Case study

Leading FinTech Company Improves ATO Fraud Investigations Using GenAI on AWS

Overview

The customer is the Philippines' leading financial technology company, specializing in mobile payments and remittance services. As of June 2024, the company operates in the B2C segment and has reached 94 million users. The company, valued at $5 billion (as of August 2024), functions as a large-scale enterprise and plays a crucial role in building the country's digital financial ecosystem.

The Philippines' remittance market is poised for continued expansion, with a projected compound annual growth rate (CAGR) of 13.3% from 2022 to 2030. This growth trajectory underscores significant opportunities for customers to further scale their user base and enhance their digital offerings.

Client Background and Challenges

At a well-known company, its customer experience (CX) team raised various account takeover (ATO) fraud-related issues through channels such as apps, helpline, chat support, and email. The failure to respond to these requests impacted on the company's direct account usage and customer satisfaction. Therefore, posed a risk to the company's reputation and operational efficiency.

Addressing these challenges, Tech Mahindra actively worked with the customer fraud investigation team to enhance its fraud resolution and investigation processes. Our solution included components such as the fraud analyst dashboard, which monitors transaction dispositions in real time and flags suspicious account-takeover transactions for investigation. Additionally, the TechM and customer team developed a generative AI-powered conversational interface that enables fraud analysts to ask questions and identify and conduct detailed fraud investigations into suspicious account takeover transactions using simple business language.

The key objectives for the client in tackling these challenges included:

- **Automating Processes for Analysts:** Automating account takeover fraud detection and resolution processes to streamline operations and reduce the manual workload on analysts, allowing them to focus on more complex cases.
- **Reducing Data Issues:** Addressing issues of missing or incorrect data to ensure accurate fraud detection and resolution, thereby improving data integrity.
- **Reducing Resolution Times:** Reducing resolution times for customers from the current 5-day SLA to a more efficient 1-day SLA, improving customer satisfaction and trust in the service.
- **Reducing SLA Response Time:** Alongside reducing resolution times, decreasing overall SLA response time for quicker initial responses to fraud-related requests.
- **Efficient Handling of Customer Queries:** Integrating a chatbot to facilitate easier and faster interactions for CX agents, enabling them to handle customer queries more efficiently.

Our Approach and Solution

Tech Mahindra partnered with AWS to work closely with the enterprise to understand its current business processes and lay the foundation for the future-state solution, enabled by cutting-edge data engineering and AI/Gen AI-driven processing and analysis.

The cornerstone of Tech Mahindra's future-state solution, named EI Anti-Fraud Solutions, was built on AWS Step Functions to automate calculations and on AWS Bedrock (we experimented with the Llama and Claude Sonnet families of models) to orchestrate the conversational interface for fraud analysts.

Tech Mahindra's Enterprise Intelligence Fraud Solutions aims to automate and optimize fraud detection processes, improve data accuracy, provide underlying data and drivers of fraud, enable generative and agentic investigation, and enhance customer experience through faster resolution times and stronger security measures.

Our solution architecture leverages advanced AI capabilities and robust AWS cloud infrastructure and services to deliver a scalable and efficient system. The core components of the solution were designed to seamlessly integrate with operational outcomes, ensuring high performance and reliability.

TechM Enterprise Intelligence Fraud Solution Integration includes:

- **EKS Cluster and ECR:** Utilized for container orchestration and image repository management.
- **Load Balancer:** Ensured efficient distribution of network traffic across multiple EC2 instances.
- **PostgreSQL Database:** Integral part of the FraudSentinel platform, facilitating structured data storage and retrieval.
- **OpenSearch and DynamoDB:** Integrated with the FraudSentinel platform for search, analytics, and key-value data storage.

Key AWS Services Utilized

The integration of AWS services in Enterprise Intelligence Fraud Solution played a pivotal role in creating a robust, scalable, and efficient system tailored for fraud detection and resolution:

- **OpenSearch:** Acted as a powerful search and analytics platform, enabling efficient querying and data indexing. It also served as a vector database, enhancing the precision of fraud detection and investigative analytics.
- **Lambda Functions:** Facilitated API orchestration with high-performance invoke calls, seamlessly linking various components like DynamoDB and Bedrock for streamlined data processing.
- **RDS for PostgreSQL:** Served as a central data repository for structured data from critical systems such as billing, transactions, payroll, and finance. It also supported advanced use cases, such as sentiment analysis and DAAS workflows, ensuring data reliability.
- **DynamoDB:** Provided a fast and scalable key-value data store, specifically designed to manage case summaries and configuration parameters essential for fraud resolution workflows.

- **Elastic File System (EFS):** Offered scalable, distributed storage for documents and archives related to fraud investigations, ensuring file accessibility across multiple fraud use cases.
- **Simple Storage Services (S3):** Served dual functions, first as a repository for fraud-related images and documents, and as a static asset bucket for web application assets built using Amplify.
- **Data Transfer:** Supported secure and efficient data transfers between regions, with cost-effective mechanisms for cross-region data movement.
- **Bedrock Foundation Model (Claude Sonnet):** Enabled advanced AI capabilities, integrated with Cognito, Kendra, and SageMaker. It drove conversational interfaces and supported predictive analytics and anomaly detection for enhanced fraud prevention.
- **Amplify:** Streamlined the development of the web frontend, ensuring a responsive and user-friendly interface for fraud analysts and CX agents.

By weaving together these AWS services, Enterprise Intelligence Fraud Solution has created a seamless synergy between automated processes, real-time analytics, and AI-driven insights, ensuring an innovative approach to fraud resolution and prevention.

Business and Community Impact

Directly implementing the **Enterprise Intelligence Fraud Solution** addressed the customer's key challenges, delivering significant improvements in fraud detection, resolution times, and customer satisfaction.

Resolution of Speed and Operational Efficiency

- **ATO Resolution Time Cut by 95%:** Reduced disposition flagging from 5-7 days to under 15 mins, drastically improving fraud response cycles.
- **Near Real-time Investigations:** A custom UI integrated with Step Functions and Bedrock Q&A now triggers fraud investigations within ~5 minutes of report submission, enabling swift action across all CX channels.

Automation and Data Accuracy

- **100% Automated Validation:** Eliminated manual checks across 30 success criteria, ensuring consistent and accurate fraud detection.
- **Real-time Data Pipeline:** API-driven ingestion and SQL/Python workflows enabled live fraud monitoring and resolution.

Investigation Intelligence

- **Conversational Interface for Analysts:** Provided fraud teams with instant access to dispute and ATO data at both transaction and aggregate levels, improving insight depth and decision-making.
- **Optimized Case Management:** Streamlined fraud inventory handling, reducing operational bottlenecks and enhancing throughput.

Customer Experience Impact

- **+10% CSAT Uplift:** Faster resolution of ATO cases led to a 10%+ increase in customer satisfaction, restoring trust and reducing churn.
- **Conversational AI for CX Agents:** Enabled quicker, more accurate responses to fraud-related queries, improving first-contact resolution rates.

Overall, Enterprise Intelligence Fraud Solution has significantly reduced resolution times, improved data accuracy, and enhanced customer and operational efficiency, aligning directly with customers' strategic objectives.

About **Tech Mahindra**

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 146,000+ professionals across 90+ countries helping 1100+ clients, Tech Mahindra provides a full spectrum of services including consulting, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal, which recognizes global companies that are actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federation of companies. For more information on how TechM can partner with you to meet your Scale at Speed™ imperatives, please visit https://www.techmahindra.com/.

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