Supply Chain Analysis in the E-Business Era  
Outline of Chapter 13

Chapter Title:
Coordinating Pricing, Inventory, and Production: A Taxonomy and Review

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Abstract:

In this chapter, we summarize model-based research that coordinate pricing policies with inventory control and production decisions in the supply chain. We focus on pricing research that assumes a firm controls price (i.e., not auctions), and where the firm may determine price according to time and service level. We provide a comprehensive taxonomy for work in this field, and we differentiate the research reviewed according to each element. We examine the implementation of coordinated pricing policies in industrial settings, and we suggest application areas and potential pitfalls. Finally, we conclude with suggested directions for future research for coordinated pricing policies.

Outline with list of intended content:

1) INTRODUCTION
   a) Motivating Examples
   b) Background
      i) Definition of dynamic pricing
      ii) Scope of review
   c) Industrial Experience
   d) Chapter Goals
      i) Survey existing research that coordinates pricing strategies with inventory control and production planning.
      ii) Create a taxonomy for better understanding of existing research
      iii) Discuss implementation of coordinated pricing policies in industrial context
      iv) Suggest directions for future research
   e) Chapter Outline

2) A COMPREHENSIVE TAXONOMY
Papers reviewed in Section 3 will be distinguished according to the following major elements.
   a) Number of Time Periods and Prices
      i) Number of time periods (single, multiple, infinite)
      ii) For multiple periods, number of prices (single constant price or dynamic multiple)
b) Objective
   i) Type of objective (profit, cost, etc.)
   ii) Assumption on form of objective (e.g., concave)

c) Demand Assumptions
   i) deterministic or stochastic
   ii) demand function (linear, exponential, etc.)
   iii) unfilled orders (lost or backlogged)
   iv) demand learning incorporated (yes or no)

d) Production Constraints
   i) Production or re-order periods in horizon (limited or unlimited periods)
   ii) Production capacity limits (limited or unlimited in a production period)
   iii) Production set-up cost (zero or fixed)

e) Other
   i) Planning Perspective (full planning, partial planning, no planning)
   ii) Competition (monopolistic or competitive firm)
   iii) Coordination with other members of the supply chain
   iv) Coordination with other channels of distribution
   v) Price coordination with lead time decision

3) EXISTING RESEARCH
   a) Single Period Models
      i) Review of single period models
      ii) Analysis and discussion of solution methods, general pricing policies, etc.

   b) Multiple Period Models with Dynamic Prices
      i) Review of multiple period models
      ii) Analysis and discussion of solution methods, general pricing policies, etc.

   c) Other Pricing Strategies
      i) Constant Pricing
      ii) Postponement Strategies
      iii) Coordination with supply chain and distribution channels
      iv) Lead time coordination

   d) Classification Table
      i) Table of all reviewed papers

4) INDUSTRIAL SURVEY
   a) Overview
   b) Industries and Characteristics
   c) Industrial Implementations
      i) Dynamic Pricing
      ii) Constant Pricing
      iii) Pricing and E-Tailing
   d) Potential Pitfalls

5) CONCLUSIONS AND FUTURE RESEARCH