

Case Study

UNRAVELING CUSTOMER SENTIMENTS AND FASTER INSIGHTS WITH AWS AND GEN AI



LUMINOSO

softserve

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OVERVIEW


Boston-based Luminoso Technologies operates in the competitive business intelligence industry. Luminoso offers innovative solutions to Fortune 500 businesses that help them better understand their customer sentiments. The organization wanted to use large language models (LLMs) and Generative AI (Gen AI) to enhance their users' ability to efficiently identify actionable insights when analyzing large volumes of unstructured customer data. The objective of this project was to create a solution that accurately interpreted customer feedback and provided real-time insights in less time. Solving the company's business challenge of reducing time-to-insight and improving customer satisfaction through customized engagements were expected to have several positive impacts on Luminoso's organization.


CHALLENGES


Luminoso sifts through an extremely high volume of customer data, often from complex data sources. Traditional methods were time-consuming and often failed to capture the full range of the organization's customer sentiments. Also, the data came in various languages from diverse sources, which increased the complexity of the analysis. To address these challenges and meet Luminoso's business needs, SoftServe and Luminoso's cloud partner, Amazon Web Services (AWS), **focused on:**

 **Technical complexity**
Enhance the platform's capabilities to shorten the time from data upload to insight extraction, which involved developing and integrating sophisticated algorithms. This required advanced expertise in machine learning (ML), natural language processing (NLP), and data engineering.

 **Scalability**
Ensure that the platform handled an increased volume of data without performance degradation. This was essential. The challenge lay in scaling the infrastructure and algorithms to maintain speed and reliability.

 **User experience design**
Create an intuitive user interface that effectively guides users through the analysis process. This demanded a deep understanding of user behavior and needs. This challenge included simplifying complex functionalities without compromising on the depth of analysis the platform provides.




 **Data privacy and security**
With the processing of sensitive data, such as customer feedback and call center transcripts, enhance the platform to include reinforcing data security measures to protect user privacy.

 **Integration with existing workflows**
Users may already have established workflows. The platform needed to seamlessly integrate with these, which required developing custom solutions or ensuring compatibility with a range of other business tools.

PLANNING






To undertake Luminoso's needs, the company planned to use artificial intelligence (AI) and natural language understanding through collaboration with SoftServe and AWS for guided data exploration through an AI-powered assistant. The strategy required the development of an advanced analytics platform capable of processing large volumes of data in multiple languages. The key players during this phase were Luminoso's data scientists and engineers, who tirelessly worked to build and optimize this platform.

The envisioned enhancements included, but were not limited to:

-  Intuitive user interfaces that guide the user through the data analysis process with greater ease.
-  Improved algorithms for faster processing and analysis of large datasets.
-  Enhanced visualization tools that allow users to quickly understand and act upon the insights extracted from their data.



The basic goal of these upgrades was to empower users to apply the full potential of the platform, making complex text analytics more accessible and actionable. This will cement Luminoso's position as a leader in the text analytics market.




Specific goals included:

-  **Platform enhancement**
Luminoso aimed to upgrade the existing capabilities of its cloud-based text analytics platform. The focus was to integrate more advanced features that enable in-depth natural language understanding.
-  **User guidance improvement**
Luminoso wanted to improve the guidance provided to users within the platform. This goal focused on user experience (UX) design, to make the platform more intuitive and user-friendly.
-  **Efficiency in insight acquisition**
A key goal was to reduce the time it took for users to go from uploading data to acquiring actionable insights. This involved streamlining the data analysis process and making it more efficient.
-  **Increase in user engagement and satisfaction**
By enhancing the platform's capabilities and user experience, Luminoso intended to increase user engagement, satisfaction, and, ultimately, retention.
-  **Market competitiveness**
By offering these upgraded features and improved efficiency, Luminoso also looked to maintain or enhance its competitive edge in the market.



Solving the business challenge of reducing the time-to-insight and improving customer satisfaction through customized engagements were expected to have several positive impacts on Luminoso's organization. **These included:**

-  **Increased efficiency**
By reducing the time-to-insight from hours to minutes, Luminoso could process and analyze more data within a shorter timeframe. This efficiency gain means that users more quickly make data-driven decisions, which is crucial in fast-paced environments, where the speed of information processing is a competitive advantage.
-  **Enhanced productivity**
With the time saved, Luminoso customers will focus on other critical tasks, such as strategizing and decision-making based on the insights gained, rather than spending excessive time on data analysis.

-  **Better decision-making**
Shorter time-to-insight leads to more timely decisions. In the context of customer feedback or social media exchanges, this means rapidly adapting to customer needs or addressing issues before they escalate.
-  **Improved user experience**
A platform that allows for quicker insights enhances the overall user experience, leading to higher user satisfaction. A user-friendly platform encourages higher adoption rates and more frequent use.
-  **Customized engagement**
By improving customer satisfaction through customized engagements, Luminoso's organization will build stronger relationships with its Fortune 500 customers. Personalized interactions are known to increase customer loyalty and lead to higher customer lifetime value.

PROJECT

As an AWS Premier Consulting Partner and with early access to Amazon Bedrock, SoftServe used new technologies on the market. This project was one of the first Gen AI projects SoftServe built on Amazon Bedrock. Luminoso and SoftServe teams were involved in the initiative from scratch. The SoftServe team was responsible for the engineering and AI development. Luminoso covered the business portions. The implementation of this project began with the integration of the Gen AI platform into Luminoso's systems. Luminoso clients provided access to customer data, which was then processed by Luminoso's platform. The platform visualized the results in an understandable manner, enabling its clients to easily interpret insights.

1

Assessment and planning

The project began with a comprehensive assessment phase. Business analyst (BA) workshops were conducted to thoroughly understand Luminoso's needs and the platform's existing capabilities. This collaborative approach ensured that the upgrade strategy was grounded in real user requirements and business objectives.

4

User experience enhancement

The user interface was improved to allow users to easily start with insight summaries, thereby, reducing the time-to-insight. The guided conversation feature ensures that even users who are not data experts navigate the analysis process and derive value from the platform.

2

Proof of concept (PoC)

Following the assessment, a PoC was developed. This stage involved close collaboration with AWS architects to create a prototype that uses Amazon Bedrock's Claude-2 for the back-end AI functionalities. The PoC served to demonstrate the feasibility of the enhancements and provided a tangible blueprint for what the production solution would entail.

5

Transition to production

With the successful completion of the PoC and the confirmed viability of the enhancements, the project is now in the transition phase to a full production solution. This involves scaling the solution, ensuring robustness and reliability, and integrating it seamlessly with the existing platform.

3

Development of AI-powered chat feature

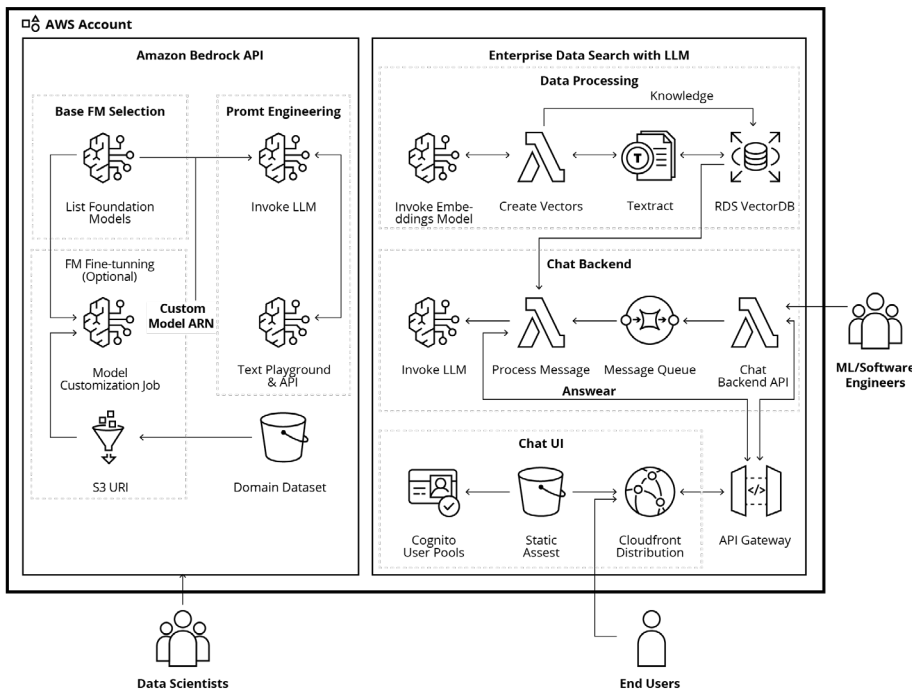
The primary upgrade involved the development of a new chat feature. This feature integrated a smart assistant that allows users to interact with the platform in a conversational manner. By using NLP and ML capabilities from Claude-2, the smart assistant understands user queries, provides insight summaries, and answers questions about the data.

Throughout the execution of the project, SoftServe's team maintained a focus on agile methodologies, allowing for iterative development, testing, and refinement based on ongoing feedback. This approach ensured that the final product was not only technically sound but also closely aligned with the end user's needs and the client's strategic goals.

TECH STACK

The tech stack used for this project was robust and advanced. It included ML algorithms for data analysis and NLP tools for understanding customer sentiments. Additionally, data visualization tools were used to present the results in a comprehensive and digestible format.

Specifically used were AWS, Amazon Bedrock, and LangChain.



EXPECTED RESULTS

The deployment of Luminoso's platform is expected to deliver significant improvements for its Fortune 500 clients. The platform will provide deeper insights into customer sentiments, reveal hidden trends, and identify areas for improvement. By using the insights provided by Luminoso, many of its clients are expected to report increased customer satisfaction and business growth.

Specifically, the results included:

- 10** Reduced manual work and time-to-insight from one to two hours to five to 10 minutes.
- +** Improved customer satisfaction through customized engagements.
- \$** Optimized ROI.

CONCLUSION

The success story of Luminoso Technologies shows the transformative power of innovative technology in business processes. By using AI and NLP, Luminoso has set a new benchmark in customer insight analysis, proving that with the right tools and approach, businesses will unlock valuable insights from their customer data.

About SoftServe

We are advisors, engineers, and designers who deliver innovation, quality, and speed — elevating and accelerating our clients' digital journeys.

Our approach is built on a foundation of empathetic, human-focused experience design that ensures value and continuity from concept to release.

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