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A Guide to Controlling Supply Chain Last Mile and Reverse Last-Mile Logistics: A Study of U.S. And China Small Business Enterprises

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EXTENDED ABSTRACT

Advancements in logistics are transforming the delivery of goods, particularly the final stage of parcel delivery known as the "last mile". This stage involves delivering numerous small orders to various locations. Last-mile logistics aims to get the items to the end user as quickly as possible. Although it may appear simple, the last mile is a costly aspect of delivery (Seghezzi et al., 2021). Addressing the challenges associated with the last mile can lead to improved customer satisfaction, reduced costs, and a competitive advantage for organizations. Optimizing last-mile deliveries remains a complex challenge and is expected to become even more so with growing customer expectations, increasing e-commerce sales, and advancing technology. Companies must address these challenges to retain their customers and maintain competitiveness.

The last mile involves delivering products from a business establishment like a warehouse to the customer's destination, either their home or pick-up point (Mangiaracina et. al., 2019). The last mile is complex and expensive and requires significant effort and resources (Seghezzi et. al., 2021). As the product moves closer to the customer, it is transported in smaller vehicles and becomes subject to more specific delivery requirements. Although it may seem simple, the last mile is the costliest segment in the delivery process, presenting a challenge for businesses. Prior to the e-commerce boom, most last-mile deliveries were made on pallets, transporting consumer and business goods from plants, warehouses, or distribution centers to businesses or retail stores. Companies involved in these supply chains have developed the ability to move large volumes of products efficiently and quickly.

In 2020, package deliveries reached an all-time high during the COVID-19 pandemic, with FedEx and UPS delivering 13 billion parcels and the United States Postal Service delivering over 140 billion, according to the US Government Accountability Office (Szwast, 2021). The surge in package deliveries is largely attributed to the fast expansion of online sales. The pandemic lockdowns and shutdowns caused e-commerce sales to reach an all-time high in Q2 of 2020 (Craven et. al., 2020). Although the numbers have stabilized, online retail sales in Q3 of 2020 were still higher than pre-COVID levels, indicating a permanent shift in consumer behavior (Rindita et. al., 2021).

Consumer preferences are evolving quickly. Online shoppers are demanding not just a greater selection of affordable products but also quick delivery. Last-mile logistics providers are navigating a time of transition and are challenged to revolutionize sustainable logistics practices. The outbreak of COVID-19 resulted in a sharp rise in consumers opting for online shopping for the first time (Dos Santos et al., 2022). The shift in consumer purchasing habits towards quicker

delivery has presented an opportunity for companies to gain an edge over their competition by improving their last-mile delivery approach. In 2020, e-commerce retail sales in the US rose by 43% compared to the previous year, according to the U.S. Census Bureau (2020). The COVID-19 pandemic caused a significant increase in e-commerce sales, with a 25% rise recorded in March 2020 (Bhatti et al., 2020). Post-pandemic, customers visit brick-and-mortar stores less frequently, with 37% of them intending to buy items online that were previously purchased in stores (Kim, 2020).

As the demand for last-mile deliveries continues to grow, having an efficient and dependable last-mile operation will become increasingly crucial. Before the COVID-19 pandemic, the North American last-mile delivery market was estimated to reach \$51 billion by 2022, which may have been an underestimation (Bauer, 2021). This number will rise to around 5 billion in 2025 and 63.1% of the world's population will become active e-commerce users (Siegfried, 2021). The last-mile logistics of China and the United States differ in terms of infrastructure, technology, and delivery methods. In China, the last-mile logistics infrastructure is more developed, with a larger network of delivery services and more efficient delivery methods.

In the United States, the last-mile logistics infrastructure is less developed, with fewer delivery services and less efficient delivery methods. China has adopted more advanced technologies such as drones and robots for last-mile delivery, while the United States has lagged behind in this area (Zhang and Zhang, 2020). Finally, in terms of delivery methods, China has adopted more efficient methods such as same-day delivery and express delivery, while the United States has been relatively slow to adopt these methods, with many retailers still relying on traditional delivery methods like ground shipping. However, the COVID-19 pandemic has accelerated the adoption of e-commerce and delivery services in the United States, and there has been a recent surge in demand for same-day and express delivery options to meet the changing needs of consumers. (Zhang and Zhang, 2020). This research will use the grounded theory approach to analyze the last-mile logistics in China and the United States, drawing on the expertise of the supply chain industry. This study will also identify patterns and potential areas of growth in both China and the United States.

Keywords: *Last mile delivery, Reverse logistics, E-Tailing, Logistics management, Supply chain management*

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Emmanuel Finnih (MBA, the University of Houston) is currently pursuing a Ph.D. in Business at the University of South Alabama. Prior to his Ph.D. program, Finnih served as an Adjunct Marketing Professor at Texas Southern University for seven years, and prior to that, he held managerial roles in supply chain operations, sales, procurement, retail consulting, and warehousing for Amazon and ADT Security over a period of ten years. Finnih's research interests encompass supply chain logistics, e-commerce, and consumer behavior, as he seeks to explore innovative strategies and technologies to optimize the supply chain and improve customer satisfaction in the digital age.