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Case Study: Generative AI Powered Speech Analytics tool for a Bank

Client Overview:

The Bank, one of India's leading public sector banks, sought to elevate its customer service by addressing challenges in call center operations and customer feedback analysis. The bank aimed to enhance its **Customer Satisfaction (CSAT)**, **Net Promoter Score (NPS)**, and operational efficiency while ensuring compliance with regulatory standards.

Despite employing traditional methods to monitor agent performance and analyze customer feedback, Bank faced inefficiencies in data analysis, delayed issue resolution, and an inability to derive actionable insights from customer interactions.

Business Challenge:

Bank faced challenges in maintaining optimal customer service while managing an increasing volume of customer interactions, transaction processing, and account management tasks. Manual processes were time-consuming, prone to errors, and hindered the staff's ability to focus on providing personalized customer support. Additionally, the bank required a robust system to ensure compliance with banking regulations and enhance operational efficiency. The challenge was to integrate various operational workflows into a unified platform to improve customer service delivery, reduce administrative bottlenecks, and streamline compliance management.

Challenges faced:

1. **Fragmented Feedback and Monitoring:** Difficulty correlating specific customer issues with overarching NPS and satisfaction scores. Feedback from calls and surveys lacked actionable insights due to manual processing.
2. **Limited Sentiment and Compliance Analysis:** Absence of tools to accurately analyze agent-customer sentiment and adherence to compliance protocols.
3. **Time-Consuming Manual Processes:** Evaluating call center agent performance and generating quality assurance (QA) reports manually was inefficient and prone to inconsistencies.
4. **Lack of Data-Driven Insights:** No system to identify customer pain points or highlight training needs for agents to improve their service delivery.

Solution: Speech Analytics Tool for Automated Call Analysis

To address these challenges, the speech analytics tool was implemented to tailor for the process. This tool leverages advanced AI and natural language processing (NLP) capabilities to automate call analysis, generate actionable insights, and improve agent performance.

1. System Architecture:

- **Language Model (LLM) Integration:** Integrated a language model (LLM) into the solution to generate quality assurance (QA) scorecard automatically, based on predefined metrics such as

adherence to scripts, empathy, compliance with regulations, and recovery effectiveness by employing prompt engineering skills for optimal performance.

- **CRM Integration:** The solution integrates seamlessly with the CRM system, enabling cross-validation of information between the CRM records and the content of the agent's conversations. This ensures that the details provided by the agent during the call align with the data recorded in the CRM, helping to verify accuracy and consistency in the interactions. This integration enhances the assessment of agent performance by ensuring that all information is accurate and in sync across both platforms.

- **Evaluation:** Ragas framework assesses Retrieval Augmented Generation (RAG) and Retrieval pipelines. RAG enhances Large Language Models (LLM) using external data. Ragas evaluates metrics like faithfulness, answer relevancy, context precision, and context recall for a thorough assessment of RAG pipelines.

2. Components Utilized:

- **Prompt Template:** Prompt templates are predefined structures used to extract specific information from the generated call transcripts and classify interactions into different categories. These templates provide a structured format for the speech analytics tool to understand how to interpret the transcripts and extract relevant details, such as customer intent, payment commitments, or disputes.

  By using **few-shot examples**, these templates guide the language model to recognize patterns in the conversation, enabling it to classify the text accurately into predefined. The templates ensure that the system focuses on critical aspects of the interactions, making the process of data extraction and categorization more efficient and reliable.

- **Advanced Language Model:** A robust language model processes the call transcripts and generates automated feedback for improving the agent performance. It produces detailed responses that seamlessly align with the conversation's flow.

Implementation:

- **Data Integration and Analysis:** Historical feedback data, call recordings, and NPS scorecards were uploaded to the platform for analysis. Integrated the system with Bank’s CRM to validate agent-customer interactions for accuracy and compliance.
- **Sentiment and Tone Analysis:** The tool analyzed **500+ call recordings** to detect customer sentiments, agent empathy, and tone assertiveness. Specific keywords related to customer dissatisfaction (e.g., “long wait times,” “hidden charges”) and appreciation were identified.
- **Automated QA and Compliance Monitoring:** Leveraged **large language models (LLMs)** to automate the creation of QA scorecards, assessing adherence to scripts, compliance standards, and empathy in interactions.

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Technology Stack:

- Large Language Model (LLM): Generating automated QA score

Benefits to the client:

The implementation of the generative AI-powered speech analytics tool brought several key benefits to the client, transforming their collections process and driving significant improvements in operational efficiency:

- **Enhanced Agent Performance Monitoring**: With automated analysis and QA scorecards, the client could monitor agent performance more consistently and objectively. This minimized human biases in performance evaluation, enabling a more accurate understanding of each agent's strengths and areas for improvement.
- **Improved Compliance and Risk Management**: The tool's ability to analyze conversations for compliance with regulatory requirements helped ensure that agents adhered to industry standards during every interaction. This reduced the risk of regulatory breaches and associated penalties, safeguarding the client's reputation and finances.
- **Increased Recovery Rates**: By identifying areas where agents could improve their assertiveness or empathy, the solution empowered the client to provide targeted coaching. This led to improved customer handling, resulting in a more effective recovery process and increased payment collection rates.
- **Time and Cost Savings**: Automating call analysis significantly reduced the time spent on manual monitoring, allowing the client to reallocate resources to other critical tasks. This not only saved costs but also increased the speed of insights generation, enabling the client to quickly address any issues and improve overall productivity.
- **Actionable Insights for Strategic Decisions**: The detailed analysis provided by the tool allowed the client to gather insights into common customer issues, trends in payment disputes, and the effectiveness of different communication strategies. This data-driven approach enabled the client to refine their collections strategy and enhance their customer engagement approach.
- **Seamless Integration with Existing Systems**: The integration with the CRM system ensured that agent-customer interactions were cross-validated with recorded data, leading to a more accurate and holistic assessment of agent performance. This synchronization improved data integrity across platforms, streamlining the client's overall workflow.

By leveraging this advanced speech analytics tool, the client transformed their collections process, ensuring a higher level of performance, compliance, and customer satisfaction, ultimately driving better financial outcomes.

Conclusion: Elevating Conversational AI Experiences:

Our company has successfully developed and implemented a state-of-the-art speech analytics solution that revolutionizes the collections process within the banking domain. By integrating CRM cross-validation, we have provided our client with a powerful tool for automating the evaluation of agent performance. This solution ensures that every customer interaction is analyzed for accuracy, compliance, and effectiveness, resulting in improved collections outcomes and customer satisfaction. This case study exemplifies our commitment to advancing AI-driven solutions that optimize operational efficiency and set new standards for excellence in the customer experience service.