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CRITICALLY EVALUATING THE ROLE AND APPLICATION OF SUPPLY CHAIN PERFORMANCE MEASUREMENT SYSTEM

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Introduction

Supply Chain Management (SCM) is defined as the management of the flow of products and services, that has started from the processing of the raw material and ended with consuming of the product by the end-user. The main objective of SCM is to monitor the process of production, distribution of products and services, and shipment of the products and services. In order to meet the objective of SCM, the Supply Chain Performance Measurement System (SCPMS) has been used. SCPMS is mainly used to evaluate the organization's efficiency and effectiveness by providing valuable information regarding customers' requirements that helps the organization fulfil the customers' needs and meet the strategic goal of the organization. The main aim of this essay is to critically analyse the role, application and issues of the Supply Chain Performance Measurement System by using practical examples and theory.

Discussion

An efficient Supply Chain performance measurement system is able to identify the details of an organization's internal efficiency, customer satisfaction, and financial data of the organization (Fatorachian & Kazemi, 2021). Transparency and a mutual understanding of the whole supply chain management are dependent on the supply chain performance measurement systems. According to Kamble & Gunasekaran (2020), performance measurement systems can be classified into two categories - Qualitative measures and Quantitative measures. Qualitative measures include product quality and customer satisfaction and Quantitative measures include supply chain response time, delivery time, delivery performance, flexibility, and resource utilization. There are 7 drivers in the supply chain performance management systems which are logistic management, facilities, inventory, transportation, information distribution, management, sourcing and pricing. Managing all these drivers in an organization can lead to an increase in a firm's performance.

Theory of Constraints (TOC)

According to Mishra (2020), TOC is mainly focused to identify the most significant constraints that are preventing the way to achieve a goal and systematically improving those limiting factors until it is no longer a constraint. This theory is mainly focused on five steps that help the organization's improvement by removing the constraints ***[Refer to Appendix 1]***.

An organization can use this TOC in their SCM for achieving organizational goals by identifying their limiting factors so that they can improve those constraints. The main constraints

in the supply chain process can be capital, time, stocking area, machinery, human resources, infrastructure, the level of knowledge and many more. These constraints are responsible for affecting organizational performance. Implementing TOC in SCM in an organization helps to identify and remove its most significant bottleneck by improving the process and procedures of workflow. Hence, organizational performance can be developed and upgraded by implementing TOC in supply chain performance measurement systems.

Several issues are identified in the SCM system. According to Sharma et al. (2021), due to highly volatile markets that include shortages of raw materials, changes in consumer demand, changes in climate change, trade wars, environmental regulations, economic uncertainties and changes in policy, industrial problems and many more, SCM is at high risk. Unexpected delays in delivery because of the large distance lead to a major problem for SCM. An increased cost of raw materials, energy, labour and freight interrupts the production that affects the SCM. Lack of effective data affects the organization's SCM. As per Wu et al. (2019), unable to implement the technologies such as AI, IoT, ML, blockchain, drones, and robotics because less knowledgeable and skilful employees in the business harm the SCM. Shortage of labour and equipment in the organization leads to a huge problem in the organization's SCM. All these above challenges in SCM affect the SCM performance that reduces business growth.

The small and medium-sized enterprises of the UK faced a huge problem because of the increased cost of living and high prices of products (Lloydsbankinggroup, 2023). An increased cost of products interrupts the services of SMEs in the UK and they are pressured to increase the wages of the employees, failing to lead to a labour shortage. Asda and Sainsbury's logistics and supply chain which is handled by EV Cargo stated that the worldwide shipping problem will continue for several years because of increased rate of shipping prices (GroceryGazette, 2022). This problem affects the supply chain performance of Asda and Sainsbury and also the UK SMEs.

Qureshi (2022) emphasizes that SCM has a significant relationship with SCPMS. Hence, the issues of SCM are highly affecting the performance of SCPMS. As an example, the rising price of fuel affects the transportation of goods by road, air and sea air. Hence, it increases commodity prices which cause the increased cost of raw materials. Labour costs from suppliers and manufacturers have increased. A complex international logistics system leads to high charges for the management, transfer and storage of products.

A supply chain performance measurement system is mainly used to secure the supply chain management process. According to Ulloa-Murillo et al. (2022), SCPMS allows a large amount of information that helps to increase the integration of the company along with the supply chain firms. SCPMS helps the organization to fulfil the customers' requirements, on-time delivery, product capacity, product availability, and many more so that SCM can deliver the performance in a quick-to-respond manner. As per Oubrahim & Sefiani (2022), a performance measurement system helps an organization with strategic planning and operational control and also provides the necessary information the operation management can monitor, control, evaluate, and give feedback on particular tasks. SCPMS evaluation in various stages of an organization includes raw materials, components, assemblies, finished products, and distribution through various channels to the end customer. According to Olan et al. (2022), the main role of SCPMS is evaluation of the business processes' performance, analyse the strategies and plans of the organization, verification the issues, and decision-making, motivate for improvements and support communication within an organization.

These above factors in SCPMS help to mitigate the SCM issues by using real-time data. With the help of SCPMS, a firm can significantly eliminate the challenges of SCM, so that an organization can improve and upgrade its performance and expand its business globally. SCPMS eliminates the issues of SCM by understanding the volatile market, reducing unexpected delays, cutting operating costs, arranging necessary datasets for organizations, adopting new technologies and many more.

As per the above discussion, a shortage of raw materials and a lack of efficient labour have been identified in SCM that can be eliminated with the help of the resource management of SCPMS. With the help of SCPMS strategic planning, economic uncertainties and industrial problems can be reduced. The organization can control their expenses and the overall cost can be reduced with the help of the budget control method of SCPMS. Executing supply chain activities of SCPMS as per the demands of suppliers can help to increase the sales of a product which leads to more profitability. SCPMS helps to move goods logically which helps to cover large distances in a short time and customers enjoy the on-time delivery. Manners to reduce operational costs by using SCPMS can help an organization to increase its business performance at a much reduced cost that leads to an increased growth rate.

In order to improve the SCM of a company and to develop a relationship between the supplier and customer, the Supply chain operations reference (SCOR) model is used. According to Duque et al. (2019), SCOR is defined as the processes within the supply chain that helps to improve the SCM process within an organization. According to the SCOR model, the five main components of the SCM are planning, making, sourcing, delivery, and returning. ***[Refer to Appendix 2]***.

The performance of the five integrated components is measured based on flexibility, reliability, responsiveness, quality, and cost. SCOR model helps businesses to improve their supply chain management for efficiency, reliability, and consistency.

Organizations use SCPMS after understanding the consumer's requirements. Organizations use the strategic planning method of SCPMS in order to understand the strategic position of the organization. This method helps to prioritize the objective of the organization. Depending on the objectives, the organization develops a strategic plan to improve the SCM process that helps to increase the business growth of an organization. The resource management of SCPMS helps an organization to find knowledgeable and skilful employees so that they can easily adapt to the technological changes of an organization and can increase their market value by improving the SCM of the organization. The budget control method of SCPMS can help an organization control its overall budget by cutting down the extra expenses that help an organization to improve its SCM in a cost-effective way. Executing various activities of the Supply Chain as per the demands of suppliers helps an organization to improve its SCM performance which helps to develop the market value of an organization. SCPMS helps to reduce operational costs by moving goods at a nominal cost that helps to fulfil the demand of consumers for on-time delivery.

Cisco has adopted the RBA code of conduct which is a set of environmental, social, and ethical industry standards (CISCO, 2023). According to this supplier code of conduct, employees of Cisco work to build and maintain a flexible and socially responsible supply chain together. In order to maintain the health of the machinery, a wireless sensor by Artificial Intelligence (AI) has been installed in Colgate-Palmolive for improving the supply chain reliability (Colgate-Palmolive, 2023).

Cisco's planning and manufacturing operations are globally expanded with hundreds of suppliers and partners. The sustainability requirements of the supply chain are embedded in the

business processes to improve business performance. Integrated planning of Cisco includes Integrated Strategy, Forecasts and Scenarios, Portfolio Analytics, Governance and Infrastructure, and Functional strategy. Cisco securely connects machines, people and data in the manufacturing unit for better decision-making and enabling factory mobility. In Cisco, there is more visibility of suspicious traffic, policies and frauds. Digital transformation in the manufacturing unit can increase the performance of SCM. The Strategic sourcing method of Cisco for vendor management results in simplicity, flexibility, and reduced costs. Cisco's ecosystem partner methodology follows a go-to-market strategy and takes a four-pronged approach to deploy Cisco's Internet Communications Software Group's (ICSG's) software platforms and to scale market delivery. The four-pronged approach includes Cisco's partner strategy for Application Service Providers (ASPs), systems integrators and resellers, consultant integrators, and outsourcers and extends to include Cisco's high-touch sales force. In order to facilitate product returns for recycling and reuse, Cisco offers remanufactured used equipment for sale and comprehensive service and repair through Cisco Refresh. Therefore, it can state that the SCOR model is applied in CISCO where its five components are strategized as per the business goal. However, CISCO faces SCM-related issues like a shortage of Cisco chip production that causes an increased product backlog (Networkworld, 2023). Due to the increment of the product backlog, the SCM of Cisco has been reduced. Hence, it can be stated as a drawback of the SCPMS of Cisco. Cisco can aid this drawback through SCPMS by implementing strategic planning and resource management.

Conclusion

A brief discussion of the importance of SCPMS is obtained from this essay. In order to achieve the organizational goal with the help of SCPMS, an organization should implement a Theory of Constraints to identify the limiting factors of SCM so that they can improve the constraints. Some issues of SCM are discussed here such as highly volatile markets, unexpected delays in delivery, increased cost of raw materials, energy, labour and freight, lack of effective data, inability to implement the technologies and shortage of labour and equipment. All these issues of SCM are highly affecting the performance of SCPMS. UK SMEs face problems regarding high prices of products and Asda, and Sainsbury's face worldwide shipping problems due to increases in shipping charges. SCPMS helps the organization to fulfil the customers' requirements, on-time delivery, product capacity, product availability, and many more in order to

mitigate SCM issues. The SCOR model is discussed here to understand the role of SCPMS. The benefits of Cisco and Colgate-Palmolive are discussed here in order to meet the five components of the SCOR model to achieve the business goal. Cisco faces drawbacks in SCPMS because of a shortage of chips.

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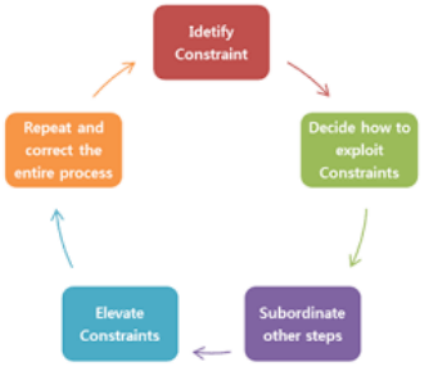
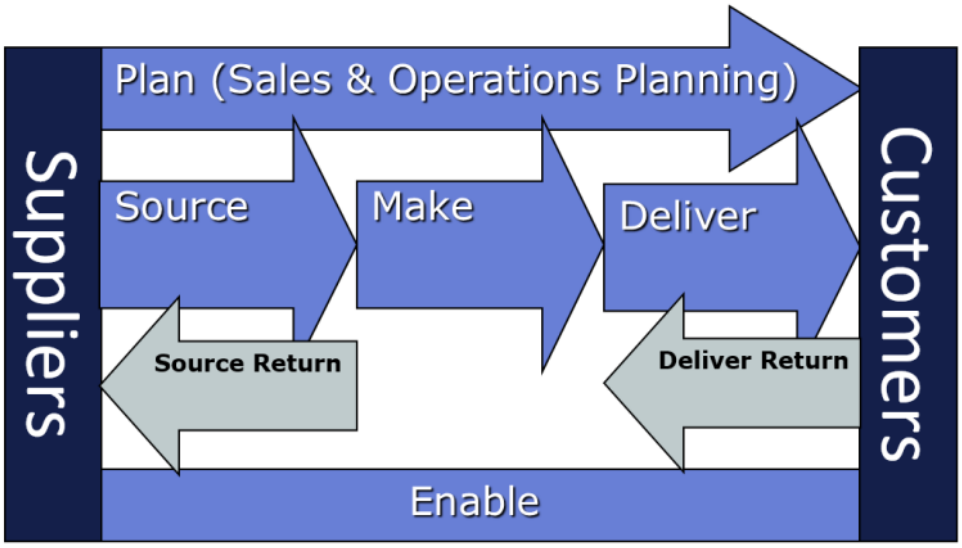
Appendices

Appendix 1: Theory of Constraints



(Source: Ekleş & TÜRKMEN, 2022)

Appendix 2: The SCOR Model



(Source: Ricardianto et al. 2022)

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