

2020 Transportation Research Board, Washington DC

FREIGHT DAY January 14, 2020

Session #2: “Sustainable and Efficient Solutions for Last Mile Distribution”

Organizers: Bilge Atasoy and Laetitia Dablanc

Report from Takanori Sakai, MIT Singapore

The session was opened by a brief introduction by Bilge Atasoy, followed by the three presentations as follows:

Recent Trends in the Last-Mile Logistics Around the World by Laetitia Dablanc

Laetitia started her talk, describing the global changes in supply chains, technologies, consumption, logistics operation practices among others. She talked about the solutions receiving increasing attention. She provided the progress on the use of drones and robots, the increase in the deliveries to doormen and pick-up points, and the development of shared delivery points. She also discussed the on-demand instant delivery services, which is growing at a large scale, providing the example of gig workers serving for an Amazon urban fulfillment center and the informal logistics in the developing world. According to her, the use of electric vans is raising in the city centers; electrically assisted cargo-bikes are becoming a more cost effective option with the development of bike lanes, especially in Europe. Her presentation included examples of: Amazon Prime Now facility, using electric vans for last-mile deliveries, in Paris, electric freight barges in Paris, micro logistics hubs with cargo cycles in London, and automated micro fulfillment centers in Tel Aviv. She talked about the logistics hotels in Paris and the recent innovations in public policies. Finally, she underlined the importance of leveraging both smart solutions and existing facilities/infrastructures, as well as training for young people to promote careers in freight and logistics.

Using Mobile Sensing and Analytics to Deliver the Goods by Moshe E. Ben-Akiva, MIT

Moshe's presentation was about the software to use infrastructure/resources efficiently. He started the talk with the smart mobility innovations on the passenger side. Then, he discussed a proposal solution for freight, using prediction, optimization, and personalization (Tri-POP). The platform is designed to be user-oriented and fair. He introduced a platform, Future Mobility Sensing, for the user experience. He described the online bi-level optimization framework, consisting of user and system optimizations. Following, the case study of the Automated Freight on Demand (AFOD) was presented. The results summarized the impacts from the user, operator, and social perspectives.

Last-Mile Distribution in New York City: Solutions from Stakeholders by Michael A. Replogle, ville de New York

Michael started with the introduction of NYC DOT Missions. The challenges in NYC include population, economy, and e-commerce growth. He described the freight and delivery demand in NYC and the impacts in terms of environment, public health, safety, and traffic congestion. Following, he highlighted the vision for freight policy. The implemented policies include the Off-Hour Delivery (OHD) program. NYC also promotes the Pedal-assist E-cargo bikes, involving major transportation service providers, as well as off-street freight consolidation, which is still in its early stage. Building/property owners are involved for developing policies to consolidate small deliveries. Smarter Curb management is being progressed - the increase of the commercial vehicle curb access, the reduction of parking placard abuse, license-plate-based parking administration and enforcement, and the reformation of double parking rules. Also, he

talked about the implemented street space allocation, giving priority to buses and trucks at 14th street, NYC, as a successful example.

There were several questions from the audience about (a) the demand assumption on the case study for Tri-POP, (b) the definition of the goods vehicles for policies and the potential congestion pricing policy in NYC and NYC's potential outreach to small operators, and (c) the perspective on how to deal with potential future disruptions on freight systems.