Impact of Autonomous Delivery on Last-Mile Logistics

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Objective: Explore impact of autonomous/driverless vehicles on home delivery
Hypothesis: High labor cost of driver-based home delivery major reason for customer pickup at stores
Methodology: Propose design for public logistics network that would allow consolidated-load delivery to the home
Results: At scale, cost of on-demand driverless-based home delivery same as current driver-based delivery
Conclusion: Driverless-based home delivery can eliminate need for all non-recreational shopping, which is especially important for the disabled and elderly

Dirt-to-Dirt Logistics Costs

Home Delivery Alternatives

Network Coordination: Develop mechanism to coordinate operation of each container, vehicle, and DC in the network

Example: 2-D Load Formation

Example: 1-D Load Bidding

Example: Unloading and Loading Operations at DC

DC Storage Control:

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