

Urban Smart Logistics and Delivery System

Background:

The new wave of e-commerce and consumers demanding faster delivery has considerably spiked urban congestion, carbon emissions, and general mobility in the modern urban environment. Traditional logistics models often mean several providers take different routes, adding not only to urban congestion but also reducing the efficiency of the delivery. Minimising the environmental and societal impact of these services requires more streamlining and integration within the logistics system.

The Urban Smart Logistics and Delivery System will provide a single platform that will integrate various logistic providers for route optimization and the usage of smart lockers. This system will help reduce traffic congestion, further enhancing the efficiency and making it easier on the customer by facilitating convenience points for retrieving packages. The system will also have special provisions in place to handle prescription-based medicine deliveries, considering recent interest in this segment, especially within city limits, where verification of the prescription and authentication of the customer takes place at the time of delivery.

Objectives:

- Integrating different providers in one system will facilitate centralization and smoothen urban logistics.
- The effort would involve route optimization, reducing congestion and emissions within the urban environment.
- Introduce smart lockers that offer contactless drop-offs of packages, reducing the number of failed delivery attempts.
- Enhance customer convenience in accessing deliveries from various locations of urban smart lockers.
- Prescription verification and secure customer verification through OTP or codes would make medicine delivery safe and compliant.
- Provide for efficient last-mile logistics, particularly in urban high-density settings.

Scope:

The Urban Smart Logistics and Delivery System shall optimise the improvement of urban deliveries through focusing on the following key functionalities:

- Delivery of Packages: The system shall facilitate efficient delivery through route optimization for drivers, reducing delivery time while freeing up traffic flow.
- Management of Delivery Drivers: Delivery driver management involves assigning optimised routes to minimise the time taken while reducing vehicle congestion.
- Smart Lockers: Installation of smart lockers across select urban locations for customers to pick up their packages at a time convenient to them, reducing the need for reattempted deliveries.
- Logistics Company Integration: The platform shall integrate with multiple logistics providers so as to ensure that the delivery processes are coordinated, reducing crisscrossing of delivery routes across the city.
- Customer Management: The customer will be informed of the status of the delivery and will open the intelligent lockers using either the secure code or QR code to take out the package.
- Medicine Delivery Module could be implemented that can cater to:
 - Prescription Verification: Prescription verification in case of medicine delivery at the doorstep for the customer.
 - Customer Verification: OTP or Security Code-based identity verification at the time of releasing prescription medicines to the customer.