A Reverse Logistics Model For The Distribution Of Waste By

The aim of this book is to present qualitative and quantitative aspects of logistics operations and supply chain management which help to implement the sustainable policy principles in the companies and public sector’s institutions. Authors in individual chapters address the issues related to reverse network configuration, forward and reverse supply chain integration, CO2 reduction in transportation, improvement of the production operations and management of the recovery activities. Some best practices from different countries and industries are presented. This book will be valuable to both academics and practitioners wishing to deepen their knowledge in the field of logistics operations and management with regard to sustainability issues.

Quality Management in Reverse Logistics intends to develop, collect, examine and evaluate a number of quality management (QM) tools and techniques, which can be applied in practice in order to understand, review and improve any closed-loop supply chain process. In other words, the book aims to examine the existing relationship between various well-developed and thoroughly studied quality issues, such as QM, quality assurance, standardization of processes and statistical quality control and the emerging research area of reverse logistics. Quality Management in Reverse Logistics contains modeling and quantitative methods that could be used by practitioners and academics in the reverse logistics industry, as well as a thorough description of QM tools and techniques. The book leads the potential reader to broaden their
scope of thinking and acting in the new, promising area of reverse logistics, where QM can be applied.

zunächst vorgenommene Erweiterung des System-Dynamics-Modells um eine sektoerubergreifende Koordination der Produktions- und Recyclingprozesse strebt eine Verbesserung des zuvor beobachteten Systemverhaltens an. Sich daran anschließende Szenarioan

Provides a review of current and potential research in green management and control. Closed-loop supply design, flexible delivery, random path, Memetic algorithm, Genetic algorithm, Taguchi method.

Network models are critical tools in business, management, science and industry. “Network Models and Optimization” presents an insightful, comprehensive, and up-to-date treatment of multiple objective genetic algorithms to network optimization problems in many disciplines, such as engineering, computer science, operations research, transportation, telecommunication, and manufacturing. The book extensively covers algorithms and applications, including shortest path problems, minimum cost flow problems, maximum flow problems, minimum spanning tree problems, traveling salesman and postman problems, location-allocation problems, project scheduling problems, multistage-based scheduling problems, logistics network problems, communication network problem, and network models in assembly line balancing problems, and airline fleet assignment problems. The book can be used both as a student textbook and as a professional reference for practitioners who use network optimization methods to model and solve problems.

Economic, marketing, and legislative considerations are increasingly leading companies to take back and recover their products after use. From a logistics perspective, these initiatives give rise to new goods flows from the user back to the producer. The management of these
goods flows opposite to the traditional supply chain flows is addressed in the recently emerged field of Reverse Logistics. This monograph considers quantitative models that support decision making in Reverse Logistics. To this end, several recent case studies are reviewed. Moreover, first hand insight from a study on used electronic equipment is reported on. On this basis, logistics issues arising in the management of "reverse" goods flows are identified. Moreover, differences between Reverse Logistics and more traditional logistics contexts are highlighted. Finally, attention is paid to capturing the characteristics of Reverse Logistics in appropriate quantitative models.

The rapid technological development of new products, coupled with the growing consumer desire for the latest technology, has led to a new environmental problem: products that are discarded prematurely. But behind every problem lies an opportunity. Many of these products can be reprocessed, leading to savings in natural resources, energy, landfill space, and ultimately, time and money. Strategic Planning Models for Reverse and Closed-Loop Supply Chains addresses complex issues caused by the inherent uncertainty involved in every stage of a closed-loop supply chain. The book presents quantitative models for the many multifaceted issues faced by strategic planners of reverse and closed-loop supply chains amid the challenges of uncertainty in supply rate of used products, unknown condition of used products, and imperfect correlation between supply of used products and demand for reprocessed goods. The models proposed in this book provide understanding of how a particular issue can be effectively approached in a particular decision-making situation using a suitable quantitative technique or suitable combination of two or more quantitative techniques. This information then translates into decision-making strategies and guidance for reverse and
closed-loop supply chain management. Business practices are constantly evolving in order to meet growing customer demands. By implementing fresh procedures through the use of new technologies, organizations are able to remain competitive and meet the expectations of their customers. Designing and Implementing Global Supply Chain Management examines how various organizations have re-engineered their business processes in an effort to accommodate new innovations and remain relevant in a highly competitive global marketplace. Highlighting the creation of integrated supply chains and the emergence of virtual business communities, this publication is an appropriate reference source for students, researchers, and practitioners interested in trending approaches to external business functions used to efficiently respond to growing customer demands.

As consumer preferences shift towards online shopping and utilizing their homes as fitting rooms, traditional brick and mortar retailers are faced with the challenge to adapt. Many retailers are experiencing a growing number of returned merchandize, many of which cannot be easily resold to consumers due to various supply chain challenges. This thesis explores the opportunities to improve the consumer returns process and presents methods for modeling the supply chain process for reverse logistics in the retail industry derived from case studies. The model then allows for hypothesis testing. By changing parameters in the model, this thesis further explores the scenarios in which the supply chain process may be improved to increase margin and decrease cost. The primary recommendations include specific modifications to the current reverse supply chain flow, enabling new channels that improve speed and margin, as well as developing the decision tool further for better accuracy and integration into the supply chain.
Just like the world financial system, but for different reasons, 21st-century corporations need a new business model for their enterprise supply chains. The old conventions no longer work in this new world of volatile and increasingly unpredictable demand and supply. The enterprise needs to become more 'connected' to its own parts, as well as its partners up and down the chains it participates in. So too, we need to embrace new ways of looking at customers to gain deeper, more insightful impressions of what they are telling us about the way they want to buy our products and services. Finally, these signals need converting into corresponding action, driven by the people in the business, leaders and staff alike, who are aligned to their customers' wishes. This is the world of dynamic supply chain alignment where, increasingly, supply chains are the business. In the follow-up to his hugely successful Strategic Supply Chain Alignment, John Gattorna's Dynamic Supply Chain Alignment, explores how to create and sustain multiple supply chains with a level of flexibility and responsiveness that allow you to respond to opportunities and threats; at the same time aligning with your suppliers, your partners and your customers. When more executives get to this stage of development the profits will flow more readily, and sustainability of performance will not be the same issue it is today. The way forward is right there in front of us; but, says John Gattorna, we must throw off old ways and embrace the new. Increasing legislative and environmental pressure requires businesses to become more responsive to products that either have been returned or that are at the end of their
useful lives. Life cycles are getting shorter, and efficient handling can save large amounts of money since many materials can be extracted and reused or redistributed. Reverse logistics addresses decision making in reverse logistics, which concerns the integration of used and obsolete products back into the supply chain as valuable resources. It covers a wide range of aspects, related to distribution, production and inventory management, and supply chain management. For each topic, it highlights key managerial issues in real-life examples and explains which quantitative models are available for addressing them. By treating a broad range of issues in a unified way, the book offers the reader a comprehensive view on the field of reverse logistics.

Electronic waste, or e-waste for short, is a fast growing waste stream, not only in developed countries but also in countries such as Turkey. Although Turkey recycles some of its e-waste, most of it is in storage, mostly because there is no take-back system. Thus, the equipment looses value for second use. Furthermore, number of the recycle companies like Exitcom increases and there is a big competition between them. In Turkey and Europe legal requirements and government directives are going to handle involving reverse logistics, involving the protection of health and the environment. These requirements will cost considerations for waste processing and reuse materials. In addition the current situation in Turkey is favorable for a successful introduction of e-waste recycling. The e-waste situation is relatively clean and informal.
recycling and there is a general move towards more sustainable waste management. This study proposes a model for Exitcom Company for innovate conditions of company, that model is defined as the processes needed to reuse the e-wastes. source of cost reduction to be able to reuse materials and recycle other materials and give the company image to customers and potential consumers that the company is socially committed to environmental aspect that so far is having the importance it deserves in the country at both the corporate and governmental level. The viability of the model of a Exitcom in Turkey was assessed through a SWOT analysis. The analysis shows that the model reveals many opportunities with advantages for Exitcom. This book provides a comprehensive overview of how to strategically manage the movement and storage of products or materials from any point in the manufacturing process to customer fulfillment. Topics covered include important tools for strategic decision making, transport, packaging, warehousing, retailing, customer services and future trends. An introduction to logistics Provides practical applications Discusses trends and new strategies in major parts of the logistic industry

Supply chains today continue to have shorter life-cycle products as a result of high rates of innovation. The increasing number of electronic retailing and catalogue sales fulfil the requirement of home shopping. More liberal return policies have been introduced to protect customers' buying rights and at the same time generate more sales. A growing number of environmental regulations are created which involve a wide range of products. All of these circumstances contribute to the reverse flow of products which require manufacturing
organisations to strategically manage and deal with the return flows. Reverse supply chains or reverse logistics have attracted the attention of many academics and practitioners and one of the important field studies in this area is of Supply Chain Management. To contribute to the field, this research is purposely carried out to study the performance measurement in reverse supply chains. Reverse logistics networks may be classified into several categories depending on the source of the reverse flow. This research will focus on customer and distribution return flows. The research is significant because there is a gap in the literature and it could help to give companies guidance in managing their reverse supply chains better. Case studies on five companies which include manufacturers and retailers in the UK provide empirical evidence for their practice of performance measurement in reverse supply chains. The research investigates the selection of strategic objectives for reverse supply chains and the impact of product returns' characteristics and the choice of product returns disposition channels. Learning from the performance measurement in a reverse supply chain, the research proposes a three-level performance measurement framework model for reverse and closed-loop supply chains. This framework model provides the decision makers with a formal and systematic approach to select strategic objectives and towards the use of meaningful performance attributes and performance metrics. Subsequently, it offers a practical approach to the decision maker to perform and manage the reverse supply chain more effectively. The world of logistics has considerably changed due to globalization, modern information technology, and especially increasing ecological awareness. Large Supply Chain Management (SCM) systems are developing to global logistic networks. This book reflects major trends of the recent decade in SCM and, additionally, presents ideas and visions for logistic networks of
the 21st century. Among the various aspects of SCM, emphasis is placed on reverse logistics: closing the loop of a supply chain by integrating waste materials into logistic management decisions.

As legislations have become stricter and the competition on markets is getting stronger, companies facing return flows strive for the implementation of efficient and cost-effective reverse logistic procedures. At the same time, when managing reverse logistics, they are not only confronted with a high degree of uncertainties concerning the quality, quantity and timing or the product returns, but also with a dynamically changing environment. Various aspects, such the increasing amount of return flows, shorter repair and lead times as well as increasing disposal costs, affect the reverse logistic system and need to be managed proficiently. Additionally, handling product returns requires supportive computer aided modelling tools that are capable of handling the dynamic and complex characteristics of the reverse logistic system and allow an improved estimation of the impact of a changing environment and management decisions. For the purpose of this study, the system dynamics modelling approach has been
identified as particularly suitable for illustrating the system in question with a special focus on understanding the dynamic behaviour over time. A generic system dynamics model has been exemplarily created and simulated using the program iThink. The model comprises end-to-end processes of the main reverse logistic activities related to customer returns and has been used for studying the strategic design and optimization of the reverse logistic system. In order to consider relevant uncertainties as well as environmental concerns and economic efficiency, representative policies have been applied where, inter alia, with the help of the graphical illustration of the processes, effective strategies could be implemented. A general evaluation of the system dynamics methodology has revealed the significant advantages of using supportive modelling techniques for strategic decision making. Particularly for complex systems that change over time, such as reverse logistics, applying appropriate computer aided modelling tools in order to anticipate the overall effect on processes caused by varying surroundings has proven essential. An effective utilization of system dynamics may significantly reduce the forecasting and planning risks within individual frameworks, such as capacity planning. Moreover, the generic approach allows the application of the model to any other industry that is characterized by uncertain capacity utilization and varying technical, economical and legal conditions.

Advanced Manufacturing and Automation V contains the proceedings of the 5th International Workshop of Advanced Manufacturing and Automation (IWAMA 2015). This meeting continues the success of this important international workshop series and disseminates the works of academic and industrial experts, from around the world, in
the areas of advanced manufacturing and automation. The disciplines of manufacturing and automation have attained paramount importance and are vital factors for the maintenance and improvement of the economy of a nation and the quality of life. Manufacturing and automation are advancing at a rapid pace and new technologies are constantly emerging in the fields. The challenges faced by today’s engineers are forcing them to keep on top of the emerging trends through continuous research and development. The papers comprising these proceedings cover various topics including: Robotics and automation; Computational intelligence; Design and optimization; Product life-cycle management; Integration of CAD/CAPP/CAM/CIMS; Advanced manufacturing systems; Manufacturing operations management; Knowledge-based manufacturing; Manufacturing quality control and management; Sustainable production; Diagnosis and prognosis of machines; Lean and agile manufacturing; Virtual and grid manufacturing; Resource and asset management; Logistics and supply chain management; RFID applications; Predictive maintenance; Reliability and maintainability in manufacturing; Project management; Renewable energy development; Environment protection; Intelligent detection.

FLINS, originally an acronym for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended to Computational Intelligence for applied research. The contributions to the 10th of FLINS conference cover state-of-the-art research, development, and technology for computational intelligence systems, both from the
Conventionally people have been defining logistics as a means of getting manufactured goods from the manufacturer to the customer. It is often viewed as a system of delivering goods to the customers but seldom the reverse. Here the concepts of reverse logistics are discussed and compared to that of forward logistics. The field of forward or conventional logistics is well covered. The delivery models have been studied in detail and well researched. But in reverse logistics these very models are not established. This is an opportunity of explore some of the ideas as to when and where reverse logistics comes into play. We all know the supply chain that flows in the forward direction, but, what happens when the customers want to return the goods. What happens when the Government is breathing down your neck to be environmental friendly. What happens when you fear that the knowledge intensive parts might end up with you competitors. That's when reverse logistics comes into picture. In spite of
some very intriguing questions raised above, many companies are not capable of or are unwilling to enter the reverse logistics market. Such reluctance appears to be attributed to lack of knowledge of reverse logistics. [1] Case study of a high profile company like IBM has been selected and studied to best answer the above questions. Vehicle routing problems is a very challenging field. An attempt is made using a Mathematical model to find the shortest route for Simultaneous Pick up and Delivery. The problem has been solved for optimizing the route using Solver in MS Excel. Further research needs to be done to take into account the load of the items to be picked up and the vehicle capacity. The comparison shows that there is a large scope for further research into developing various reverse logistics models and with the global economy, cut throat competition, and tough environmental standards to comply with, the future of these industries may very well depend on the implementation of the best supply chain techniques and strategies.

Supply Chain Management Under Fuzziness presents recently developed fuzzy models and techniques for supply chain management. These include: fuzzy PROMETHEE, fuzzy AHP, fuzzy ANP, fuzzy VIKOR, fuzzy DEMATEL, fuzzy clustering, fuzzy linear programming, and fuzzy inference systems. The book covers both practical applications and new developments concerning these methods. This book offers an excellent resource for researchers and practitioners in supply chain management and logistics, and will provide them with new suggestions and directions for future research.
Moreover, it will support graduate students in their university courses, such as specialized courses on supply chains and logistics, as well as related courses in the fields of industrial engineering, engineering management and business administration.

Inhaltsangabe: Introduction: As the world population is growing continuously and emerging markets are expanding, natural recourses are being used even more intensively. Because of the scarcity of natural resources, industry faces a changing business environment. Due to government regulations, companies nowadays must handle not only in terms of efficiency, but also of sustainable development and new market opportunities. Thus, with the progression of the logistics sector in recent years, supply chain management and especially the concept of reverse logistics have become more important for both, industry and science. By utilizing reverse logistics, companies aim at maximizing their product revenue while reducing the costs of product returns. Accordingly, implementing an effective concept of reverse logistics, while manufacturing environmentally friendly products, has become a strategic issue. In order to meet the requirements, companies are confronted with the problem of reducing the uncertainties regarding the quality, quantity and timing of the product returns. In this context, a high level of uncertainty leads to a strong increase in complexity compared to the traditional forward supply chains. Using modern computer aided modelling techniques such as system dynamics, helps to counteract this complexity since they not only enable a better understanding of the dynamic behaviour of such complex systems
but also allow an improved estimation of the impact of a changing environment and management decisions. This thesis contributes towards an improvement of the strategic decision making process in the field of reverse logistics by providing a generic simulation model which can be used to analyse the influence of different environmental and economical policies with respect to prevailing market conditions. To achieve this objective, the following approach is proposed: In Chapter 2, the theoretical foundation of reverse logistics is characterized forming the framework for the subsequent analytical approach concerning the appropriate model development. For this purpose, first, an overview of the state of the art concerning the processes and influencing factors within the field of reverse logistics is provided. This is achieved by describing the theoretical background of the topic, including a characterization of the impact of individual reverse logistic activities on each other and on their environment. Afterwards, current challenges and trends when [...]