

## CASE STUDY

# Transforming Customer Support with an Agentic AI Platform for Safaricom's Zuri Bot

Mactores modernized Safaricom's Zuri Bot using an Agentic AI architecture on AWS to deliver faster, more reliable, scalable, and automated customer support across high-volume digital channels.



## Case Study Summary

- Deployed an Agentic AI architecture using AWS Lambda, Bedrock, DynamoDB, and API Gateway.
- Automated customer intent handling and improved response accuracy across channels.
- Enabled seamless scaling during peak traffic with event-driven, serverless components.
- Implemented fine-grained IAM, VPC isolation, encrypted data flows, and strong compliance controls.
- Added agent workflows, retrieval layers, and validation logic for safe and consistent interactions.

## About The Customer



Safaricom is Kenya's largest telecommunications provider, serving over 45 million customers. The company delivers mobile, broadband, and mobile-money services through M-PESA and operates high-volume customer engagement channels. Safaricom focuses on innovation, accessibility, and delivering frictionless digital support to its nationwide user base.





## Customer Situation

Safaricom's Zuri Bot handled millions of customer requests across WhatsApp, web, and mobile channels. As usage grew, manual processes and fixed logic limited speed, personalization, and accuracy. The system needed to better understand customer intent, reduce escalation volumes, and support dynamic reasoning across diverse queries such as balances, bundles, M-PESA issues, and account troubleshooting.

Safaricom required an architecture that automated decision-making, improved reliability, and ensured consistent performance at a national scale. Security and compliance were also critical, requiring strict IAM controls, encrypted communication, auditability, and safe handling of sensitive customer information. Safaricom sought a modern Agentic AI solution that could achieve real-time performance while integrating seamlessly with existing APIs and customer experience flows.





## Our Approach

Mactores implemented a modular Agentic AI design powered by AWS Bedrock to enhance reasoning, intent resolution, and contextual retrieval. AWS Lambda and API Gateway managed scalable request processing, while DynamoDB stored conversation context and agent-generated insights. Step Functions guided multistep agent workflows for validation, data lookup, and structured responses. VPC integration, KMS encryption, IAM boundaries, and token-scoped access ensured security. A retrieval layer using OpenSearch improved grounding and response accuracy. CloudWatch, X-Ray, and structured logs provided deep observability, enabling continuous tuning and operational visibility.

## Business Outcomes

Safaricom achieved faster and more accurate customer resolutions, reducing escalations and improving digital engagement. The enhanced Zuri Bot delivered consistent experiences across channels, resulting in shorter resolution times and higher user satisfaction. Automation streamlined support workflows, reducing operational overhead and enabling scale during peak demand. The Agentic AI platform provided predictable, transparent interaction patterns that improved trust and service quality.

## Technical Outcomes

The system supported real-time inference through optimized Bedrock integrations and low-latency Lambda orchestration. DynamoDB improved state management and performance across large-scale interactions. IAM guardrails, network isolation, and encryption ensured secure operations. Multi-agent validation, retrieval grounding, and structured output logic increased accuracy. Observability across logs, traces, and metrics enabled proactive debugging, drift prevention, and rapid optimization.

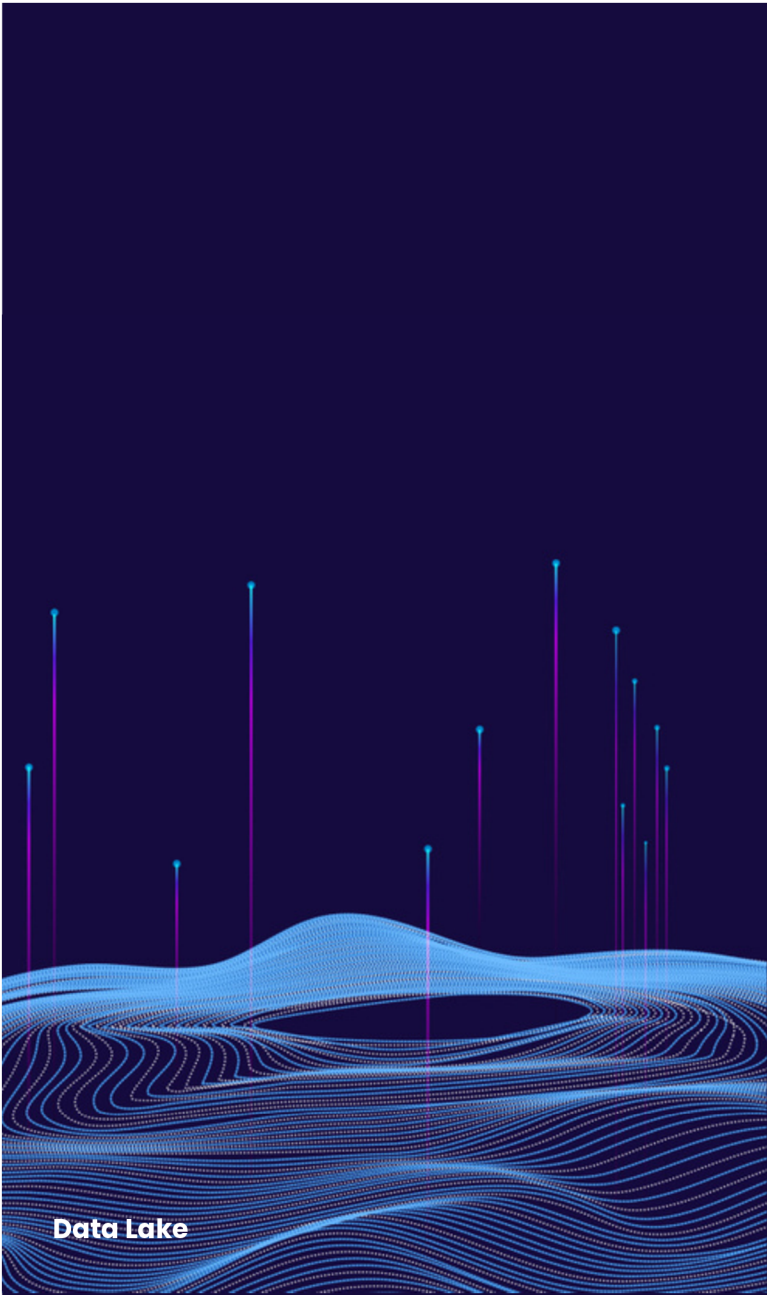


## Getting Started

Mactores began with discovery workshops focused on Safaricom's customer journeys, existing Zuri Bot flows, and integration needs. Benchmarking determined the best LLM configuration for cost, accuracy, and latency. Architecture blueprints defined agent workflows, retrieval logic, IAM boundaries, and validation steps. A pilot environment tested safety, security, and performance with synthetic data. Mactores delivered IaC templates, deployment pipelines, documentation, and operational guidelines, enabling Safaricom to scale the Agentic AI platform confidently and continuously enhance Zuri Bot's capabilities.



Our  
Solutions



Data Lake



Data Lake



Databases



Data Ops



Generative AI

## Our **Process**

### Digital transformation via assessments, migration or modernization

We work alongside your tech team to assess and strategize what you need and how to implement the right data solutions on time, on budget and with c-suite buy in.



#### **Assess**

- Discovery Automation
- Future State Assessment
- GAP Analysis
- End State
- Road Map
- TCO



#### **Migrate**

- Strategy
- Execution
- Migrate
- Migration Acceleration



#### **Modernize**

- StrategyFuture State
- Design
- Build
- Automate



# AWS Validated Competencies



# AWS Validated Service Deliveries



[www.mactores.com/lets-talk](http://www.mactores.com/lets-talk)

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