Group 3 Projects Proposal

1. Digital Umuganda Coordination & Impact Tracker

Problem Statement

Currently, Umuganda is coordinated mainly through physical meetings led by local leaders. This approach creates several challenges:

- Lack of accessible information – Residents don't have an easy way to know where to gather, what tools or materials to bring, or the exact activity details.
- No centralized attendance tracking – It's hard to record who participated and what contributions were made.
- Difficulty measuring impact – There is no consistent system for reporting results (e.g., number of trees planted, kilometers of road cleaned, houses built).
- Paper-based records – Heavy reliance on hard copy documents leads to inefficiencies, waste, and difficulty in storing/retrieving data.

Proposed Solution

Our proposed solution will provide a digital platform (mobile + web) to coordinate Umuganda activities, track participation, and measure impact.

Core Features:

1. User Accounts & Roles

- Community Members:
  - View upcoming Umuganda events in their area.
  - RSVP and confirm attendance.
  - Make donations (money or materials).

- ○ Submit feedback and suggestions.
- Local Leaders:
  - ○ Create and publish Umuganda events.
  - ○ Assign tasks to participants.
  - ○ Record attendance.
  - ○ Access a dashboard with community statistics.

2. Event Listings

- Event details with location map.
- Date and time.
- Required tools, materials, or resources.
- Expected number of participants.

3. Impact Tracking

- Leaders log results after each event (e.g., "Cleaned 2 km of road, planted 150 trees").
- Dashboard displaying cumulative results for transparency and motivation.

4. Notifications

- Event reminders sent to participants.
- Push notifications for app users.
- SMS alerts for areas with limited internet access.

5. Recognition System

- Points or badges for active participation.
- Leaderboards for neighborhoods to encourage friendly competition.

Objectives & Success Criteria

Objective	Success Metric

Streamline Umuganda coordination	50% of target sectors using digital system by Week 4
Track participation in real-time	80% attendance logged digitally (vs. paper)
Prove concept viability	3+ local leaders endorse MVP after testing

Milestones & Timeline

Given that our project selection is still pending facilitator approval, we've intentionally avoided setting exact timelines at this stage. We believe premature scheduling could lead to unrealistic expectations for either potential project.

However, we're fully prepared to:

- Immediately finalize a detailed timeline within 24 hours of project confirmation
- Align milestones with the selected project's complexity (Umuganda vs. Traffic platforms require different technical approaches)
- Prioritize transparency by sharing weekly progress reports once work begins

Feasibility & Risks

	Status Mitigation

Feasibility Factor	
SMS coverage in rural areas High	Partner with MTN/Airtel for free SMS bundles
Leader tech adoption Medium	Pre-recorded tutorial videos (WhatsApp)
Data migration from paper Low	Manual entry by interns (stopgap)

Top Risks:

- SMS costs explode → Cap messages/user/month
- Leaders resist change → Identify "champion" sectors first
- No internet for dashboards → SMS-based data exports

2.   Project Idea: Smart Traffic & Road Condition Reporting Platform

Problem Statement

In Rwanda's rapidly growing cities, commuters lose countless hours daily to unexpected traffic disruptions. During peak hours, drivers only discover road closures, accidents, or severe congestion after already trapped in gridlock. While global navigation apps exist, none integrate localized crowd-sourced reports with real-time data tailored to Rwandan road networks. This lack of a centralized, community-powered platform forces:

- Drivers to waste fuel and productivity in preventable jams
- Public transport to operate inefficiently due to blind spots
- Emergency vehicles to face delayed response times
- Urban planners to make decisions without granular traffic data

Core Features

1. Live Traffic Map

- Google Maps API or OpenStreetMap integration.
- Color-coded roads based on traffic speed (green = smooth, red = heavy).

2. Community Reports

- Users can post updates about jams, accidents, roadworks, or checkpoints.
- Photos & short text descriptions.

3. Route Suggestions

- Recommend alternative routes in real-time.
- Option to avoid roads with current reports.

4. Notifications & Alerts

- Push or SMS alerts for your frequently used roads.
- Heavy traffic ahead" warnings before you enter a jam.

5. Traffic Statistics Dashboard

- Historical data on most congested areas & times.
- Could help urban planners and taxi companies.

Objectives & Success Criteria

Objective	Success Metric
Reduce driver blind spots	30% decrease in "surprise jams" (user survey)
Validate crowdsourcing	100+ reports/day in Kigali
Prove scalability	API handles 1,000 concurrent users

Milestones & Timeline

Given that our project selection is still pending facilitator approval, we've intentionally avoided setting exact timelines at this stage. We believe premature scheduling could lead to unrealistic expectations for either potential project.

However, we're fully prepared to:

- Immediately finalize a detailed timeline within 24 hours of project confirmation
- Align milestones with the selected project's complexity (Umuganda vs. Traffic platforms require different technical approaches)
- Prioritize transparency by sharing weekly progress reports once work begins

Feasibility & Risks

Feasibility Factor	Status Mitigation

Real-time map accuracy	Medium	Start with static "verified" reports only
User-generated spam	High	Mandate phone # verification
Battery drain High		Throttle location pings to 5-min intervals

Top Risks:

- Google Maps API costs → Switch to Mapbox after launch
- False reports cause chaos → "Report credibility" upvote system
- Low driver uptake → Partner with Kigali Bus to pre-install app