**PUBLIC TRANSPPORT OPTIMIZATION:Phase1**

Public transport optimization is the process of improving the efficiency and effectiveness of public transportation systems. It involves designing and implementing strategies to improve the quality of service, reduce costs, and increase riderships.

There are several optimization techniques that can be used to improve public transport systems. [These include mathematical programming, continuous and discrete optimization, numerical optimization, computational complexity analysis, metaheuristics, and multi-objective optimization](https://uxdesign.cc/emt-challenge-97e119d91b2f).

[These tools help engineers and modelers to use better existing public transport models and also develop new models that can address future challenges](https://uxdesign.cc/emt-challenge-97e119d91b2f).

Design thinking has been used in transportation to improve user experience, safety, and efficiency. [For example, the Land Transport Authority (LTA) of Singapore used design thinking to improve public transportation](https://uxdesign.cc/emt-challenge-97e119d91b2f).

[Optimization models can be used to design public transport networks by solving problems that involve the redesign of either a part of a network or a complete network and the assignment of frequencies](https://uxdesign.cc/emt-challenge-97e119d91b2f).

**Real time transit information:**

Real-time information, broadly defined, means any information available to transit providers or customers about the current status of vehicles, including approximate locations and predictive arrival times. Most real-time information relies on automatic vehicle location (AVL) and Global Positioning Systems (GPS) in order to estimate approximate arrival times for passengers and transit system operators. Passengers access real-time arrival and departure information through dynamic signs at stops and stations, or through the Internet at home or on smartphones. As smartphones become more prevalent, they have made access to third-party scheduling information and apps highly accessible for passengers.

This is a two-way method of communicating wherein the passenger can send a text message to an agency, usually with a code for the stop they want information about. The agency then automatically sends a response with the next bus’ arrival times.