

Guest Editorial Preface

Special Issue on Production Planning Techniques for Supply Chain Management in Service Organizations

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In modern customer-centered service organizations, teamwork, cooperation, and coordination are important. To make things work in a customer-oriented way, production planning is needed. Production planning is the process of production scheduling to drive effective and efficient operation. Production planning facilitates the control, use, and monitoring of production processes by providing management with a centralized view of production. This goal is achieved through establishing a standard set of activities called policies. Service organizations in the manufacturing field are increasingly facing very complex engineering design requirements. This presents significant challenges to meeting customer specifications through highly customized product designs. Supply chain management is critical for the service industry to reactivate the growth potential and mitigate operational risk. The planned supply chain is the one that links all the resources necessary for effective production and services, directing them to the phases of production and sales distribution; it also includes the interconnection of information between all different suppliers, vendors, partners (indirect), and customers (direct).

Production planning plays a vital role in the success of any service or manufacturing organization. A production plan includes steps that identify resources and materials, optimize their utilization, and improve overall supply chain management. Production lines are a set of sequential activities for completing a specific task in accordance with predetermined standards of time, cost, quality, other performance parameters, and volume requirements. Production planning aims to determine which products are to be produced by the firm, how much is to be produced, what resources are required, and when they are needed. Strong relationships between buyers and sellers have long been the core of supply chain management in today's business environment. Yet supply chain management has evolved from its origins as a model for the efficient flow of materials in manufacturing to encompass networks of information, relationships, technology, and knowledge flow processes giving it more strategic importance within organizations. The response to this special issue is reasonable, and we have received a total of 18 submissions around the world. Five papers were selected for publication after a careful review process. We will introduce the selected articles and highlight their significant contributions in the following.

The first article is entitled "Supply Chain Efficiency and Effectiveness Management Using Decision Support Systems". An efficient artificial intelligence-assisted decision support system is proposed to enhance the efficiency and effectiveness of the supply chain management systems. This approach works based on the state-space model, and it offers improved performance with a greater customer satisfaction index. The control modeling efficiency also improved with higher profitability measures.

The second article is entitled “Supply Chain Efficiency and Effectiveness Management: Decision Support Systems.” The major objective of this paper is to empower the strategic thinking and planning process with improvement models and mechanisms. The authors focus on enhancing the optimal productivity and the effectiveness of the supply chain management process. A data envelope analysis model is adopted to enhance the effectiveness of the supply chain management process. The result indicates comparatively better efficiency measures than conventional approaches.

The third is entitled “Application of Cold-Chain Logistics and Distribution System Using Deliver Schedule Management”. The authors propose an artificial intelligence-enabled product distribution system for efficient delivery schedule management across the supply chain systems. The effectiveness of this approach is evaluated, and it provides better performance than the conventional methods. It also assists in efficient logistics and inventory management.

The fourth article is entitled “On the Service Transformation of Ningbo’s Manufacturing Industry Considering the Potential of Ecological Benefits”. The authors focus on transforming Ningbo’s manufacturing industry, considering its various ecological benefits. A grey relational model is presented to analyze the relationship between the Ningbo’s manufacturing sector. The experimental results indicate the better significance of this scheme with improved accuracy measures.

The last article is entitled “The Spillover Effect of Agricultural Product Market Price Fluctuation Based on Fourier Analysis”. The authors attempt to assess the increase in price fluctuation across agricultural products. This approach significantly helps to improve information disclosure, and it assists in marketing supervision. The proposed scheme helps in efficient price analysis and risk mitigation across the agricultural sector.

We would like to express our sincere gratitude to the Editor-in-Chief of the journal for offering us a privileged opportunity to edit a special issue. We thank all the authors and reviewers for their timely contributions. The article presented in this special issue enhances the various aspects of production planning and supply chain management. We hope this special issue will add significant value to the research community.

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