

Chapter 2

A Process–Oriented Warehouse Postponement Strategy for E–Commerce Order Fulfillment in Warehouses and Distribution Centers in Asia

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ABSTRACT

The retail and logistics industry has been revolutionized by the emerging trend of e-commerce business. End-consumers are able to purchase items from online shops from any corner of the world. However, logistics service providers (LSPs) have been facing fundamental challenges in complying with the ever increasing needs of providing proper supply chain solutions. In view of the increasing concern over the order fulfillment performance of LSPs, this article theoretically and practically extends the conventional supply chain postponement strategy into an order fulfillment strategy, namely Warehouse Postponement

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Strategy (WPS), which is a process-oriented tactic addressing logistics process postponement. A case example is provided to introduce an intelligent knowledge-based wave put-away decision support system (IKWPS), which practically realizes the concept of warehouse postponement strategy. With IKWPS and the embedded concept of WPS, logistics practitioners are enabled to gain the competitive advantage of “last-mile” delivery through enhancing end customer loyalty.

INTRODUCTION

The rapid growth of the e-commerce market around the globe over the last decade has drastically revamped the retail industry. End-consumers are not only able to purchase goods at local physical stores, but also from online shops from any corner of the world. According to market research conducted by Statista Inc. (2015), over 40 percent of global internet users purchased products online in 2013. In 2018, this figure is expected to edge close to 50 percent for internet users worldwide (Statista Inc., 2015), showing the growing trend of delivering online-to-offline (O2O) shopping experience to consumers. Due to the changing consumer purchasing behavior, as well as the environment in the retail industry, logistics practitioners are capturing e-commerce logistics markets and improving their capability and capacity of handling such e-commerce business. On the technical side, for example, logistics service providers provide real-time order tracking capability for realizing supply chain information transparency.

The boundary spanning of logistics service providers (LSPs), however, is never easy to attain. The transformation of their core businesses into integrated e-commerce logistics solution provision is formidable, owing to the fact that operational capability could very probably be the major obstacle to be faced, in an attempt to make their internal operational capability aligned with their strategic vision and direction that rides on the emerging and expanding e-commerce market. While cross-border e-commerce and O2O business is a huge market opportunity for logistics practitioners around the world, particularly third-party logistics service providers and freight forwarders, to grasp, they have been facing fundamental challenges in complying with the ever increasing and challenging needs of providing appropriate logistics and supply chain solutions for e-commerce business.

Conventionally, in the absence of O2O and e-commerce business models, consumers purchase items solely at physical retail stores. In this sense, LSPs handle goods in bulk for delivery to wholesalers or retailers, usually on a weekly or bi-weekly basis, primarily for stock replenishment. However, with the presence of online shopping platforms which enable customers to purchase goods online, LSPs are required to handle a large number of stock-keeping units (SKUs), pick and pack small volume orders, and deliver them in small parcel shipments to end consumers with tighter schedules. Therefore, the traditional order fulfillment process in warehouses and distribution centers (DC), which encompasses receiving, put-away, picking, and transport of goods in bulk, is unable to fulfill the order handling requirements of e-commerce shipments. The fundamental differences between traditional order handling and e-commerce order handling could well explain why e-commerce businesses have had serious challenges to the efficiency of the last-mile of e-commerce fulfillment, and have been reshaping the position and degree of importance of LSPs along the supply chains.

In view of the increasing concern over the order fulfillment performance of LSPs in the e-commerce business environment, this article presents an operation strategy, namely Warehouse Postponement Strategy (WPS), a process-oriented tactic addressing logistics process postponement in warehouses and DCs.

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