Chapter 15

COORDINATING TRADITIONAL AND INTERNET SUPPLY CHAINS

Kyle D. Cattani  
*The University of North Carolina at Chapel Hill*

Wendell G. Gilland  
*The University of North Carolina at Chapel Hill*

Jayashankar M. Swaminathan  
*The University of North Carolina at Chapel Hill*

Keywords: Channel coordination; pricing; retail channel; Internet channel; supply chain management; electronic commerce; mathematical modeling; game theory

1. Introduction

The Internet has provided traditional manufacturers and retailers a new avenue to conduct their business. On one hand, utilizing the Internet channel potentially could increase the market for the firm and, due to synergies involved, reduce the costs of operations. On the other hand, a new channel threatens existing channel relationships through possible cannibalization. This chapter explores recent research on coordination opportunities that arise for firms that participate in both traditional channels as well as internet channels. Three areas of coordination are discussed: procurement, pricing, and the backend operations of distribution and fulfillment.
1.1 Overview of Research

In its most parsimonious form, a supply chain consists of suppliers, manufacturers, retailers and customers who manage the bi-directional flows of goods, information and money. The opportunity for coordination arises at each interface. As indicated in Figure 15.1, we have labeled these three coordination opportunities procurement, distribution, and pricing. In this chapter, we identify and discuss research that has been conducted in each area. For a detailed overview of research on electronic supply chains see Swaminathan and Tayur (2003). Although the total research is these areas is quite voluminous, we focus on work that explicitly considers the role of the internet in conjunction with traditional supply chain relationships. We highlight opportunities for improved performance that arise from incorporating the internet into an existing supply chain. Figure 15.1 indicates the research papers that meet our criteria and are discussed in detail in this chapter. For ease of exposition, we cover these areas roughly chronologically; first describing the creation of a procurement policy, then discussing coordinated pricing practices, and finally addressing the opportunities for managing distribution after the product has been purchased.

![Figure 15.1. Map of Research](image)

1.2 Procurement

An important change that has occurred due to e-business is in the area of supplier relationships and procurement in firms. The electronic business paradigm has created immense opportunity for firms to consolidate their buying processes. Many firms have benefited by adopting such e-procurement sys-