

Case Study

EQUIPMENT SERVICE HISTORY REVIEW TIME SAVED FOR SERVICETRADE'S CUSTOMERS' FIELD TECHNICIANS WITH AWS AND GEN AI

softserve SERVICE  TRADE



OVERVIEW

ServiceTrade is a leading provider of customer service and field service management software. The organization serves fire protection and mechanical HVAC contractors. Its innovative platform helps businesses streamline operations, improve customer engagement, and increase revenue.

Since 2022, SoftServe and ServiceTrade have collaborated as strategic partners across a variety of software development projects. As the two planned a roadmap for 2024, AI — specifically Generative AI — became a focal point. With the evolving pace of this technology, SoftServe wanted to use its best technology ecosystem to accelerate ServiceTrade and its growth.

SoftServe worked with Amazon Web Services' private equity team to fully fund a Gen AI and Amazon Bedrock proof of concept (PoC) for ServiceTrade. This PoC created an environment for ServiceTrade to gather historical service data from different systems and facilitate ad hoc analysis of the compiled service records.



CHALLENGES

In the changing landscape of field service management, organizations recognize the imperative to enhance operational efficiency and deliver superior services. This realization has prompted the exploration of innovative solutions to address crucial business needs. Some of the industry's and ServiceTrade's identified needs include:



Efficient retrieval of asset equipment service history.

To streamline field service processes, there is a demand for an application to efficiently summarize the service history of asset equipment. The goal is to provide technicians with small and comprehensive summaries to drastically reduce the time spent searching for vital information, so they get to work faster and are better informed.



Automated equipment maintenance schedule extraction.

Recognizing the challenges associated with manual extraction of maintenance schedules from equipment manuals, ServiceTrade sought a solution that automates this process. The envisioned app includes a component capable of extracting maintenance schedules, specifying both the time and tasks involved.

Additionally, there is a component not highlighted in the solution but relevant for any kind of large language model (LLM) work — a prompt evaluation pipeline. This pipeline considers cost, processing time, semantic similarity, and the likelihood of hallucinations.

Solving ServiceTrade's business challenges through SoftServe's innovative AWS and Gen AI solution was expected to **significantly enhance the organization in five key ways:**

- 1 Customer operational efficiency.** By streamlining field service processes with efficient retrieval of equipment service history and automated maintenance schedules, there will be a substantial reduction in technician search time, boosting overall operational efficiency for ServiceTrade's customers.
- 2 Customer technician productivity.** Quick access to service request history and automated maintenance schedules allows ServiceTrade to help its customers' technicians work more productively, focusing on essential tasks rather than spending time on manual information retrieval.
- 3 Competitive edge.** Embracing innovative AI technology positions ServiceTrade as an industry leader, enhancing its competitive edge by offering advanced, end-to-end solutions for commercial service contractors.
- 4 Innovation catalyst.** A successful PoC serves as a catalyst for innovation within ServiceTrade, fostering a culture of experimentation and paving the way for future advancements in multiple lines of business.
- 5 Quality assurance.** The prompt evaluation pipeline ensures the effectiveness and quality of the solution through rigorous metrics, guaranteeing a high standard of customer service delivery and customer satisfaction, while protecting and ensuring the privacy of ServiceTrade's customers' data.



PLANNING

SoftServe, with its strong expertise in AWS solutions, stepped in to address ServiceTrade's challenges. After conducting a thorough analysis of ServiceTrade's business operations and infrastructure, SoftServe identified AWS — using Amazon Bedrock, LangChain, RDS with vector extension, EC2, and Streamlit — as the ideal solution.

The goal was to create a PoC using AWS to demonstrate the potential for improved cost-effectiveness and operational efficiency.

Specifically, the three business goals ServiceTrade wanted to accomplish through its partnership with SoftServe included:

1

Innovation and experimentation.

ServiceTrade desired to foster innovation and experimentation within its organization. It looked to SoftServe for innovative technologies and methodologies to push the boundaries of traditional approaches in the field service management software sector. The goal was to give ServiceTrade a competitive advantage.

2

Customer overall delivery.

ServiceTrade has a broader strategic roadmap that emphasizes the importance of efficient service delivery by its customers. ServiceTrade aimed to enhance its customers' overall delivery of ServiceTrade's field service management software, encompassing service, project, and sales platforms. With SoftServe's collaboration, the expectation was to improve the end-to-end delivery processes for its customers.

3

PoC as a start.





The PoC served as a crucial point to begin. It was a standalone project and a foundational step to align with ServiceTrade's larger business goals. The PoC provided a tangible demonstration of how innovative technologies, specifically Gen AI, are integrated into its services.

PROJECT






The ServiceTrade and SoftServe teams included the client's chief technology officer (CTO) and vice president of AI, and SoftServe's account executive, delivery director, project manager, business analyst, lead data scientist, and associate data scientist.

From the start, SoftServe provided ServiceTrade clear guidance about the boundaries and intent of the PoC. SoftServe also counseled ServiceTrade through the AWS funding process. Within weeks of the PoC kickoff, the client had already seen how quickly and efficiently SoftServe managed the project.

The success criteria for this project included:

-  Deployment of an LLM-enabled environment on Amazon Bedrock.
-  Equipment summaries that contain meaningful insights.
-  Complete documentation for the architecture, codebase, and operational procedures for the LLM-enabled environment.
-  Scalability for further implementation and functionality extension.

SoftServe initiated ServiceTrade's project with a collaborative approach, engaging closely with the client through design thinking sessions to identify high-value use cases and delineate the scope for PoCs. The PoC phase comprised of these key deliverables:




-  Comprehensive report about generated activities
-  Roadmap for a production and pilot project
-  Technical solution design and documentation
-  LLM-enabled environment capable of generating activities
-  PoC deployed to AWS EC2

The fast pace of the delivery allowed SoftServe to give ServiceTrade the summarizing portion of the project and extract the equipment maintenance schedule using a **retrieval augmented generation (RAG)** component.

RESULTS

Delivered in less than six weeks, the implementation of the first Gen AI solution opens the door for ServiceTrade to help its customers transform their operations by improving technician productivity and effectiveness.

Specific solution outcomes include a:

-  Validated approach of equipment history summarization through Gen AI, which **drastically reduces and optimizes the time technicians spend on it**. The anticipated reduction to review specific equipment history by field technicians enhances overall operational efficiency. This is vital because field technicians are ServiceTrade's customers' scarcest resources.
-  Validated approach for a recommended maintenance schedule from the manual using RAG. The automated maintenance schedule extraction **reduces the likelihood of errors and significantly enhances accuracy and adherence to those maintenance schedules**. Additionally, the recommended maintenance schedule is now aligned with other ServiceTrade solutions, such as "tasking."
-  Prompt evaluation pipeline.

SoftServe's client-centric and conversational approach also enabled ServiceTrade to be an active participant throughout the project. Consequently, the client understood the changes and will use the new capabilities of its AWS-powered platform for other already-identified use cases.

CONCLUSION

SoftServe's expertise in AWS and Gen AI solutions, combined with its empathetic and problem-solving approach, enabled ServiceTrade to overcome its challenges, paving the way for continued growth and success.

ServiceTrade co-founder and CTO Brian Smithwick states:

“

This PoC was a good use of time. SoftServe Gen AI data scientists are high quality, and we would recommend them without reservation. The model evaluation methodology developed by SoftServe is highly valuable, and we will use this methodology on future Gen AI projects. The RAG technique demonstrated in this PoC is already paying off, as we've already implemented it for some internal use cases. There's a clear line of sight to GA release of the asset summary feature in mid-2024, with development likely being performed by our internal team.”

Get insights from Smithwick in a Q&A conversation, where he explains ServiceTrade's Gen AI journey, outcomes, and lessons learned. To read the interview, [click here](#).

About SoftServe

SoftServe is a premier IT consulting and digital services provider. We expand the horizon of new technologies to solve today's complex business challenges and achieve meaningful outcomes for our clients. Our boundless curiosity drives us to explore and reimagine the art of the possible. Clients confidently rely on SoftServe to architect and execute mature and innovative capabilities, such as digital engineering, data and analytics, cloud, and AI/ML.

Our global reputation is gained from more than 30 years of experience delivering superior digital solutions at exceptional speed by top-tier engineering talent to enterprise industries, including high tech, financial services, healthcare, life sciences, retail, energy, and manufacturing.

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