

Foreword

The Engineer-to-Order (ETO) approach in manufacturing supply chain offers flexibility and responsiveness to address the changing customer or market requirements. By the virtue of ETO, it enables the integration of supply chain activities and therefore, the treatment of ETO and supply chain strategies is novel and appropriate. The integration eventually would lead to efficient and effectiveness along the supply-chain operations.

The book treats the subject well highlighting the importance of ETO in developing a well-integrated supply chain in order to be flexible and responsive, but at the same time to be cost efficient. Furthermore, it emphasizes the role of an information management system in order to facilitate a better communication along the supply chain and in turn improved performance in ETO companies. Supply chain strategies and the Engineer-To-Order are complementary to each other in developing agile manufacturing systems.

The book has been tailored to researchers, industrial R&Ds and academia. There are 11 chapters in this book. Chapter 1 presents the role of information systems in ETO supply chains. Chapter 2 describes the improvement of the communication system between the company and customers. A communication network is analyzed for achieving sustainable supply chain in Chapter 3. Chapter 4 demonstrates the importance of collaborative modelling in improving the construction supply chain. The innovation diffusion within the European ceramic tile supply-chain network is presented in Chapter 5. Chapter 6 articulates a systematic methodology for modelling and synthesis of supply chain networks using Petri's nets.

The application of production capacity planning and scheduling models in terms of supply-chain management is presented in Chapter 7. Chapter 8 deals with management risk and resilience within a collaborative business network. Chapter 9 elaborated the supply-chain design approaches for dual demand management strategies. The study reveals that dual demand management strategies are designed simultaneously for both engineer-to-order and make-to-order business scenarios. Hence, this study is motivated from by the case of a window manufacturer; this manufactures and distributes vinyl windows to meet new construction and replacement/remodelling sector demand. Furthermore, this study proposes to separate products based on demand management strategy and develop different supply chain networks among others. Therefore, the basic contribution to this research approach is to design bigger facilities for high volume (make-to-order products) as transportation cost per unit is reduced due to economies of scale. Thus, placing smaller and more facilities for low volume engineer-to-order products to be closer to the clients where it may not be feasible to carry only few products over long distances. The hybrid supply chain strategies in wind business are described in Chapter 10. The final chapter presents the physical and digital integration strategies of electronic supply chains and their applicability to ETO supply chains.

The book outlines the critical success factors, optimized processes, efficient and effective enterprise systems enablers and applications. This book will be useful for professionals and academics in the field

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of industrial engineering and management, supply-chain management and value-chain management. It introduces innovating new processes, novel operational architectures, models, and framework strategies.

This book is a valuable reference material for the professionals and the academic scholars or researchers in global industrial-project and operation's executives, global-industrial engineers and enterprise supply-chain management professionals, global industrial-research and development professionals, and global industrial-enterprise manufacturing consumers. This book is a great addition to the body of manufacturing supply chain.

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