

Supply System Design of a Lubricant Distributor Company in Colombia

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Abstract

Design of supply system is considered as one of the most important strategic decisions and a key factor to ensure operational and financial efficiency. This work presents the methodological issues, the inventory management scheme, the mathematical models proposed and the findings and results to improve the supply system a marketer of lubricants in Colombia, in order to determine tactical and operational strategies. Likewise, procedures for inventory management were developed; and the amount of product to be stored, and quantity and purchase frequency were determined. These decisions contributed to reduce logistics operation cost, optimize inventory investment level and improve customer service level and reduce overall costs associated with inventory of products. Methodology for work focused on three phases: Characterization of the supply system through SCOR model for understanding the procurement process dynamics and its implications for the overall operation of the company, which allowed us to propose procedures for supply management; Implementation of mathematical models to calculate the amounts and frequency of purchase by product category that would allow reduce inventory costs and increase customer service level and; Design of simulated scenarios to analyze decision variables and their impact on key performance indicators.

Keywords

Logistics, Inventory Management, Source System, SCOR Model

Biography

Jhonny Rodríguez holds a Bachelor of Science degree in Industrial Engineering and a Master of Science in Industrial Management from Universidad de Ibagué. He has worked in logistics subjects, such as, transportation, distribution, and supply chain of many different companies. Mr. Rodríguez has worked in the public sector, public university UNAD Universidad Nacional Abierta y a Distancia, in planning processes to improve results of impacts of management control and effectiveness of resources. Mr. Rodriguez has provided consulting services to certify quality management companies in international standards.

Nelson Tovar is currently Industrial Engineering PhD student in Universidad de los Andes. Mr. Tovar holds a Bachelor of Science degree in Industrial Engineering, a Specialization degree in Production Engineering and a Master of Science degree in Industrial Management from Universidad de Ibagué. He has taught courses in operations management, plant layout, logistics and supply chain management, operation research and simulation at the undergraduate and graduate level. Mr. Reimer is member of the Journal Vía INNOVA Scientific Committee of Servicio Nacional de Aprendizaje SENA, Regional Tolima – Trade and Services Center. Mr. Tovar has completed research projects, consulting and advisory services in industrial and services sectors in operations management and logistics fields. His research interests include logistics and supply chain management, inventory management, facility location and plant layout, production planning and scheduling, mathematical modeling, optimization and simulation.