



Customer satisfaction with order fulfillment in retail supply chains: implications of product type in electronic B2C transactions

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Abstract

This paper focuses on the proverbial “last mile” of the retail supply chain – i.e., delivering products to the end-customer – and highlights the need for recognizing product type differences in configuring order fulfillment processes in electronic business-to-customer (B2C) transactions. The following two questions serve as the motivation for the study: Do customer expectations of order fulfillment processes vary across product types? Should the product type matter in configuring order fulfillment processes? From the studies in the marketing literature, we infer that customer satisfaction assessments are based on customer expectations of order fulfillment processes, and that these expectations systematically vary across the three product types: convenience goods (e.g., groceries, home and office supplies), shopping goods (e.g., ready-to-wear men, women, and kids’ apparel), and specialty goods (e.g., desktop and notebook computers, and wedding dresses). In particular, we posit that *ceteris paribus*, customer satisfaction with order fulfillment will decrease moving along a continuum of product types, from convenience goods to specialty goods. The empirical analysis for this study is based on data collected on dimensions of customer satisfaction with order fulfillment from a sample of 256 firms engaged in electronic B2C transactions. Firms included in our study sample are such that their products can be classified into only one of three product types: convenience, shopping, or specialty goods. In essence, each firm in the study sample is a proxy for one of three product types. The results of the empirical analysis indicate that, on average, customers tend to have higher satisfaction levels with the order fulfillment process of convenience and shopping goods than with the order fulfillment process of specialty goods. We discuss the managerial implications of our results, contributions of the paper to the literature, limitations, and directions for future research.

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1. Introduction

It is now well recognized that the effectiveness with which firms are able to fulfill orders in their electronic business-to-customer (B2C) transactions is

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a significant determinant of customer satisfaction and retention (Shenton, 2002; Newton, 2000; Pastore, 1999). According to (Ricker and Kalakota, 1999, p. 60), “Good fulfillment – taking the right product, putting it in the right box, shipping it, and gaining the customer’s approval – is a demanding task, and it is here – in the down-and-dirty details of consumer direct order fulfillment – that the epic battles for domination of the e-commerce marketplace will ultimately be won or lost.” In a similar vein (Lee and Whang, 2001, p. 54) suggest that “the ability to fulfill and deliver orders on time could determine an e-tailer’s success.” The significance of order fulfillment in delivering e-service quality is documented in Zeithaml et al. (2002). More specifically, in an empirical study of electronic B2C operations of food retailers, Heim and Sinha (2001) found that variables underlying the order fulfillment process – such as ease of return, product availability and timeliness of delivery – have a significant positive association with customer loyalty.² Echoing the findings of Heim and Sinha (2001) study, Newton (2001, p. 24) observes: “It is the successful transfer of physical products between merchant and the customer that ultimately determines whether the customer will place another order.”

Order fulfillment in electronic B2C transactions is a “complex, multi-faceted process that will continue to strain the growth of e-commerce in the United States and abroad” (Peters, 2000, p. 64). Pyke et al. (2001, p. 27) posit that “order fulfillment involves all of the activities from the point of a customer’s purchase decision until the product is delivered to the customer and he or she is fully satisfied with its quality and functionality.” Customer satisfaction with the order fulfillment process depends on the extent to which the expectations of customers are met by the firms. There is consensus in the service quality and customer satisfaction/dissatisfaction (CS/D) literature that “expectations serve as standards with which subsequent experiences are compared, resulting in evaluations of satisfaction or quality” (Zeithaml and Berry, 1993, p. 1) and that “understanding customer

expectations is a prerequisite for delivering superior service quality” (Parasuraman et al., 1991, p. 39). In a similar vein, Garvin (1988) suggests that incorporating customer needs and wants is fundamental to the strategic management of quality. According to Peters (2000, p. 66), “Customer expectations must be integrated into the creation of any e-fulfillment strategy.” This study represents a first step in that direction. Specifically, our study is motivated by the following questions: Do customer expectations of order fulfillment processes vary across product types? Should the product type matter in configuring order fulfillment processes?

Reviewing the literature relevant to our research questions suggests a linkage between product type and supply chain design. For example, Fisher (1997) classifies products on the basis of their demand patterns and matches them with the physically efficient and market-responsive supply chains. Lamming et al. (2000) identify two distinct types of supply networks: those for “innovative-unique” products and those for “functional-products.” Randall and Ulrich (2001) analyze differences across products at the product attribute level and note that product attributes underlying product variety influence the production and market-mediation costs. Further, they posit that firm performance is a function of the coherent alignment between product variety and supply chain structure. Childerhouse et al. (2002) adopt the DWV³ (duration of life cycle, time window for delivery, volume, variety, and variability) characterization of products and develop focused demand chain approaches for product categories. The key question motivating the aforementioned set of studies is how supply chains can be designed to effectively and efficiently meet the demands placed by different product types. However, the focus of supply chain design in these studies is on delivering products onto the store shelves. Our research complements this body of literature in that it focuses on the proverbial “last mile” of the retail supply chain—i.e., delivering products to the end-customer.

Another stream of literature that is relevant to our study is that on logistics service quality. For example, Mentzer et al. (2001) develop nine related logistics service quality constructs and establish their reliability and validity across four customer segments: textiles, construction, electronics, and general. They suggest

² The regression model estimated by Heim and Sinha (2001) included both the order fulfillment variables and order procurement variables—such as product information, price, and web site navigation. They found that the order fulfillment variables contributed the most towards explaining customer loyalty.

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