Kenya's Experience

- Shuru
- Ushuru GPT

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Kenya's Taxpayer - Service Chatbot on WhatsApp

Addressing the Service Challenge

The Bottleneck

Traditional channels face heavy seasonal demand, especially near the June filing deadline. Physical centres and contact centres are often congested with repetitive, high-volume requests.

The Solution

Moving routine self-service (PIN lookup, Nil returns, PRN generation) to WhatsApp —a platform taxpayers use daily —enabling 24/7 availability and reducing agent workload.

Who Does the Bot Support?



Individuals

Employment income earners filing annual or nil returns.



MSMEs

Micro/small enterprises utilizing eTIMS invoicing.



Landlords

Taxpayers managing Monthly Rental Income obligations.



Compliance & Payments

Users handling PINs, TCC applications, and PRN payments.

Conversational Gateway Technology

Built on the **Meta WhatsApp Business (Cloud) API**, the bot uses a deterministic logic model to ensure safety and predictability.

- **State - Machine Core:** Validated steps for journey accuracy.
- **Structured UI:** Menus and pickers avoid hallucination risks.
- **Safety - First:** Rule- based design for auditable tax transactions.



AI as a "Supervisory Watchdog"

AI is introduced as a **monitoring layer** rather than an answer generator. It observes conversations in real-time to protect the service experience.

- ✓ Detects stuck users or negative sentiment.
- ✓ Predicts SLA breaches in the ticket queue.
- ✓ Intervention: nudges a stuck user with the right menu or next step
- ✓ Triages issues to the correct human agents.



The Human - in - the - Loop Model



Agent Assistance

AI assists human officers by summarizing long conversations and suggesting replies based on taxpayer history.

- Proactive handoff for complex cases.
- Real- time SLA monitoring.
- Feedback loop for content improvement.

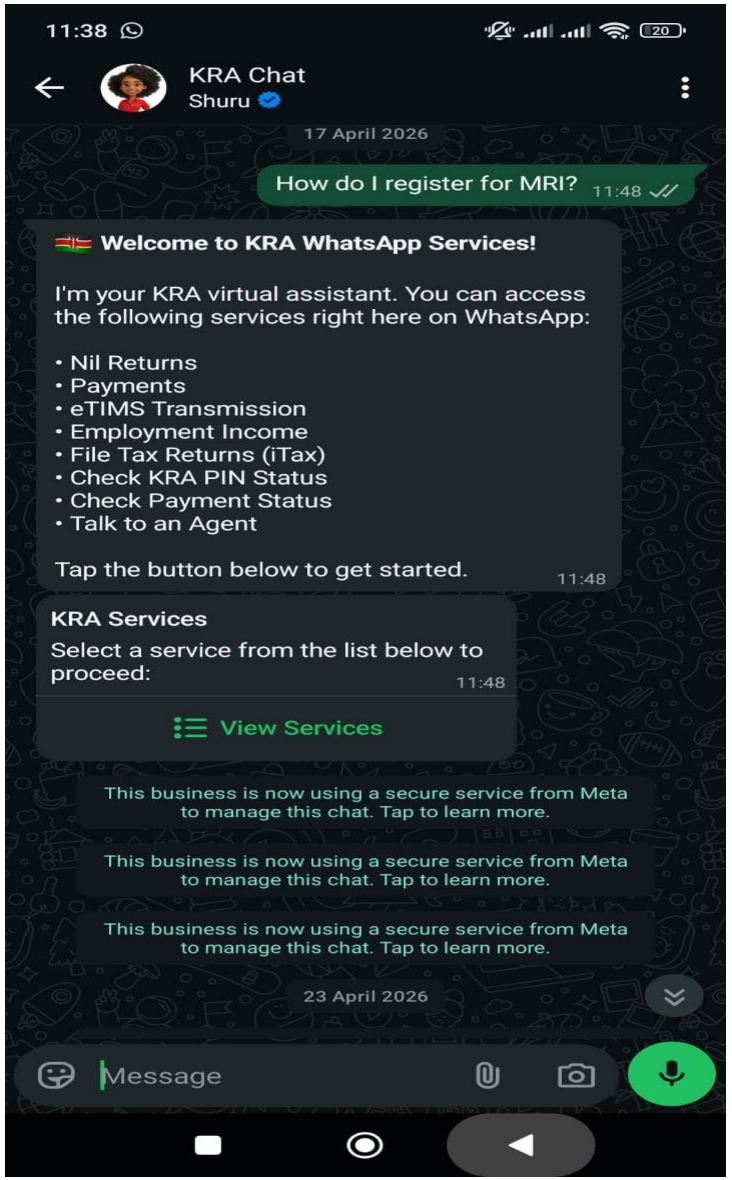
Knowledge and Data Base

Static Content

Menu text, guidance, and message templates are configuration-driven. Administrators update these without code changes to reflect policy shifts.

Live Admin Data

The bot fetches live records (PIN details, payment status) directly from KRA APIs. No personal data is cached locally, minimizing privacy risks.



The Typical Taxpayer Journey

Identification
Enter KRA PIN or ID

Verification
SMS OTP Validation

Service Choice
Menu Selection (e.g. PRN)

Processing
Live API Integration

Outcome
Confirmation / Receipt

Connection to DPI and Digital Systems



Identity

KRA PIN connected to National Registration Bureau



iTax & eTIMS

Direct integration for e-filing and invoicing.



Payments

M-Pesa STK push via Govt Payment Gateway (citizen)



Auth

OTP verification via SMS Gateway.

Ensuring Accuracy and Support

Control Dimension	Mechanism & Implementation
Accuracy	Deterministic flows powered by server - side validation against source systems.
Escalation	5- level SLA matrix with round - robin assignment to human officers.
Accessibility	WhatsApp's low data footprint reduces barriers for entry - level smartphones.
Privacy	Access gated by OTP; data retrieved on - demand with minimal retention.

Reflections and Strategic Risks

Key Lessons

Meeting taxpayers on familiar channels is a game - changer. However, **integration resilience** is harder than the "AI" itself.

- ❑ AI is best used for service oversight.
- ❑ Peak load resilience is critical.

Identified Risks

Digital exclusion for non- smartphone users and platform dependency remain high priorities for mitigation.

- ❑ Exclusion (Smartphone/Data bias).
- ❑ Third- party platform dependency.
- ❑ Governing the AL layer.

Simplified Digital Channel (WhatsApp) Performance

Analysis of Taxpayer Interaction, Messaging Campaigns, & Service Tickets

April – 25th June 2026

USER INTERACTIONS	RETURNS FILED	CAMPAIGN DELIVERED	RESOLVED TICKETS
13.95M	1.38M	1.04M	99.3%
Total Taxpayer Actions **Active**	Nil: **905.8k** IT1 (Emp): **476.4k**	Total Sent: **1.50M** Delivery Rate: **69.6%**	Total Raised: **313,760** Closed: **311,558**

TPE Messaging Campaign Performance

Programme	Contacts Sent	Delivered	Delivery Rate
TBE Messaging	598,311	439,344	73.43%
Compliance Messaging	842,391	567,635	67.38%
Debt Messaging	47,789	28,114	58.83%
KRA Staff to File	10,724	8,847	82.50%
Total Messaging	1,499,215	1,043,940	69.63%

AI capabilities in chat and reporting, while the inhouse solution is yet to deploy this capability

WhatsApp Service Tickets Breakdown

CUSTOMER CARE	CAMPAIGN TICKETS
300,249	13,511
95.7% of tickets	4.3% of tickets

RESOLUTION METRICS Total Raised: 313,760

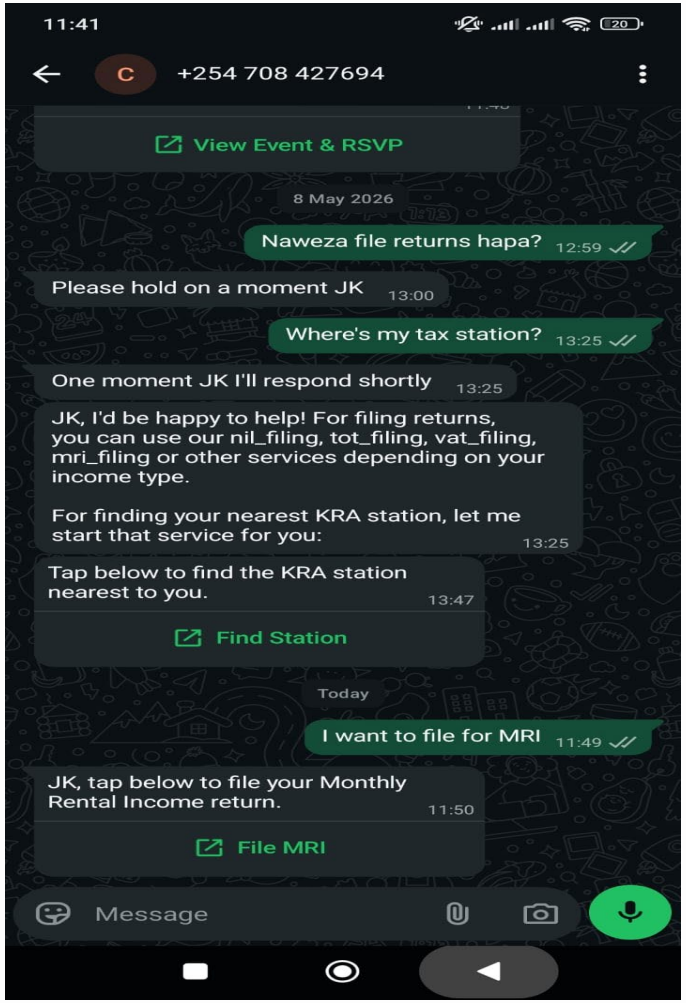
Closed Status 99.30%

Active / Unresolved 0.70%

964	1,123	115
Open	In Progress	Pending

AI powered Taxpayer Engagement Channels

Multi-modal digital assistant - deployed AI capabilities in chat and reporting





NLP ENGINE - UNSTRUCTURED CHAT

- Leverages dynamic Natural Language Processing for free text.
- Understands intent seamlessly from casual local phrasing.
- Intelligently triggers specific action buttons (e.g., File MRI).

RICH MINI-APPS

Interactive Webviews

- Provides deep, rich interface windows right inside WhatsApp.
- Handles complex payroll processing and multi-employee tools.
- Enables bulk spreadsheet uploads with seamless web flows.

INNOVATION IN TAX ADMINISTRATION

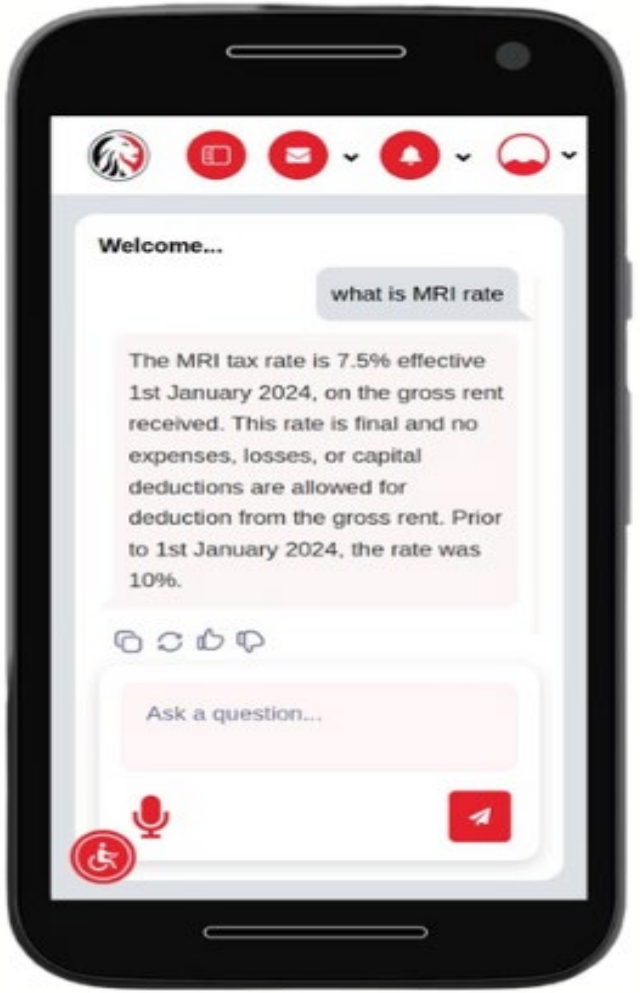


USHURU GPT

An AI-powered virtual tax assistant leveraging Generative AI, Natural Language Processing, and deep learning for instant, contextual tax guidance.

Introducing Ushuru GPT

- **Generative AI & NLP:** Built using advanced deep learning systems to interpret natural language queries.
- **24/7 Availability:** Delivers instant, accurate, and contextual responses regarding tax laws, policies, and obligations.
- **Dual-Audience Support:** Engineered to simultaneously assist external taxpayers and internal KRA staff.



Bridging Kenya's Tax Information Gap

The Problem

Complex, Scattered Tax Information

Taxpayers and KRA staff face a vast landscape of disconnected tax guidelines, leading to:

- Operational inefficiencies
- High levels of frustration and processing backlogs.
- Unintentional tax non-compliance.

Our Solution

Single Source of Verified Tax Truth

Ushuru GPT consolidates national legislation and policy guidelines into an interactive, real-time platform:

- Trained exclusively on KRA's official manuals.
- Delivers immediate, non-ambiguous answers.
- Transforms citizen-to-KRA digital interaction.

Driving Value for All Stakeholders

Taxpayers & Public

Instant 24/7 self-service access to tax queries. Empowers the public with direct, error-free DIY compliance capacity.

KRA Staff & Operations

Enables instant internal policy knowledge retrieval. Cuts boarding and training cycles while freeing human agents for complex audit tasks.

Strategic Goal

Boosts voluntary compliance by simplifying procedures. Integrates modern service channels to secure sustainable national revenue growth.

Projected Impact & Traction

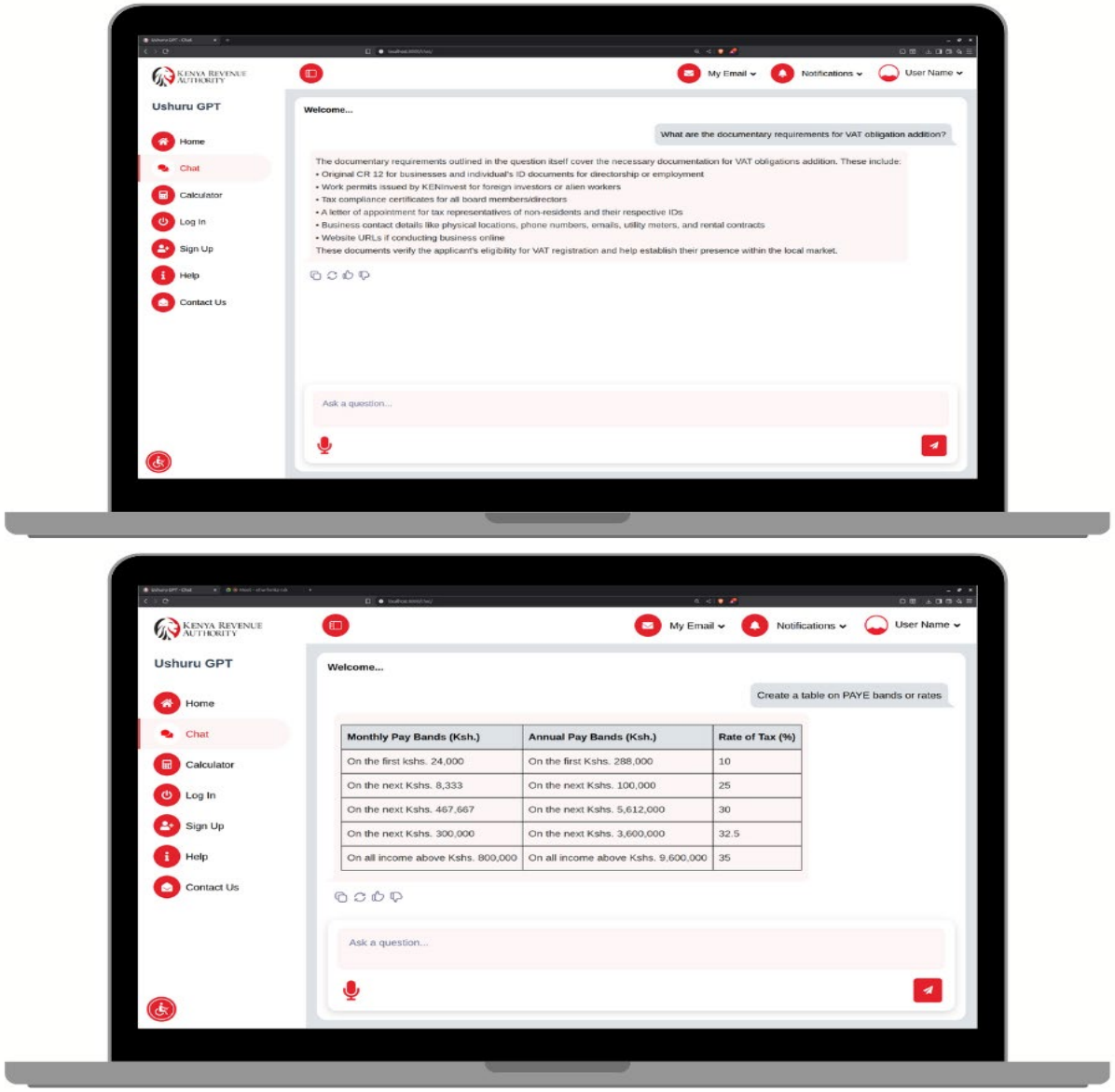
60% ⬇

Physical Walk -ins

- **Enhanced Revenue & Compliance:** Simplifies annual tax filing procedures to drive higher voluntary compliance.
- **Resource Redistribution:** Smooths helpdesk traffic peaks, allowing desk staff to focus on high-value audit casework.
- **24/7 Digital First Support:** Meeting tax queries with conversational ease transforms user relationships with tax compliance.

Conversational Outputs

- **Multi -Platform UI:** Adapts seamlessly to web browsers and mobile devices.
- **Structured Data:** Easily computes complex outputs like PAYE tax bands.
- **Natural Explanations:** Clarifies complex VAT and Advance Tax logic in simple terms.



Thank You

Modernizing service delivery and boosting voluntary compliance

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Questions?

Thank you for your participation.

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