Last Mile Transportation

Dr. Thomas E. Fernandez
Humanitarian Logistics Association (HLA) and
University of the Thai Chamber of Commerce (UTCC),
International School of Management (iSM)
Last Mile Transportation

• Transportation from the local warehouse or distribution center to the beneficiaries.

<table>
<thead>
<tr>
<th>International</th>
<th>Regional</th>
<th>Last-Mile</th>
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<tbody>
<tr>
<td>Main Hub</td>
<td>Port of Entry</td>
<td>Regional Hub</td>
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Picture source: Angeloudis et al., 2021
Emergency Response: Traditional Issues

- Roads, bridges and other ways may be damaged or destroyed.
- Demand for transportation may be uncertain.
- Demand of transport capacity may exceed supply.
- Delivery to hubs, such as a larger village in a village cluster: Crowds may build up around the vehicle
- One family member or a few representatives of a nearby smaller village will receive goods on behalf of the others.
Emergency Response: Initial Covid Response

- New high demand for hand sanitizers, masks and other PPE
- Items not prepositioned and low production capabilities
  => Initial severe shortage of these supplies
- Social distancing required during last mile operations
- Shortage of drivers in addition to shortage of vehicles
- Drone delivery avoids human contact
- Cool/cold storage required at vaccine distribution points
Development Phase: Traditional Last Mile

• Demand is known.
• Distribution centers and vehicles can be planned.
• No difference to commercial logistics.
Development Phase: New Normal

- **New products**: PPE, vaccines. Rethinking of waste management required
- Distribution centers and vehicles need to be approved by the country’s FDA
- For vaccines, all beneficiaries **must travel to** vaccination centres in person
- High demand for **cool/cold chain** distribution
Development Phase: New Normal

- **Demand:** Uncertain. Forecasts are based on demographics, but beneficiaries may not want to get vaccinated, others only want specific brands, others cannot wait.

- **Supply:** Uncertain. Due to uncertain demand, vaccines will be donated before expiry. On the other hand, production earmarked for export may be used in the production country.
Summary

• There is a shift towards new products requiring FDA-approved cool chains.
• Demand management techniques must be applied, and supply is uncertain.
• Social distancing has to be practiced in labour-intensive operations such as warehousing or distribution.
• Vaccine centres have to be set up, beneficiaries have to travel in person.
• Waste products now include biohazardous material on a large scale.
• Assumption: Vaccines and PPE will remain major items for development aid.
• How about sustainability?
References


• Angeloudis et al. (2021): “Disaster Logistics using Unmanned Aerial Vehicles”, Imperial College London [online] https://transport-systems.imperial.ac.uk/project/drone-logistics-disasters/ Accessed 16 September 2021


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Thomas.Fernandez@humanitarianlogistics.com
Thomas.UTCC@gmx.net