

CASE STUDY

# Tech Mahindra Streamlines High-Volume Payment Transactions Using Generative AI and AWS for a Leading Telecom Provider

## Overview

The client, a leading multinational telecommunications provider, faced significant challenges in managing over 235 million annual transactions through their Cash Management Engine (CME). Manual and semi-automated processes resulted in delays, reconciliation inefficiencies, data inconsistencies, limited reporting automation, scalability constraints, and increased operational costs. To address these challenges, Tech Mahindra implemented a generative AI-powered AWS solution that automated payment workflows, improved data accuracy and enabled real-time reporting. This strategic transformation enhanced processing speed while reducing manual effort and establishing a scalable, compliant, and efficient payment ecosystem.

## Client Background and Challenge

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The client, a leading multinational telecommunications provider, delivers broadband, fixed-line, mobile, and digital television services to millions of customers worldwide. With operations across key global markets, including multi-bank payment services across the UK, the client processes over 235 million financial transactions annually through their Cash Management Engine (CME). Given the scale, the client faced significant operational challenges:

- ▶ Managing high-volume, multi-bank payment services through a hybrid system of manual and semi-automated processes.
- ▶ Dealing with delays in payment reconciliation, processing, and inefficiencies in payment allocation and matching.
- ▶ Addressing the increasing operational costs and risks associated with manual interventions and data inconsistencies.
- ▶ Operating with limited automation in reporting and facing scalability constraints in existing workflows.

To address these multifaceted challenges, the customer partnered with Tech Mahindra to modernize the existing CME infrastructure through a generative AI-powered AWS cloud solution. Key focus areas included:

- ▶ Automating end-to-end payment processing workflows.
- ▶ Implementing intelligent data extraction and reconciliation.
- ▶ Enabling real-time transaction monitoring and reporting.
- ▶ Reducing operational costs.
- ▶ Improving accuracy in payment allocation.
- ▶ Ensuring regulatory compliance through standardized processes.

## Our Approach and Solution

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Tech Mahindra created a comprehensive AWS-based solution that integrates artificial intelligence with cloud automation to modernize the client's Cash Management Engine (CME). The solution is designed to handle over millions of annual transactions and transform manual processes into automated workflows by leveraging AWS's robust infrastructure and the Mistral-7B model. Key components of the solution included:

- ▶ **Intelligent Process Automation:** Leveraged Amazon SageMaker and the Mistral-7B model to automate data acquisition via SFTP, intelligent document parsing, and payment reconciliation. Additionally, Amazon Textract was utilized to enhance the accuracy of data extraction.
- ▶ **Streamlined Data Management and Storage:** Deployed a robust data pipeline using Amazon S3 for data ingestion, AWS RDS (Aurora PostgreSQL) for structured storage, and AWS Lambda for real-time data processing, optimizing performance for large-scale transaction handling.
- ▶ **Real-Time Reporting and Insights:** Created a comprehensive reporting framework using Amazon QuickSight and a user-friendly web portal, delivering real-time operational insights and accelerating decision-making for finance teams and reconciliation analysts.
- ▶ **Seamless SAP ERP Integration:** Enabled seamless integration with the client's SAP S/4HANA system, ensuring compatibility with existing finance operations.

# Technology Stack and Architecture

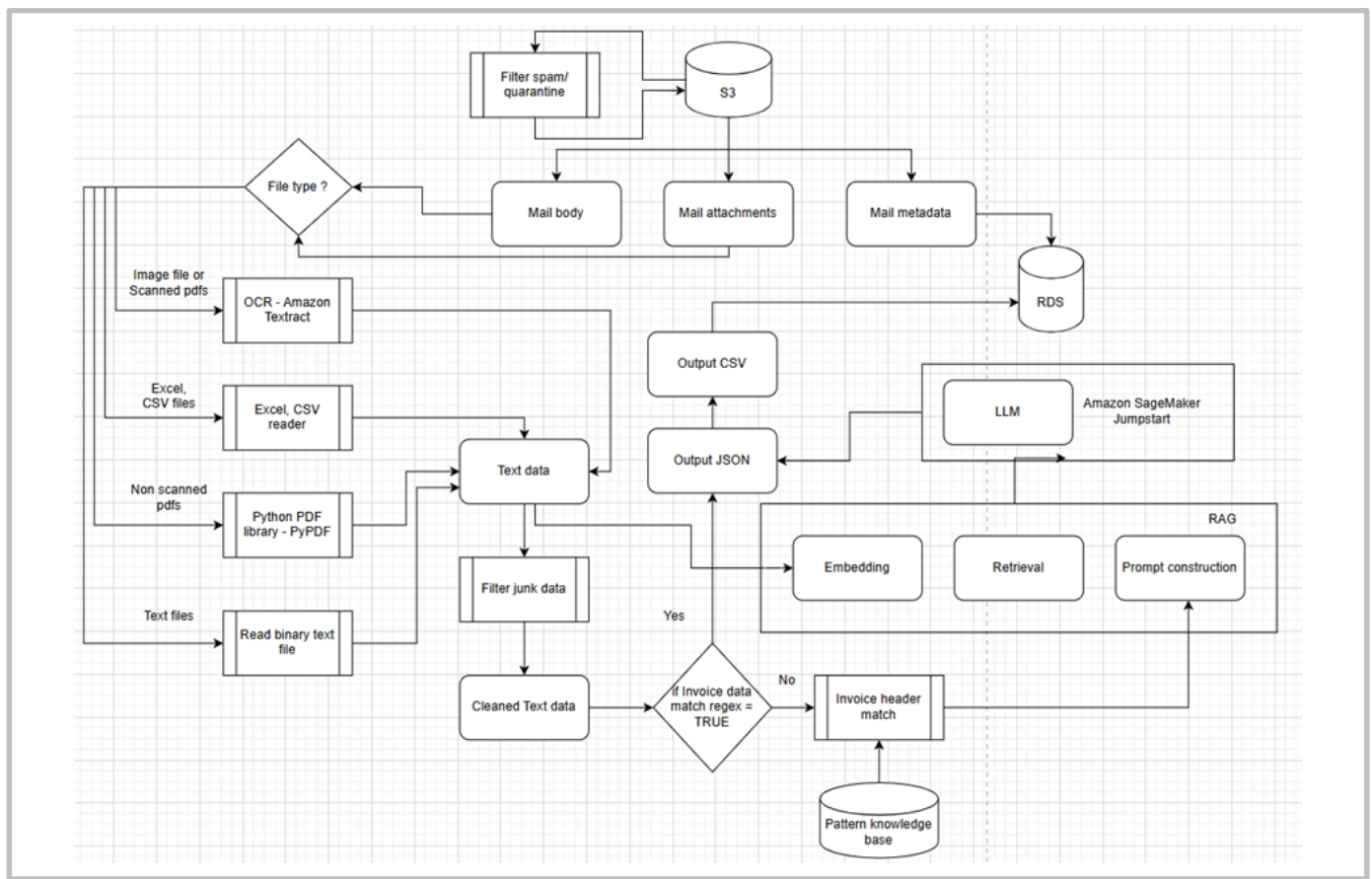


Figure 1: Logical Architecture

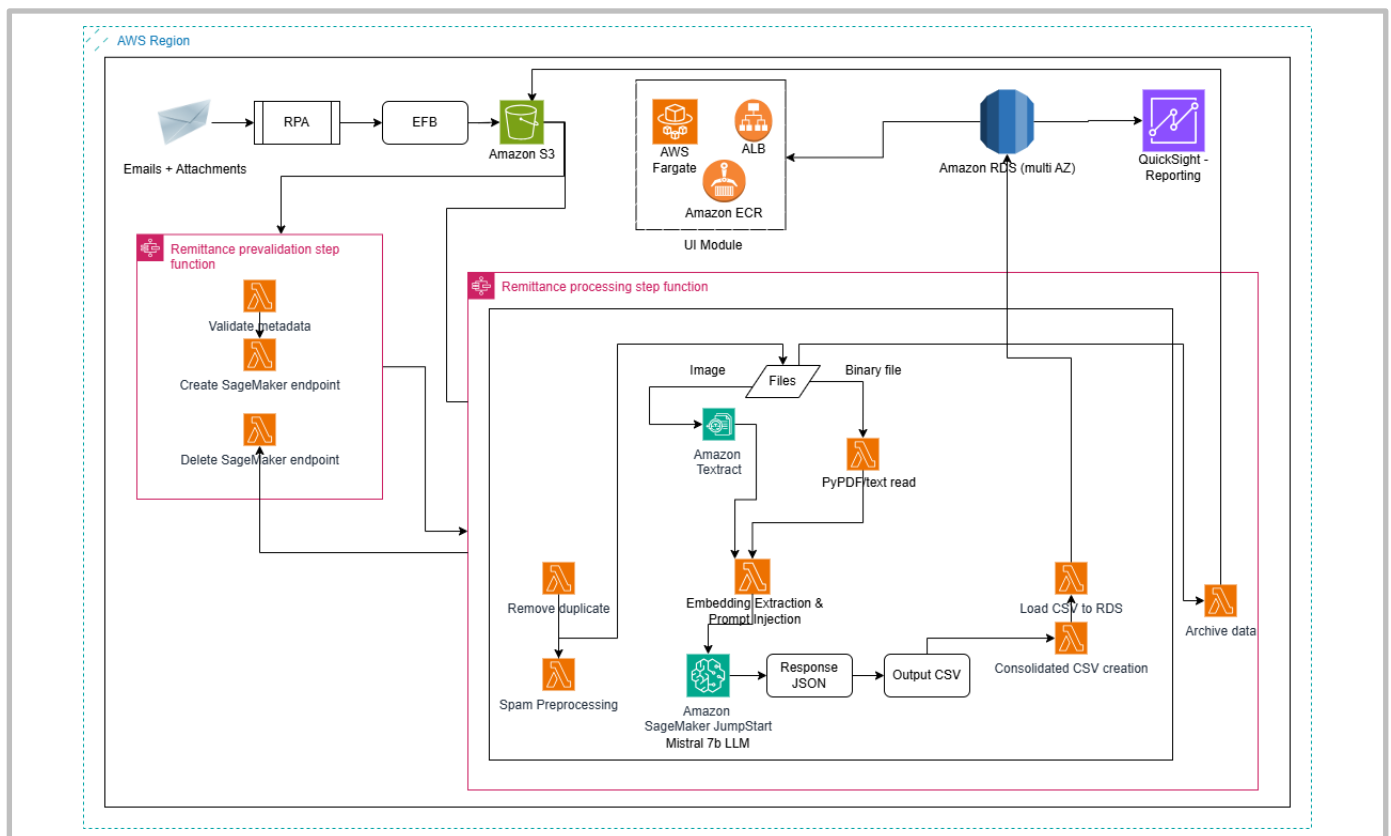


Figure 2: Technical Architecture



## Business and Community Impact

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The transformation delivered significant results, both in terms of scale and efficiency:

- ▶ **Reduced Manual Effort:** Automating payment workflows resulted in a 70% reduction in manual reconciliation efforts, enabling finance teams to focus on strategic tasks.
- ▶ **Cost Savings:** Enhanced processing accuracy and speed generated estimated annual savings of £100,000, improving overall financial performance.
- ▶ **Improved Accuracy and Compliance:** Data processing accuracy increased by 50%, while the solution ensured 100% compliance with customer data retention policies, which are critical in a highly regulated sector.
- ▶ **Operational Efficiency:** Real-time reconciliation across multiple bank accounts and centralized dashboards enabled faster resolution of payment discrepancies and better tracking.
- ▶ **Scalable and Secure Infrastructure:** Seamless SAP S/4HANA ERP integration and AWS-based scalability allowed the client to manage peak transaction volumes efficiently.
- ▶ **Strengthened Industry Position:** Through this strategic transformation, Tech Mahindra modernized the client's Cash Management Engine using AWS cloud and generative AI. The solution addressed the pressing need to manage over 235 million transactions annually while laying the groundwork for future scalability and innovation. This successful implementation offers a blueprint for large-scale payment processing transformations across the telecommunications industry.



## 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 148,000+ 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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