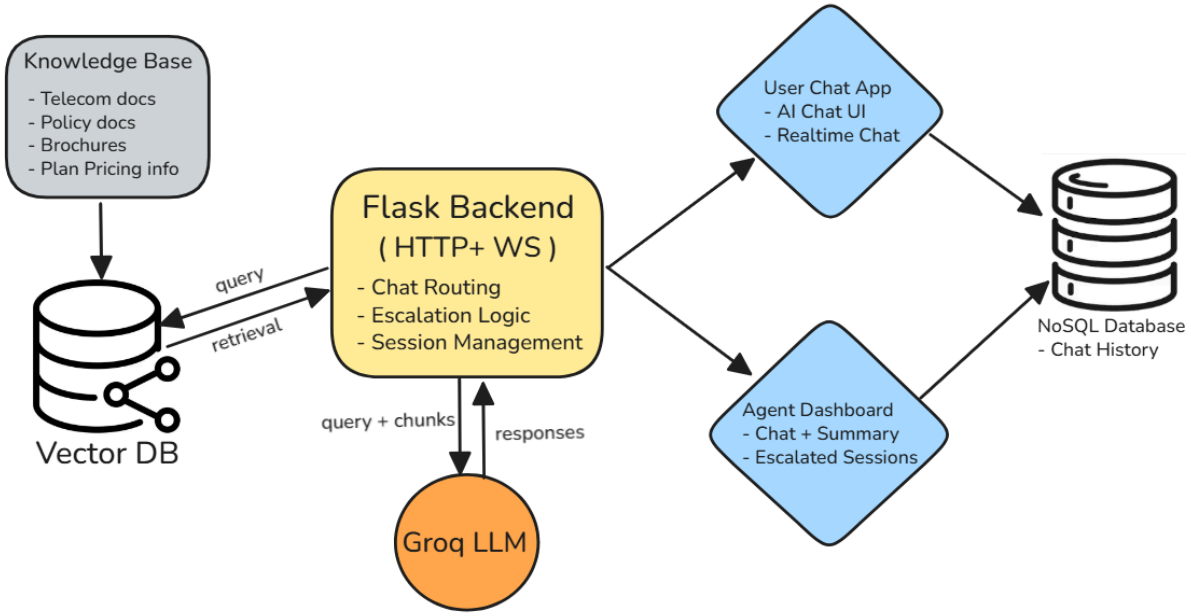
Team: Ctrl + Alt + Elite

AI-FIRST CUSTOMER SUPPORT



Proposed Solution

Our solution is an **AI-first customer support system** designed to transform how telecom users get help.

It combines the efficiency of an intelligent chatbot with the empathy and expertise of human agents, ensuring every customer gets the right assistance at the right time.

Core Idea

We are building a Retrieval-Augmented Generation (RAG)-based chatbot that can instantly answer most customer queries using the company's internal knowledge base and policy documents.

The system intelligently detects when a user's issue is complex, emotional, or policy-sensitive and automatically escalates the conversation to a human agent, without the user needing to ask for it.

Once escalated, the human agent joins the same chat session seamlessly, viewing the entire conversation history and a short AI-generated summary, allowing them to continue naturally and resolve the issue quickly.

Key Features

- **AI-Powered Chatbot:** Answers user queries using a telecom-specific knowledge base through RAG (document retrieval + LLM generation).
- **Rule-Based Escalation Engine:** Detects signals like low AI confidence, frustration keywords, long threads, or sensitive topics to trigger human handoff.
- **Seamless Human Handoff:** User stays in the same chat; a human joins instantly without any break or repetition.
- **Human Agent Dashboard:** Allows support agents to view chat context, AI summary, and continue the conversation.
- **Unified Chat History:** Both AI and human interactions are stored in one place for analytics and learning.
- **Continuous Improvement Loop:** System learns from human resolutions and user feedback to refine the AI and escalation rules.

Expected Impact

- Reduce human workload by handling 80–90% of repetitive queries automatically.
- Improve customer satisfaction by minimizing delays and frustration during escalation.
- Enable faster and more accurate responses using up-to-date telecom documentation.
- Lower operational costs while improving resolution quality and customer trust

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Feasibility

1. **Technical Feasibility**

- Uses Retrieval-Augmented Generation (RAG) and Large Language Models (LLMs) for intelligent, telecom-specific query handling.

- Rule-Based Escalation Engine ensures smooth detection of complex or sensitive cases.
- Seamless Human Handoff enables instant transition between AI and human agents without chat disruption.
- Cloud infrastructure supports scalability, reliability, and real-time performance.
- Continuous Improvement Loop allows the AI to learn and refine accuracy over time.

2. **Operational Feasibility**

- Easily integrates with existing customer support workflows and chat platforms.
- Human Agent Dashboard provides full chat context and AI-generated summaries for quick continuation.
- Unified Chat History centralizes all AI and human interactions, improving transparency and collaboration.
- Reduces manual effort by handling 80–90% of repetitive queries, allowing agents to focus on complex issues.
- Improves customer satisfaction by minimizing response delays and frustration.

3. **Economic Feasibility**

- Significantly lowers operational costs by automating the majority of customer interactions.
- Initial investment in AI setup and cloud services is balanced by long-term savings from reduced staffing needs.
- Improves resolution quality and customer trust, driving customer retention and brand value.
- Enables faster, more accurate support, increasing productivity and efficiency.
- Scalable AI services (API-based pricing) make the system cost-flexible and sustainable.
