



TRAFFIC RELIEF



Key Partners

- **Ministry of Transport (Egypt)** – traffic planning, road authority coordination
- **General Traffic Administration (Egyptian Police)** – congestion management and enforcement
- **Ministry of Communications and Information Technology (MCIT)** – IoT infrastructure and data transmission
- **Ministry of Environment & Egyptian Environmental Affairs Agency (EEAA)** – air quality monitoring and validation



Key Activities

- Monitoring CO concentration and environmental indicators along major roads
- Classifying traffic conditions (free, semi-congested, congested) in real time
- Predicting congestion during peak Egyptian traffic hours (morning, afternoon, night)
- Automatically activating alternative “green roads.”



Key Resources

- Low-cost environmental sensors (MQ-7, dust, light, temperature)
- Microcontroller-based control system and servo gate mechanism
- Mobile application and centralized data platform
- Wireless communication infrastructure



Value Propositions

- 1. Indirect Camera-free traffic detection**
 - Detects traffic congestion using environmental indicators such as carbon monoxide concentration, dust density, light intensity, and temperature trends.
 - Eliminates the need for cameras, preserving privacy and reducing installation and maintenance costs.
- 2. Predictive Congestion Management**
 - Uses real-time sensor data combined with historical traffic patterns to predict congestion before full buildup occurs.
 - Enables early intervention by activating alternative routes and issuing advance warnings to drivers.
- 3. Cost Effective and Scalable Design**
 - Relies on low-cost, energy-efficient sensors and simple mechanical actuation.
 - Modular architecture allows easy expansion across bridges, tunnels, and urban road networks throughout Egyptian cities.



Customer Relationship

- 1. Real-Time Information Access**
 - Users receive continuous, real-time updates on traffic conditions, alternative route availability, and congestion alerts through the mobile application.
 - This direct information flow builds user trust and encourages informed driving decisions.
- 2. Proactive Notification System**
 - Automated push notifications alert drivers before congestion reaches critical levels.



Channels

- 1. Mobile Application Platform**
 - The primary channel for delivering real-time traffic status, congestion alerts, green-road availability, and predictive congestion notifications directly to drivers.
 - Ensures fast, accessible communication between the traffic system and road users.
- 2. Roadside Digital Infrastructure**
 - Visual indicators and smart traffic signs installed near congested zones display system decisions, such as green road activation.



Customer Segments

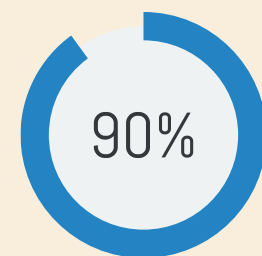
Primary Customers (Immediate Focus)

- 1. Daily Urban Commuters**
 - Private car drivers who regularly travel through congested roads, bridges, and intersections in major Egyptian cities.
 - Benefit from real-time traffic status, predictive congestion alerts, and alternative route guidance.
- 2. Public Transportation Operators**
 - Bus, microbus, and ride-hailing drivers who rely on efficient routes to reduce travel time and fuel consumption.
 - Use the system to avoid high-emission congestion zones and maintain reliable service schedules.
- 3. Traffic Management Authorities**
 - Local traffic departments and the Egyptian Ministry of Transport.
 - Utilize system data to monitor congestion patterns, support traffic regulation decisions, and enhance urban mobility planning.



Cost Structure

- Direct system deployment (~60%)
- Installation of smart traffic control units for government and municipal roads.
- Mobile application & data subscriptions (~25%)
- Real-time traffic status, congestion predictions, and notification services.
- Maintenance and technical support (~10%)
- Periodic calibration, software updates, and system health monitoring.
- Data analytics & reporting services (~5%)
- Traffic and air-quality data insights for urban planning and research.



90% locally sourced materials minimize supply chain risks.



Revenue Stream

1. System Deployment Contracts (60%) Installation of the smart traffic management system for government bodies and municipalities, including sensors, control units, servo-based road gates, and initial calibration.	3. Maintenance & Technical Support (10%) Annual service contracts covering sensor recalibration, system updates, and on-site maintenance to ensure long-term reliability.
2. Mobile Application & Data Services (20%) Subscription-based access for traffic authorities to real-time congestion status, predictive congestion alerts, and historical data analysis through the mobile platform.	4. Data Analytics & Reporting (10%) Aggregated, anonymized traffic and pollution data reports provided to urban planners, research institutions, and environmental agencies for infrastructure planning.