

CONTENTS

Executive Summary	1
Introduction	1
Positive and Negative Attributes Associated With Supply Chain Management in the Automotive Industry	1
Positive Attributes	2
Think Global-Act Local	2
The Completely Knocked Down (CKD) Principle	2
Enhanced Communication Across Organizations	3
Inter-organisational collaboration	3
Dynamic Supply Chain Management.....	4
Negative Attributes of Supply Chain Management in the Automotive Industry	4
Unforeseen delays	5
Unqualified or semi-qualified staff	5
Poor risk management.....	5
The Gap between Evaluation and Implementation of Supply Chain Improvement	6
Global Supply Chain Issues and Possible Solutions	7
Conclusion	7
REFERENCES	8

EXECUTIVE SUMMARY

This paper addresses global supply chain management (GSCM). The industry used to explore this topic is the automotive industry, as it is a core industry in the world economy, both in revenue generation and inefficiency. The paper explores both the positive and negative attributes of supply chain management, explores and analyses the gap between evaluation and implementation of improvements in supply chain management and then looks into the global issues affecting supply chain management and their solution.

INTRODUCTION

Supply Chain Management is a frequently used term in the business sector. Though widely used, the real meaning of supply chain management is missing in many people's conversation (**Davis, 1993**). In order to demystify this perception, we shall define supply chain management. Supply chain management is the process of handling the flow of goods or services in entirety, beginning from the supply of raw materials to delivering the final product to the end-user (**Burman, 2012**). In a broader perspective, global supply chain management has been defined as planning how the supply chain in its entirety can function as a whole integrated function, aimed at generating an optimum customer service level not leaving cost-effectiveness out of the definition (**Sanders, 2012**). Having defined these critical terms, we shall now embark on the application of global supply chain management in the automotive industry.

POSITIVE AND NEGATIVE ATTRIBUTES ASSOCIATED WITH SUPPLY CHAIN MANAGEMENT IN THE AUTOMOTIVE INDUSTRY

The automotive industry is one of the largest and most influential in the world (**Masoumi & Kazemi, 2019**). One of the reasons why this is among the largest industries in the world is that it takes different companies to design, develop, manufacture, sell or even market these products, including spare parts (**Zhu, Crotty & Sarkis, 2008**). It is clear; therefore, that supply chain management should be at the core of the processes in this industry, as it affects a very large population of people around the globe. In this section, we look into both the positive and negative attributes of supply chain management.

POSITIVE ATTRIBUTES

THINK GLOBAL-ACT LOCAL

In supply chain management, the ‘think global act local’ attribute is a positive attribute of supply chain management. In this attribute, global companies having a presence in many different countries partner with other stakeholders in these countries to enable an efficient flow of goods and services (Fung, 2006). Having a network of recommended local partners enables customers of a particular company to access its guaranteed services from anywhere, without complications. For example, the giant vehicles manufacturer, Mercedes Benz, has a partnership with Continental Tyres. Through this partnership, Continental Types is able to supply tyres to any client of Mercedes Benz, regardless of the location. This partnership began in 2012, and it is reported to be a success. Additionally, Mercedes Benz has partnered with LG Electronics to help its clients get the services of LG. This attribute of supply chain management employed by Mercedes Benz is beneficial to both the company as well as its customers, as they enjoy efficiency in the supply of goods and services (Hoover, 2010).

THE COMPLETELY KNOCKED DOWN (CKD) PRINCIPLE

Using this principle, automotive manufacturers prefer to export vehicle parts instead of shipping the whole finished product. This is because import duty on the assembled vehicle is relatively higher than that for CKD. Additionally, the components in a completely knocked down vehicle occupy lower freight space than the space occupied by the complete vehicle (Malavolti, 2019). This consequently reduces freight costs, making the final product to be less costly. This is of an advantage to both the company and the customers, as selling at a lower than market price will attract more buyers, thereby increasing profitability. This attribute of supply chain management enables manufacturers of automobiles to ensure supply of vehicles to various destinations in the world, without incurring too high expenses. The shipping of parts instead of the finished product is additionally advantageous in that it reduces risk. However, these advantages do not come without a challenge. Firstly, the skills with the staff in the country of destination must be matching the skills with the staff in the country of origin. This is to ensure that there is no compromise in quality. This may come with a high cost of training which may be relatively equal to the shipping costs of finished products. In addition, if the parts are not taken care of, it could be possible to have some losses in the freight and therefore inconvenience the completion of the vehicle. Amidst these challenges with the CKD principle, it is an ethical principle to increase efficiency and

success of supply chain management. A real example in which this principle applies is that Advantech forklift terminals are used by all German car manufacturers for production logistics processes, in-house transport, scanning transport goods, and purchase order processing. Another firm which practices this principle is DB Schenker where it packages new vehicle parts, which have never existed before, referring them as vehicles in kit form. Mercedes Benz trucks plant began the journey of Completely Knocked Down vehicles in 1966, with more than 700,000 kits having been shipped up to 2015 (Yin, Dong & Liu, 2017). In 2015 alone, Mercedes Benz trucks plant shipped 13,000 CKD kits for assembly in various parts. Until 2018, this company had invested up to three million euros in CKD vehicles. Therefore, the CKD principle is an essential attribute in supply chain management.

ENHANCED COMMUNICATION ACROSS ORGANIZATIONS

A successful supply chain management must incorporate the use of effective communication both within and outside the organisation. Effective communication enhances collaboration between stakeholders and enables the process to be active and efficient (Baker, 2017). For example, When Mercedes Benz partners with LG electronics to fit the electronic devices, there needs to be very clear communication to ensure the smooth running of the two organisations. In supply chain management, there are very many stakeholders. For example, there are the suppliers of the materials, assemblers, and distributors to the final market. There must be intentional coordination between all stakeholders in this process to enable the end-user to get what they deserve. For example, the management should take note of the requests by the team so that their needs are met. Additionally, the end-user should give feedback to enable the manufacturers to either improve or maintain the quality of products. There is a clear need to communicate effectively in any supply chain management.

INTER-ORGANISATIONAL COLLABORATION

The first point to note in inter-organisational collaboration is information sharing. This is a very important aspect for partners in a supply chain management circle. Communication involves the exchange of data between organisations, mostly through electronic means. There are three models involved in information sharing. The first model is transferring information directly to a trading partner to enable the partner to maintain the data for decision making. The second model involves a third party collecting the information, supporting the transactions and supporting the database. The third model is the information hub model, where a system, rather than a third party, collects information, maintains transactions and maintains a database. The difference between the second and the third models is that in the third model, the third system replaces the third party. Inter-

organisational collaboration must be guided by a number of factors. First, a guiding principle in this collaboration is trust among the partners. This trust places an obligation on both organisations to maintain high levels of integrity in the accuracy and truthfulness of the information shared (**Majchrzak, Jarvenpaa, & Bagherzadeh, 2015**). The information shared should also be confidential and not shared with third parties without the relevant approvals and consents. The second principle in this collaboration is a positive relationship with trading partners. There need to be other factors which connect the partners outside the core business to enable enough collaboration.

Additionally, the trading partners need to be ready for the collaboration. This enables the relationship to flow and solve issues which may arise amicably. It is, therefore, core for collaboration between the trading partners to be enhanced, if the supply chain must be a success. An example of this collaboration is where automotive companies partner with logistics companies, and they submit such documents as invoices and the number of the quantity delivered. BLG Logistics is a European logistics company which has partnered with most German vehicle manufacturers to ship their products.

DYNAMIC SUPPLY CHAIN MANAGEMENT

Another attribute of supply chain management is being dynamic. This enables the supply chain management to embrace changes with time and understand that supply chain management is not static (**Wadhwa, Saxena & Chan, 2008**). One area in which this may be evident is through the massive development of the internet and advancement in technology. Through this, the internet has given the power of expression to the customer, making the services more efficient due to the push for speed and time component. Another area in which the dynamic attribute of supply chain management is evident is in agility. Supply chain management must be able to respond to demand with respect to variety and volume. This enables the market to be satisfied with what is offered by the firm. Supply chains which are push oriented should be replaced by pull oriented chains which are customer-centric, rather than factory driven supply chains. Another dynamic area of the supply chain is the use of technology to ensure that what is ordered is what is delivered, and the process can be monitored through advanced technology (**Wadhwa et al., 2008**).

NEGATIVE ATTRIBUTES OF SUPPLY CHAIN MANAGEMENT IN THE AUTOMOTIVE INDUSTRY

Amidst the numerous positive attributes of supply chain management in the automotive industry enumerated above, there are negative attributes of supply chain management, as discussed in this session.

UNFORESEEN DELAYS

One of the most traumatising experiences is waiting for a commodity ordered beyond the promised date. This leads customers to have diluted trust in the company. The delays may be caused by either internal or external factors (**Wu, Liao, Tseng, Lim, Hu & Tan, 2017**). While the process of procuring materials may be easy and straightforward, the actual delivery of the materials may be delayed and fail to meet expectations. A simple delay in the initial or intermediate process will affect the delay in the entire process, making the end-user fail to get the commodities in time (**Schouten et al., 2011**). This is, therefore, a negative attribute in the sense that it affects the expectations of the end-user.

UNQUALIFIED OR SEMI-QUALIFIED STAFF

Staff in supply chain management are the main factor to consider. The ultimate aim of supply chain management is to achieve customer satisfaction and enhance healthy relationships between the firm and the customer. While semi-qualified staff pose a threat to customer satisfaction, unqualified staff are a bottleneck to the whole process. Staff are involved in the whole process, including production, distribution and marketing. The production staff should ensure that the goods or services are in the right and specified quality and also ensure that they meet standards. The marketing staff should be able to explain the goods just as they are. Negative attributes crops in where the marketing staff markets goods in a description which is not actual to the real product or service. This may convince the customer or the potential customer to have high expectations, only to be turned down when they get the actual product. It is, therefore, ethical for the marketing staff to explain the information factually. The distribution staff are used to take the goods where the marketers have passed by. These are able to demonstrate usage. Negativity comes where these staffs deliver what does not match the customer's order or where the wrong order is delivered to another wrong customer. This causes inconvenience to the customers and satisfaction is not attained. Therefore, supply chain management staff should be highly equipped with skills to handle every task to which they are employed to do.

POOR RISK MANAGEMENT

In addition to unforeseen delays and poorly skilled staff, poor risk management is an immense negative attribute of supply chain management, which poses a threat to supply chain management. Risks are dynamic, and therefore if the firm has inadequate risk management procedures will be caught up with. Global supply chain

management is confronted with various risks, some of which are political, cultural, climatic and even human. Terrorism is a global risk, which is a threat both to the personnel and the goods or services. If the management does not put in place the right procedures and processes of mitigating the risk, it will fail in its agenda (**Maleika & Kuriakose, 2008**).

THE GAP BETWEEN EVALUATION AND IMPLEMENTATION OF SUPPLY CHAIN IMPROVEMENT

In this section, we shall explore the gap between evaluation and implantation of supply chain improvement, then critically evaluate these in relation to the automotive industry. The evaluation process of supply chain management is an essential factor in achieving success. However, evaluating the process and failing to take the necessary steps makes the process ineffective.

The first gap between evaluation and implementation of supply chain management improvement processes is inadequacy or unavailability of resources. Knowing the areas to improve is one thing while getting the necessary resources is an entirely different thing. For example, if the evaluation of a company finds out that skills are deficient, the company may lack the resources to offer training. This presents a gap in implementing the evaluation. In the automotive industry, Man Truck and Bus Company identified a gap in employee communication. In a bid to implement this evaluation outcome, they developed an app to bridge the communication gaps. While Man Bus and Truck Company is a large company with many resources, some companies may lack this ability. An additional example is the Volvo Truck Company, which tries to achieve efficiency through the Lean process. This makes it invest many resources in achieving the efficiency it requires but is limited by resources.

The second gap in implementing the evaluation is managerial processes. While some management personnel are flexible, some are very stringent in implementing these evaluations. If the management is determined to achieve the results and recommendations of the evaluation, they will be a significant resource in the implementation. There is, therefore, a need to have flexible forward-looking management which is ready to embrace changes and implement the recommendations. For example, the management may only be driven to profits without necessarily considering customer satisfaction as a goal. This is a necessary step in making the process a success.

Lastly, the third gap in between evaluation and implementation of the process is poor communication, which can also be termed as broken communication. If the information and results of the evaluation are not rightly communicated to the concerned people, the implementation will not be achievable. There needs, therefore, to be clear channels and procedures of communicating the evaluation results to the relevant stakeholders. However, effective communication without the right support of the management and integration of other factors is a vain practice. The gap, therefore, can only be achieved through the integration of many factors in the company. The level of trust between the various stakeholders is also a significant gap in this implementation.

GLOBAL SUPPLY CHAIN ISSUES AND POSSIBLE SOLUTIONS

When looking at global supply chain issues, the first issue to consider here is an increase in international shipping volumes which increases exposure to trade regulations violations. The reason for this issue is that trade regulations are different regions are dynamic and to strike a balance between business needs and these regulations poses a challenge. For example, the USA and China trade tariffs caused a significant blow to Chinese business people who supply automotive materials for Ford Motors Company. Through these tariffs, have made it difficult for the Ford Motor Company to have a clearly smooth process in its supply chain. While this is an external factor, the company may not know how to solve it, unless they have serious talks with the government. In order to ensure compliance, every stakeholder should be equipped with updated knowledge on the trade regulations governing the areas they operate in.

The next issue is inconsistency in trade practices. This causes compliance issues. Global expansions come with new markets and acquiring of other operations. These expansions may come with other procedural requirements. The solution to this is to be readily prepared to handle any upcoming processes and procedures. The third issue associated with global supply chain management is the inability to keep with modern customs technology. Technology is changing, and firms must invest in keeping up with current customs operations in global markets.

CONCLUSION

The automotive industry is one of the key performers in the economy. There is a rise in the demand for vehicles in different parts of the world. There is, therefore, a need to embrace technology and use every opportunity to

explore the potential markets. With this, the efficiency in the delivery of services and goods will be achieved, which in turn will lead to happy customers.

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