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Terms of Reference

Development of a WhatsApp-Integrated Digital Participation Platform for a Citizen Engagement Research Study in Kenya

Issued by: Institute of Public Finance (IPF) and New York University (NYU)

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1. Background

The Institute of Public Finance (IPF) and New York University (NYU) are seeking a software developer individual or development firm, to build an intervention for its experiment on public participation in county budget formulation forums in select counties in Kenya. The study operates across 4–5 Kenyan counties and aims to test whether providing citizens with structured information and civic education tools, delivered via WhatsApp increases their engagement with Kenya’s constitutionally mandated public participation processes.

IPF is a Nairobi-based independent think tank working on public finance, budget transparency, and participatory governance. Public participation is among its core areas of work and seeks to build its own experience to build scalable solutions to improve public participation. This includes civic education curriculum that seeks to impart knowledge on Public Financial Management (PFM) to university through its Bootcamp program. IPF has also partnered with the Consul Democracy Foundation as local partner to lead the advocacy and deployment of its public participation software – the Consul Democracy. Therefore, the platform to be developed under this TOR may build upon, integrate with, or adapt elements of IPF’s existing tools, depending on the developer’s technical assessment of feasibility and efficiency.

The platform serves as the primary delivery mechanism for the study’s intervention and must support multiple user configurations, content delivery schedules, automated tracking, and AI-assisted civic education features, all within the WhatsApp messaging environment. The study requires the platform to be operational for piloting by the second week of July 2026 and fully deployed by late July 2026, ready for rollout in August 2026.

2. Objectives

The developer will design, build, test, and deploy a platform that enables IPF and the research team to:

- Deliver targeted informational package content (forum alerts, budget briefs and related forum agenda) to registered users via WhatsApp
- Deliver interactive civic education modules as structured, conversational WhatsApp lessons
- Provide an AI-assisted chatbot trained on civic education and public finance content that users can query within WhatsApp
- Support structured citizen input submission - issue prompts, guided preparation templates (a structured WhatsApp-based preparation exercise that helps users formulate specific issues to raise at public participation forums; see Configuration B, Section 3.2 for details)
- Track user engagement and content interaction at the individual level.
- Deliver post-forum feedback summaries (as messages or pdf documents, content to be shared by IPF) to a designated subset of users.

- Support two distinct platform configurations (detailed in Section 3) that can be assigned to different user groups

3. Platform Configurations and Features

The platform must support two user-facing configurations, referred to as **Configuration A** and **Configuration B**. Each registered user is assigned to one configuration. The configurations build on each other - **Configuration B includes everything in Configuration A plus additional features.**

3.1 Configuration A — Informational Package

Users assigned to Configuration A receive:

- **Verified forum alerts:** Automated messages informing users of upcoming public participation forums in their county or subcounty. Each alert includes: the date, time, venue, and a brief description of what will be discussed based on official public information provided by the county government. Alerts should be scheduled and sent automatically based on a content calendar managed by the IPF team.
- **Plain-language budget briefs:** Short, accessible summaries (1–2 WhatsApp messages with optional infographic attachments) of the county’s key budget-related or annual development plan proposals for the upcoming forum. These are pre-loaded by the IPF team and sent on a schedule tied to the forum calendar.

Configuration A is the simpler of the two configurations. It involves primarily one-way messaging (platform → user), with no interactive modules or chatbot access.

3.2 Configuration B — Educational Package (built on Configuration A)

Configuration B is a strict superset of Configuration A. Users assigned to Configuration B receive all Configuration A features (verified forum alerts and plain-language budget briefs) plus the following additional educational and participatory tools. The developer must build Configuration B by layering these features on top of Configuration A — the two configurations share a common informational base, with Configuration B adding the educational and participation facilitation components described below:

Educational Components

- **Interactive civic education modules:** A structured series of short lessons delivered via WhatsApp over a period of approximately 1-2 weeks before the public participation forum. Each lesson is designed to be completed within a single WhatsApp conversation session. The anticipated volume is approximately 5–8 outbound platform messages per lesson (content messages plus comprehension questions), with the total module series comprising 3–5 lessons. The developer should propose the optimal lesson structure, message volume per lesson, and delivery schedule in their quotation, along with the associated WhatsApp API costs. Each lesson consists of:
 - 2–4 infographics or short text messages explaining a key concept (e.g., how the county budget-making process works, what functions counties control, how to formulate specific budget demands, county revenue and taxation basics)

- Followed by 2–3 comprehension questions (multiple choice or short answer) that the user responds to directly within WhatsApp
- The platform records the user’s responses and tracks module completion and answers
- Content is adapted from IPF’s existing PFM Bootcamp curriculum and the county’s own public participation manuals and will be provided by IPF in draft form for the developer to integrate into the delivery system
- **AI-assisted civic education chatbot:** An LLM-powered chatbot accessible to users through the WhatsApp messaging interface, hosted on the platform backend that allows users to ask questions about public participation, county budgeting, health financing, and related topics. The chatbot is trained on a defined corpus of civic education and public finance materials provided by IPF (PFM Bootcamp content, public participation guidelines, county budget summaries, health financing briefs). Key requirements:
 - The chatbot must respond only from the training corpus and must not hallucinate or fabricate information
 - When the chatbot cannot answer a question from the available content, it must clearly state that it does not have enough information and suggest the user contact IPF or attend the public participation forum for more details
 - The chatbot should be able to proactively prompt users after each query they make with suggested related questions (e.g., “Would you like to know how the executive in this county makes the budget?”) based on previous interactions or the civic education module the user has just completed.
 - The developer should propose a message architecture for each lesson that optimizes WhatsApp API costs and stays within platform rate limits and should specify the anticipated message volume per lesson and associated costs in their quotation.
 - Conversations may be logged for monitoring and analysis purposes – this is to be confirmed by IPF upon the signing of the developer contract
 - The developer should propose the most cost-effective approach to implementing this (fine-tuned model, retrieval-augmented generation (RAG), or other architecture) and explain the tradeoffs in their proposal
- **Structured submission templates for public participation:** Guided digital prompts delivered through WhatsApp that help users prepare specific inputs for the public participation forum. For example, a series of prompted questions: “What is the most important issue you want to raise?” → “Which county department is responsible?” → “What specific action would you like the county to take?” Responses are logged in the platform.

Participation Facilitation Tools:

- **RSVP / check-in functionality:** Users can indicate their intention to attend an upcoming forum (RSVP) and confirm their attendance after the event (check-in). Both are simple WhatsApp interactions (e.g., reply “1” to RSVP, “2” to confirm attendance). Responses are tracked.

- **Issue logging:** Users can submit issues or priorities they intend to raise at the forum via a simple WhatsApp prompt. Submissions are timestamped and linked to the user's profile for analysis.

3.3 Post-Forum Feedback Delivery (applies to both configurations)

After each public participation forum, the IPF team will compile a structured summary of forum proceedings. The platform must support delivery of this summary via WhatsApp to a designated subset of users (not all users — the subset will be specified by the research team and shared with the developer). The feedback message may include text and/or an infographic attachment. The platform must be able to:

- Accept a list of recipient user IDs from the research team
- Send the feedback summary to those users only
- Track delivery and read status for the feedback message
- Support county-specific feedback content (different summaries for different county forums)

The developer should note that Feedback delivery is a platform capability used by the research team post-forum — not a feature users interact with directly.

4. Engagement Tracking and Data

The platform must track user-level engagement metrics across both configurations. These metrics are critical for measuring compliance with the intervention and understanding usage patterns. Required metrics include:

- Message delivery and read status: Whether each message was delivered and read (using WhatsApp's native read receipt functionality where available). This applies to both Configuration A and Configuration B users.
- Module completion: For Configuration B users: which civic education modules were completed, partially completed, or not started. Individual question responses should be logged.
- Chatbot usage: Number of chatbot interactions per user, topics queried. Whether or not conversation logs are to be tracked will be decided at a later stage.
- Submission template usage: Whether the user completed the guided submission template and what they submitted.
- RSVP and check-in: Whether the user RSVPed for the forum and whether they confirmed attendance.
- Issue logs: What issues were submitted, with timestamps.
- Overall engagement score: A composite metric per user summarizing their overall interaction with the platform.

Data must be exportable in a standard format (CSV, JSON, or equivalent) at any point during the study. A live monitoring dashboard is not required, but the developer must be able to provide engagement reports on request during the study period and build the system such that data extraction is straightforward.

5. User Registration and Management

The platform must support:

- User registration: For the current study, users are registered by the research team (not self-registered). The developer should provide a mechanism to bulk-upload registered users with their phone numbers,

county assignment, and configuration assignment (A or B). However, the platform should also support a self-registration pathway with administrator verification, so that in future deployments the platform can accommodate citizen-initiated sign-ups approved by an admin. The system must accommodate approximately 500 active users across 4–5 counties for the current study.

- **Configuration assignment and management:** The platform should allow the platform administrator to assign users to the various Configurations at registration and any later designations if need be. The assignment is permanent for the duration of the study. The platform must enforce the correct feature set for each user — a Configuration A user must not have access to Configuration B features at any point during the study.
- **County-specific content:** Forum alerts, budget briefs, and feedback summaries are county-specific. The platform must support content segmentation by county so that users receive only the content relevant to their county.
- **User profile data:** Minimal profile data (phone number, county, configuration assignment, registration date) stored securely. No sensitive personal information beyond what is necessary for platform operation.

6. WhatsApp Integration

The entire user experience must take place within WhatsApp or a WhatsApp-integrated application. Users should, to the best extent possible, not need to click external links, download separate apps, or leave the WhatsApp environment as much as possible. This is a design requirement based on evidence from similar interventions that users disengage when asked to use external platforms and also takes into account the prevalence of WhatsApp as a mobile application used by the vast majority of Kenyan citizens.

Technical requirements:

- **WhatsApp Business API:** The platform must integrate with the WhatsApp Business API (via a provider such as Twilio, MessageBird, 360dialog, or equivalent). IPF has an existing public WhatsApp channel; the developer should assess whether IPF’s existing WhatsApp Business verification can be leveraged to streamline API approval.
- **Two-way messaging:** The platform must support both outbound (platform → user) and inbound (user → platform) messaging. Outbound for content delivery, alerts, and feedback. Inbound for chatbot queries, module responses, submission templates, RSVP, and check-in.
- **Rich media support:** Ability to send images (infographics), documents (PDF briefs), and formatted text within WhatsApp messages.
- **Scheduling:** Ability to schedule messages in advance based on a content calendar (e.g., send civic education Lesson 1 on Monday, Lesson 2 on Thursday, forum alert 3 days before the forum).
- **Message templates:** WhatsApp requires pre-approved message templates for business-initiated conversations. The developer must handle the template submission and approval process with WhatsApp/the API provider. The research team will provide the message content; the developer formats and submits for approval.

7. Existing IPF Infrastructure

IPF has existing digital tools that may be relevant to this project:

- **PFM Bootcamp Curriculum:** IPF’s civic education curriculum, which has been delivered in workshop format. The content will be provided in document form for adaptation into WhatsApp-delivered interactive modules. The developer does not need to create the educational content — only to build the delivery and interaction infrastructure.
- **Consul Democracy:** An open-source digital participation platform. IPF is exploring whether Consul Democracy’s architecture could serve as a backend or be adapted for WhatsApp integration. The developer should assess this option in their proposal if they have relevant experience, but this is not a requirement — the developer may propose a custom-built solution or any other architecture they deem most efficient.
- **WhatsApp channel:** IPF operates an existing public WhatsApp channel for broadcasting updates. This confirms IPF’s existing verification with WhatsApp, which may facilitate API setup.

The developer is encouraged to propose the most efficient approach — whether that involves adapting existing tools, using open-source frameworks, building custom, or a hybrid approach. Cost efficiency is valued, and proposals that leverage existing infrastructure or modern development tools (including generative AI coding tools such as Claude Code, GitHub Copilot, or equivalent) to accelerate development are welcome.

8. Data Security and Privacy

The platform handles personal data (phone numbers) and research data (user responses, engagement metrics). The developer must ensure:

- Compliance with Kenya’s Data Protection Act (2019)
- Secure storage of all user data with appropriate access controls
- Data encrypted in transit and at rest
- Access restricted to authorized IPF and research team personnel only
- No sharing of user data with third parties under any circumstances
- Ability to delete all user data at the conclusion of the study if requested
- All data remains the property of the research team (NYU/IPF). The developer retains no rights to user data or engagement data after the contract concludes.

9. Timeline

Phase	Activity	Deadline
Contracting	Developer selected, contract signed, kick-off meeting	Mid-June 2026
Discovery	Technical assessment of IPF infrastructure, WhatsApp API setup, architecture design, feature specification sign-off	Week 1–2 (June)
Core Development	Build Configuration A + B features, chatbot integration, engagement tracking, user management, content scheduling system	Weeks 2–5 (June–early July)
Content Loading	Load civic education modules, forum alerts, budget briefs, chatbot training corpus (content provided by IPF)	Week 5–6 (early July)
Testing & Piloting	Internal testing, pilot with 10–20 test users in 1–2 counties, debugging, performance optimization	Week 6–7 (mid-July)
Deployment	Full deployment: bulk user registration, configuration assignment, county-specific content loaded for all study counties	Late July 2026
Live Operations	Platform live during study intervention period. Developer provides technical support, troubleshooting, and engagement data exports on request	Aug–Sep 2026
Post-Forum	Feedback summary delivery support, final data export, project close-out	Oct 2026

The total engagement period for the developer is approximately 5 months (June–October 2026), with the most intensive development work concentrated in June–July. During the live operations period (August–September), the developer provides technical support and troubleshooting on an as-needed basis, full-time support is not anticipated during August-October.

10. Deliverables

- **Technical architecture document:** A brief document describing the chosen architecture, WhatsApp API provider, hosting setup, chatbot approach, and integration with any existing IPF tools. To be approved by IPF and the research team before development begins.
- **Functional platform:** Fully operational digital participation platform with WhatsApp as the primary user-facing channel, supporting both Configuration A and Configuration B, all features described in Sections 3–6, engagement tracking, and feedback delivery pipeline.
- **Pilot report:** A brief summary of pilot testing results (issues found, fixes applied, user feedback from test users).

- **User management system:** A backend interface or process for bulk-registering users, assigning configurations, and managing county-specific content.
- **Chatbot:** Trained, tested, and deployed AI chatbot integrated into WhatsApp, with documented guardrails and fallback behavior.
- **Engagement data exports:** At minimum two data exports during the study (mid-intervention and post-intervention), plus ad hoc exports on request. Data in CSV or JSON format.
- **Technical support:** Responsive troubleshooting during the live operations period (August–September 2026). Response time for critical issues (platform down, messages not sending) should be within 4 hours during business hours.
- **Handover documentation:** At project conclusion, the developer provides full documentation of the platform architecture, codebase, API credentials, hosting configuration, and WhatsApp Business API account management procedures. The developer shall conduct a structured knowledge transfer to IPF's data science and technical team, including hands-on training sessions covering: platform administration, content updates, message template submission and approval, user management, data export, and routine troubleshooting. The developer remains available for technical support during the study period and for a reasonable transition period (minimum 30 days) after formal handover. The goal is for IPF to independently manage, maintain, and evolve the platform after the developer's engagement concludes.

11. Quotation Requirements

This is a grant-funded academic research project with a limited budget. We value cost efficiency and encourage proposals that leverage modern development tools and approaches (including generative AI coding assistants) to reduce development time and cost without compromising quality.

Please provide an itemized quotation that includes:

- Development costs: broken down by feature/component (Configuration A setup, Configuration B features, chatbot development, engagement tracking system, user management, feedback delivery pipeline)
- WhatsApp Business API costs: setup fees, monthly message costs (estimated for ~500 users over 2–3 months of active messaging), and any API provider subscription fees
- Hosting and infrastructure costs: cloud hosting, database, and any recurring infrastructure costs during the development and operational periods (June–October 2026)
- AI/chatbot-specific costs: model training or fine-tuning, API usage costs (if using a cloud-hosted LLM), and any ongoing inference costs during the operational period
- Testing and piloting costs
- Technical support during live operations (August–September): specify the support model (dedicated hours, on-call, retainer)
- Handover and documentation costs
- Any institutional overhead or management fees (stated separately)

In your proposal, please also address:

- Your recommended approach to the AI chatbot (fine-tuned LLM, retrieval-augmented generation, rule-based with LLM fallback, or other) and the rationale for your recommendation
- Your assessment of whether integrating with or adapting Consul Democracy is feasible and cost-effective, or whether a custom build is more appropriate
- Your experience with WhatsApp Business API integrations, particularly for programmatic two-way messaging at scale in East Africa or Kenya
- Your availability to begin work in early June 2026 and deliver a pilotable platform by mid-July 2026
- Relevant past projects, particularly any involving WhatsApp-based interventions, civic technology, or research platforms
- Your team composition for this project (lead developer, any additional personnel)

12. Evaluation Criteria

Proposals will be evaluated based on:

Criterion	Weight	Notes
Technical approach and feasibility	30%	Architecture, chatbot approach, integration strategy
Cost	25%	Total cost and value for money
Timeline feasibility	20%	Ability to deliver a pilotable platform by mid-July
Relevant experience	15%	WhatsApp integrations, civic tech, research platforms
Post-deployment support and handover	10%	Support model, documentation, IPF ownership

The budget available for this engagement is capped at \$8,000-10,000 inclusive of all development, API, hosting, and knowledge transfer costs. Proposals that demonstrate cost efficiency while meeting the functional requirements will be evaluated favorably. Developers should also view this as a long-term engagement with strong potential for scale-up with pathways available from donors for additional resources should the pilot platform be successful at achieving the intended outcomes of the platform.

13. Platform Ownership and Knowledge Transfer

This engagement is for the development and transfer of a digital product, not the procurement of a software-as-a-service (SaaS) subscription. Upon completion of the engagement:

- IPF shall own the platform, including all source code, configurations, training data, and associated documentation.



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- The developer shall transfer all code repositories, API credentials, hosting account access, and administrative credentials to IPF.
- The developer shall conduct structured knowledge transfer sessions with IPF's technical team covering platform administration, content management, user management, WhatsApp API operations, data export, and routine maintenance.
- IPF may modify, extend, redeploy, or scale the platform for future use without further authorization from or payment to the developer, unless the platform incorporates licensed third-party components (which the developer must disclose).
- The developer retains no proprietary rights over the platform or its outputs after handover, except for any pre-existing intellectual property disclosed prior to contracting.

Proposals should clearly identify any third-party tools, libraries, or services that would require ongoing licensing fees after the developer's engagement ends, so that IPF can assess the long-term cost of ownership.

14. Submission Details

Proposals should be submitted on or before **15th June 2026** to hr@ipfglobal.or.ke. Should you have any technical or logistical questions you can email them to the team via the same email.