

Decarbonizing Transport in an Unprecedented Global Crisis

Urban Logistics



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URBANIZATION

*drives density, congestion, emissions
and tighter last-mile regulation*

68% *of the global
population will be living
in cities by 2050*

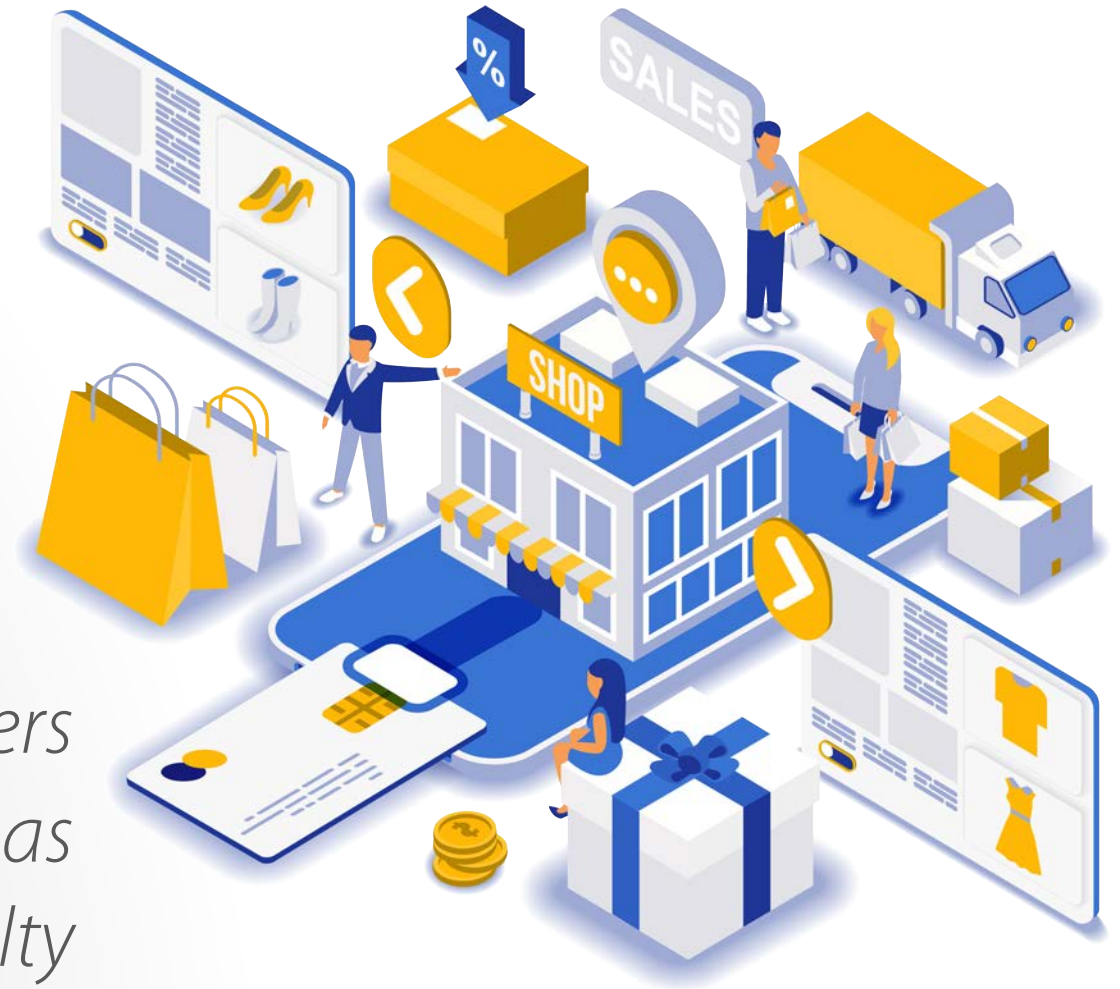
(United Nations, 2018)

ON-DEMAND

consumerism and omni-channel retailing rely on increasingly complex and dynamic last-mile logistics

*More than **60%** of consumers see same-day / instant delivery as a critical driver of brand loyalty*

(Capgemini, 2018)





HYPERLOCAL

fulfillment capabilities are critical for on-demand retailing in urban centers

85% *of same-day delivery services rely on local inventories*
(Capgemini, 2018)

Large shares of CPG retail markets in Latin America served by 'nano stores'
(Blanco and Fransoo, 2013; Nielsen 2018)

MULTI-MODAL

last-mile delivery systems combine the unique strengths of various technologies



TRANSPORTATION

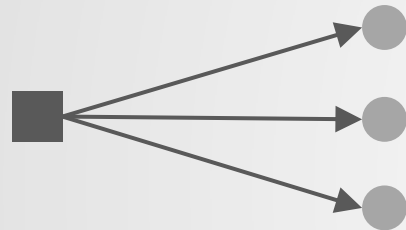
Uni-modal



Multi-modal

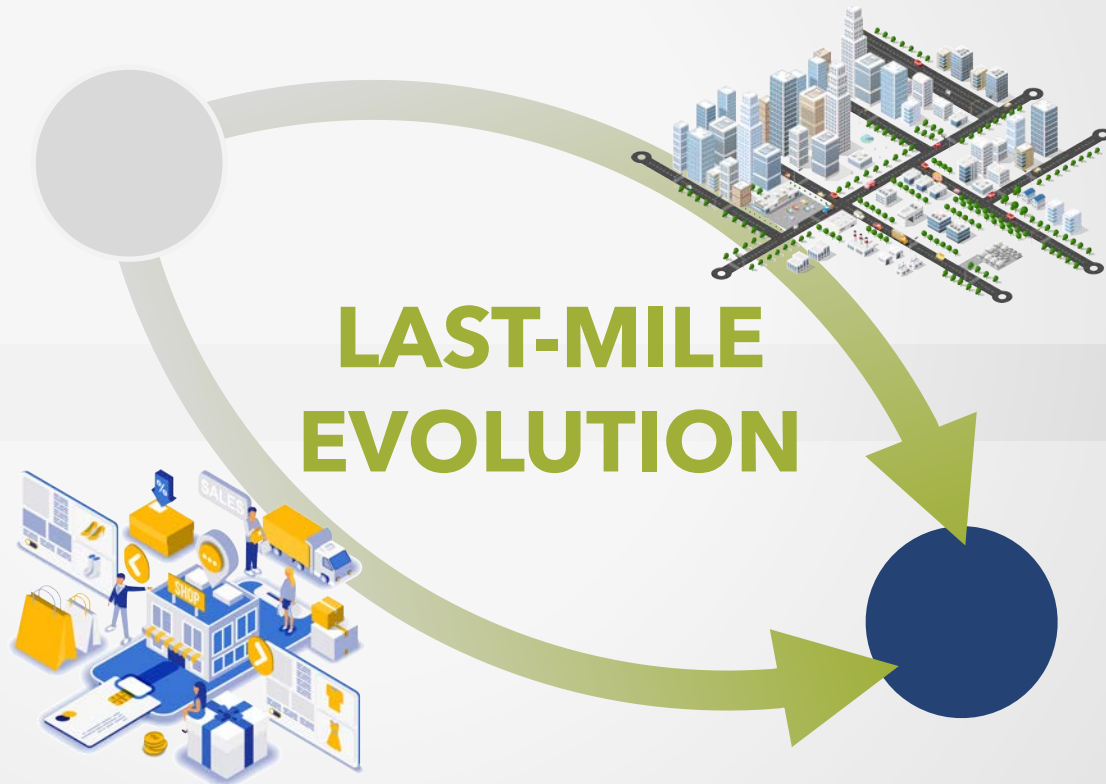
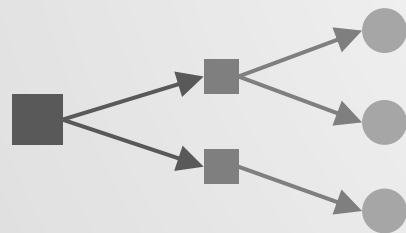


Centralized

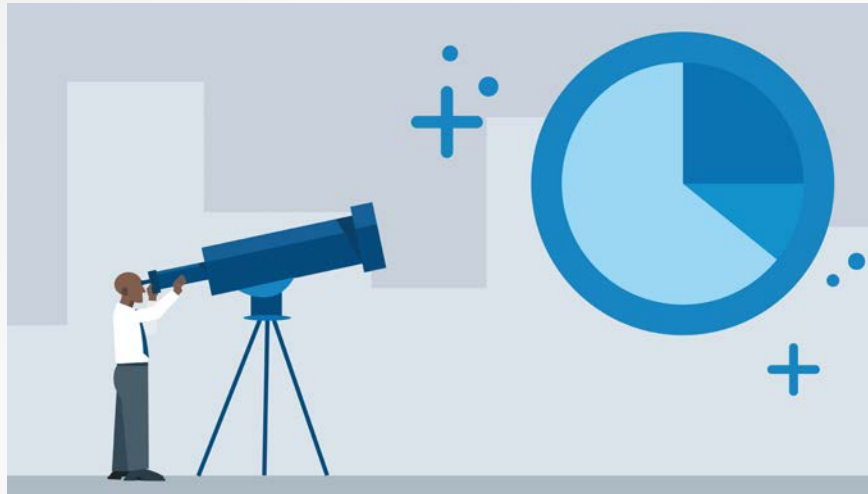


NETWORKS

Decentralized



Machine Learning Methods



Predictive Analytics

E.g.: near-term spatial demand prediction

Operations Research Methods



Prescriptive Analytics

E.g.: learning-based route optimization



DATA-DRIVEN

planning and execution is critical to master an increasingly dynamic and uncertain last mile

Thank you.

Questions?

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