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Book review

Supply Chain Management: Strategy, Planning & Operations, Sunil Chopra & Peter Meindl. 3rd ed., Pearson International Edition, Pearson Prentice Hall, Upper Saddle River, New Jersey (2007). 536pp., £37.92, ISBN-13: 978-0-13-208608-0

Supply chain management (SCM) is growing as a research subject and as a crucial field of importance for firms around the globe. Supply chain management is closely intertwined with the logistics operations and is gaining increased recognition as a fundamental element of firm strategy and competitive advantage. Logistics encompasses the activities of inventory management, order processing, warehouse and materials handling and physical distribution. SCM is concerned with the design and operation of the physical and managerial systems needed to transfer goods and services from supplier to customer in an efficient manner. Strategic planning and scheduling of logistics operations are important in supply chain systems.

Because of SCM's interdisciplinary nature, spanning such fields such as mathematics, economics, management, and information technology, presenting an optimal mix of SCM concepts is a challenging endeavour. Chopra and Meindl's book "Supply Chain Management: Strategy, Planning & Operations" represents a comprehensive introduction to supply chain management with an emphasis on quantitative and practical applications of supply chain concepts. The book is centred on the notion that inventory, transportation, facilities, sourcing, pricing and information constitute key drivers of supply chain performance.

As Chopra and Meindl explain in their Preface, the purpose of the book is to help the reader to develop an understanding of supply chain design, planning, and operation. The breadth of concept and theory coverage is extensive and the book contains valuable insights for academics and practitioners alike. Focusing on the supply chain from a strategic, conceptual and analytical perspective, this book covers the activities of firms involved in the flow of products, services, finances, and information from initial suppliers through to the end users. Throughout, the authors emphasise how managers can best accomplish supply chain tasks and responsibilities. Key concepts are illustrated with case studies that lead readers through the various processes that

need to be covered in building and managing the supply chain and driving its performance.

This book is divided into six parts covering seventeen chapters. Part one consists of three chapters in which the authors provide a strategic framework for understanding design, planning and operational decisions within supply chains. Chapter 1 explains the impact of supply chain decisions on a firm's overall business performance, chapter 2 draws out the importance of achieving a strategic fit between a firm's competitive strategy and supply-chain strategy, and chapter 3 reviews the major drivers of supply chain performance.

Part two discusses a set of frameworks and tools applied to design efficient supply chain networks. More specifically, chapter 4 investigates how to design a distribution network, presenting a variety of network models taking into consideration the growing importance of e-business. Chapter 5 contains a detailed explanation of a framework for facility decisions in a supply chain and chapter 6 examines how uncertainties in demand and financial factors impact on supply chain decisions.

Part three explains the significance of demand and supply planning in a supply chain. Chapter 7 reviews the methodologies to forecast future demand based on historical demand data, followed by a comprehensive description of the aggregate planning methodology in chapter 8. Chapter 9 investigates how **supply chain managers** can plan pricing and promotions to manage customer demand in coordination with production and distribution supply planning across the supply chain.

Part four describes the role of inventory in a supply chain and discusses various managerial levers to manage inventory without increasing cost or decreasing the level of product availability. Chapter 10 discusses the factors that affect the level of cycle inventory within a supply chain. Chapter 11 focuses on the build up of safety inventory to counter supply or demand uncertainty and chapter 12 reviews factors that influence the appropriate level of product availability within a supply chain.

Part five includes a single chapter reviewing the supply chain drivers of transportation, the strengths and weaknesses of various modes of transportation and the design of transportation networks.

The final part explores the impact of sourcing, pricing and information on supply chain performance. Chapter 14 highlights sourcing strategies for a firm, including outsourcing, negotiation and contracting decisions. Chapter 15 discusses the role of pricing and revenue management in maximising profitability from supply chain assets. The impact of information technology on supply chains is reviewed in chapter 16 and the book concludes with a discussion on coordination impacts on a supply chain's performance, reviewing the bullwhip effect in chapter 17.

Several real-life supply chain management examples from well-known companies such as Wal-Mart, Dell Computers, Zara, Amazon.com and Toyota illustrate the concepts and theories and offer ample motivation to the reader to explore supply chain management issues in more depth. Moreover, Chopra and Meindl explain quantitative concepts such as demand forecasting involving Excel spreadsheets. All seventeen chapters are well structured, highlighting key points and concluding with discussion questions and exercises. The modularity of the various chapters enables the reader to choose specific parts of the book without losing continuity.

However, the book does assume some familiarity with concepts from operations research and with quantitative topics such as mathematical programming and statistics in addition to familiarity with Excel. Consequently, some of the quantitative formulas are presented in an unnecessarily over-complicated fashion which is not easily accessible to a wider audience. Some of the mathematical topics are not explained in sufficient detail and students may need instructor's extensive guidance to understand such topics. Therefore, more emphasis should have been placed on exercises providing sufficient practice with quantitative concepts. As such, it may not be suitable as a reference book for managers who do not possess a strong quantitative background.

The book should certainly appeal to an academic as well as a practitioner audience interested in supply chain management and logistics. On the academic side, MBA

students and senior undergraduate students with a quantitative orientation will be well served by this book. Analysts, supply chain managers and consultants may find the book a good reference to understand how quantitative decisions affect supply chain strategy. However, business school instructors who prefer the case study method of teaching with little emphasis on the quantitative aspects of problems may find the book less appropriate for teaching. The book is a good choice for a supply chain management course that has a strong quantitative emphasis.

In summary, the book provides a clear focus on designing, evaluating and planning supply chains deploying various quantitative concepts as building blocks to highlight the managerial actions that can be exercised to manage supply chain performance. The frameworks and concepts discussed in this book are tied together through a variety of examples and show how a combination of concepts is needed to achieve significant increases in supply chain performance. The small vignettes throughout the book bring the subject area to life and will help readers to appreciate the value of decisions emerging from planning and managing supply chains.

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