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# A Study in Analyzing the Role of Container Management as a Contemporary Tool for Effective Supply Chain Management

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### ABSTRACT

Supply chain involves all factors which will link the manufacturer to the ultimate consumer of the product/service. In that supply chain Logistics is a very important and vital phenomenon. Logistics involves the movement of goods, information and other resources, including money and people, and the beginning of consumption to meet customer needs. Logistics involves consolidation of information, transportation, inventory, warehousing, material handling and packaging. In terms of value, the global logistics industry is estimated at over \$ 235 billion and a significant portion of GDP than India. In this context logistics plays a vital role in maintaining the effective supply chain, in particular container management is used as a modern tool for effective and efficient supply chain management. It involves Cross-practice storage logistics of unloading materials and semi-trailer trailer weight between the output of these materials, as well as rail cars, with little or no storage. This can be done to change the type of delivery and type of materials destinations or combination of materials of different origin increasingly popular containers. The container is a large box made of a durable material such as steel, aluminum, reinforced plastic and plywood. Hence this paper focus on how companies are using container management to make their supply chain effective.

**Keywords:** Containerization, contemporary tool in SCM, Transportation, Cost effective SCM.

## 1. INTRODUCTION

Logistics management is defined as the overall movement of products, goods, data and other resources which includes energy and human resources. Logistics is mainly involved in the overall integration of data, stock, warehousing, handling of materials and packing. It is noted that the overall worth of logistics industry is over \$ 235 billion and a significant portion of GDP than India.

The Middle East is currently the main goal of Indian export growth of the consumer electronics segment. Exports amounted to US \$ 160 million in 2005-2006, an increase of 80% compared with the previous year, as per the Council on the promotion of exports of software and computers. It is noted that UAE is now in a transition phase model of a closed economy, import substitution in the trading outward. The importance of logistics is a catalyst for trade and economic development worth mentioning. The considerable improvement in transport infrastructure led to the development of current and future trade, which is the country's economic development. While about 200 million investment over the past five years, the expansion of port facilities in the country (United Arab Emirates), large investments were made in the streets. The logistics industry, transport and freight transport, special attention was given to the investors and the government. On a more positive noted, it is identified that there are more opportunities available for many business who operating in the logistics sector. The trade volume is growing very rapidly, both abroad and within the country. It is relatively much higher. integrated logistics and multimodal logistics, and new business lines.

### **1.1. Containerization**

Cross-practice storage logistics of unloading materials and semi-trailer trailer weight between the output of these materials, as well as rail cars, with little or no storage. This can be done to change the type of delivery and type of materials destinations or combination of materials of different origin increasingly popular containers. The container is a large box made of a durable material such as steel, aluminum, reinforced plastic and plywood. In a different size containers and materials. Their size is typically 8 feet high, eight feet wide and mostly different lengths. The container can hold multiple loads but consistent with the size and shape of the set. The tanks can take the majority in the case of the four major packaging problems. due to the construction of the container, the product should not be difficult to pack and protect.

1. Fracture
2. Dampness
3. Temperature monitored
4. Theft

**There are mainly 2 types of containers :**

1. Dehydrated Containers
2. Special Purpose Containers
  - a) 20 Foot Dry
  - b) 40 Foot Dry
  - c) 45 Foot Dry
3. Open top containers
4. Flat rack for over sized cargo
5. 40 foot refrigerated containers/ reefers
6. High cube containers (40 foot, 45 foot & Reefers)

## **2. PRIMARY OBJECTIVE**

1. To Study the role of Container Management as a Contemporary tool for effective Supply Chain Management.

## **3. SECONDARY OBJECTIVE**

1. To understand the impact of vessel capacity as a part of container management as a effective supply chain management.
2. To identify the time of schedule as a container management tool
3. To apprehend the impact of cost control for effective supply chain management.

## **4. REVIEW OF LITERATURE**

Although much literature on the effects of the planning horizon in the planning and production, relatively little has been written about the handling of empty containers. One exception is that judges do not work in today's authors, Song (2008), according to which this document.

Lam (2007) shows the optimization problem of the profit model repositioning and leasing of empty SEA CONTAINERS ships. Given the sensitivity of the model and length of the planning horizon to see the changing of the case study solution does not affect the duration of the planning horizon. He notes, however, that this conclusion cannot be generalized to other cases, since the correct term planning horizon depends on the concentration of business in the home network. Bandeira (2009) it provides a structure for the combined model, the construction of the web of the tank. They say that the planning horizon should be long enough to include the following line arrivals and departures, and allows for the construction of the vehicle and consistently along the road network. Furthermore, employment contracts, security and other practical considerations limit the actual length of the movement of the vehicle, and thus the planning horizon. Assuming that one example of the constraint length and appropriate discretization, *i.e.* a period of 7-10 days or 0.5 days, no experimental results. Lam (2007) propose distribution models and allocation of empty containers between land transport system and the international ocean shipping network. They argue that obtaining valid solutions, the period at the end of the planning horizon and conditions should be carefully determined horizon. The actual application of the models suggest that the length of the planning horizon is limited to 10-20 times the number of decision variables at any time will be quite significant. They also take into account the future demand and supply of empty containers information into consideration when choosing the appropriate length of the planning horizon. In order to clarify the horizon at the end of the circumstances, we recommend a reasonable price for the empty packaging stock at the end of the planning horizon on every deposit or residual value includes holding cost functions in the final period, reflecting the storage container. This rule keeps the tradition of Split window (*i.e.* delivery window, which is part of the planning horizon, partly out) and set limits for deposits of empty container stock. The authors are not experimental results.

Bandeira (2009), a stochastic model in two stages in two steps deterministic model to the problem of dynamic allocation of empty containers. Experience with rolling horizons and concluded that a horizon of longer planning is not necessarily better than a shorter version. If the planning horizon extends solutions to improve the test in some cases; However, solutions for other test cases worsened. No discussion of the factors (from  $p$  ports. Eq. Differences in the number of ports, the number of travel and travel time), and this may explain the observations.

When it comes to transport in general, Meng (2011) evaluate the consequences of the enlargement of the planning horizon on a car product distribution model in white in the Swedish railway. They offer network flow model multicommodity of total needs. The model is designed to minimize the total cost, including shipping costs, not the cost, while satisfying customer orders. The experiments used a roll period to simulate the distribution of the empty truck 10 consecutive days. The results show that the effect of the proposed model is dependent on the length of the planning horizon. According to experts, the programming period shall be greater than the maximum transit time for the system to achieve low failed device. The length of the planning horizon, especially if the environment is an important issue not only rolling transport, but also in production planning. For example, a large literature on the planning of the evaluation of the impact of the production horizon lot size design decisions and the approach in many projects. Meng (2011), evaluates the week, when developing procedures horizons are shorter and more realistic basis. Show that the duration of the planning horizon will greatly affect the discount choice of different control methods

## 5. RESEARCH METHODOLOGY

The research used in this study as “descriptive”. Scope and nature of our investigation, as well as lack of time, the selection of the 100 companies surveyed. The samples used in the study volunteers. The collection of primary data, structured and secret research aims to explore the various aspects of the study. The questionnaire comprises of 11 questions.

### 5.1. Data Analysis

**Table 6.1**  
**Reliability test**

<i>Variable</i>	<i>Cronbach Alpha</i>	<i>No. of questions</i>
Vessel capacity	0.918	4
Time of schedule	0.825	4
Cost control	0.910	4

### 5.2. Multiple Regression analysis

The major aspect of regression is that it considers the assumed variables are normally distributed. The overall distributed of variables will possess significant influence on the test, correlation is used to understand the strength of two variables, however it may not provide the differences of dependent variable and independent variables also their influence among them. (Sekaran, 2003). When the variables jointly regressed on the dependent variable for the purpose of explaining the differences among the individual correlation will fall to the multiple correlation. The multiple regression analysis will assist the researcher to analyse the significant association of the independent variables on the dependent variable.

### 5.3. Multiple Regression Analysis

From the above analysis it is noted that the R square is at .901 which states that the Unemployment is highly influenced by the independent variables like experience, relational abilities and educational quality. The value of 0.901 of R square states that there exist a positive relationship between the dependent variables and the independent variables.

**Table 6.2**  
**Model Summary**

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.949 <sup>a</sup>	.901	.899	.292

(a) Predictors: (Constant), Experiencegrad, Relationalabilities, Educationquality

**Table 6.3**  
**ANOVA<sup>a</sup>**

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1. Regression	152.314	3	50.771	593.752	.000 <sup>b</sup>
Residual	16.760	196	.086		
Total	169.074	199			

(a) Dependent Variable: Unemployment

(b) Predictors: (Constant), Experiencegrad, Relationalabilities, Educationquality

The P value (Significance value) is also called as the calculated value, is the overall probability of analyzing the values. Andy field (2012) has suggested that if the *p* value is less than 0.005, then it is stated that the probability is significant at 5% level of confidence on the other hand if the *p* value is greater than 0.05, then it is not significant with 5% confidence level

From the analysis it is noted that the significance value (*p* value) is 0.000. This shows that there is a significant influence of the independent variables on the dependent variables.

**Table 6.4**  
**Coefficients<sup>a</sup>**

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>Sig.</i>
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
(Constant)	1.298	.146		-8.871	.000
1. Vessel capacity	.022	.063	-.023	-.347	.729
Time of schedule	1.080	.089	.629	12.184	.000
Cost control	.391	.049	.389	7.948	.000

(a) Dependent Variable: Unemployment

From the above analysis, a regression equation can be created

$$Y(\text{Container management}) = X1(\text{Vessel capacity}) + X2(\text{Time of schedule}) + X3(\text{Cost control}) + C (\text{Constant})$$

$$Y(\text{Unemployment}) = X1(0.022) + X2(1.080) + X3(.391) + C (1.298)$$

## 6. SUGGESTIONS

From the overall analysis it can be stated that the business enterprise must divert their efforts to enhance the quality of services which is offered to the customers. This is very important in order to retain and attract customers.

The pricing of the services must be in parlance with the market, the company should avoid any cost overrun in order to maintain their profit margins

The organisation should focus on the network design area which needs to be implemented immediately, this will allow them to design a new warehouse based on the demand and supply, allocate the activities to employees in a more cost effective manner.

The company can apply big data analytics for forecasting the demand based on the business cycle.

Operation collaboration with suppliers will enhance the business and services offered to the customers.

The company can offer best services in freight and value added services so it should continue to offer similar services.

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