Flexible mobility on demand (FMOD)
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Innovative solutions are needed for sustainability of transportation systems

FMOD provides a menu of options to travelers based on their preferences

Phase 1. Feasible product set generation
• Set of feasible products to be offered to the customer
  – Scheduling and capacity constraints

Phase 2. Assortment optimization
• Optimized list of products to be offered to the customer
  – Maximize profit/welfare based on a choice model

Optimization framework for FMOD

Novelty of FMOD: the list of options is optimized based on a choice model
An assortment optimization model is developed and formulated as an LP
Utility of each option is defined by the price, travel time and schedule delay
Simulation experiments are conducted for a city in Tokyo with promising results

FMOD is expected to improve the convenience for travelers and profitability for transport operators
Extensions of the system include the integration of real-time network information, future demand for services, learning the behavior of travelers through repeated visits