

BOOK REVIEW

Green Supply Chain Management: Product Life Cycle Approach

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Supply chain management (SCM) has been traditionally concerned with planning, management and control of various activities, such as manufacturing, logistics and collaboration with supplies and customers. As stated in the book (p.4), the Global Supply Chain Forum defined SCM as “an integration of procedures from suppliers to consumers to provide products, services and information in order to add the values of the customers and related roles”.

As the society has become ever more aware of the environment problems and scarcity of natural resources, governments have passed laws and regulations meant to protect the environment quality and save energy and raw materials. Several examples of pieces of regulation referred in the book are those announced by the European Union: ROH (“Restriction on Hazardous Substances”), WEEE (“Waste Electrical and Electronic Equipment”), EuP (“Eco-design of Energy-using Products”), ELV (“End of Life vehicles”), REACH (“Registration, evaluation, authorization and restriction of chemicals”). Various industrial organizations have been forced to observe such regulations and, in the meantime, remain competitive on the market. The book is meant to help the knowledge workers (managers, planners, technologists, production supervisors, marketers) of those organizations to learn the necessary methods and procedures for performing the change towards environmentally friendly supply chains.

The monograph is the result of the cooperative effort of two well respected authors who possess the necessary complementary expertise for writing such a book: Professor Hsiao-Fan Wang and Professor Surendra M. Gupta. The former is a distinguished chair professor in the Department of Industrial Engineering Management (IEEM) at the National Tsing Hua University (NTHU), Taiwan. Her scientific

interests include multi-criteria decision-making, fuzzy set theory and green value chain management. The latter is a professor of Mechanical and Industrial Engineering and the Director of the Laboratory for Responsible Manufacturing at Northeastern University, Boston. His scientific interests include operations research, engineering economy, supply chain management and production planning and control.

The content of the book is well planned to address both the “forward activities”, such as procurement, design, manufacture and distribution, as well as the “reverse activities” which include inspection and disassembly of the end of life products for reuse, repair, manufacture, recycle or disposal. Consequently, the twelve chapters of the monograph are organized into four parts addressing basic concepts, green engineering, green value chain management and green information management systems.

The *first part* entitled “Basic Concepts and Background” is meant to set the stage for the remaining parts of the book. It is composed of two chapters: a) “Introduction” (to describe the evolution of the concepts of the green supply chain management) and b) “Mathematical Background” to describe the main mathematical models to be utilized throughout the book, such as: Fuzzy logic, Analytic Hierarchy Process (AHP) and Multi-objective linear programming.

Part 2 is entitled “Green Engineering Technology” and is composed of three chapters. Several aspects are addressed, such as the principles of “green engineering” (in Chapter 3), selection of “green materials” (chapter 4), and environmental design with particular emphasis on the design of the “Disassembly Index” and various centres involved in the chain activities (Chapter 5).

Part 3 is entitled “Green Value Chain Management” and is made up of five chapters to describe the green supply chain as a closed loop system. Thus, various aspects, such as the selection of the vendors which are appropriate for the green manufacturing (chapter 6), “green production” (with particular emphasis on lot sizing problem) and “green logistics” (chapters 7 and 8), the identification of customers who may prefer green products (chapter 9) and disassembly and reuse of the end-of- life products (chapter 10) are addressed.

Part 4 is entitled “Green Information Management Systems” and describes several specific aspects from an IT perspective, such as the standards, procedures and examples on the

database for life cycle assessment (chapter 11) and the “web-based information support systems” (chapter 12).

This is a clearly written book and contains up-to-date materials concerning the new concepts, mathematical methods recommended for use, and practical examples. It is a useful and usable source of knowledge which is meant for researchers and industry people. In particular, the IT specialists can get specific information and inspiring ideas especially from Part 4.

In conclusion, this is a timely work which I warmly recommend to the people from industry and academia who are interested in the new ways which can provide competitive advantage and contribute to the sustainable development.

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