

A STUDY ON EFFECTIVENESS OF WAREHOUSE MANAGEMENT AT AAI CARGO LOGISTICS AND ALLIED SERVICES LTD

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ABSTRACT

Warehouse is very important success or failure of businesses. Warehouses play a critical intermediate role between supply chain members, affecting both supply chain costs and service. to rationalize supply chain processes and to manage them more efficiently, many companies have set up centralized production and warehouse facilities over the last decades. This has resulted in larger warehouses responsible for the distribution to a greater diversity of more demanding customers in a vaster region and, consequently, with more complex internal logistic processes. In the present study, efforts are taken to analyze the factors contributing to the effectiveness of warehouse management at Airport authority of India. The findings of the study indicate that the warehouse equipments, safety issues and infrastructure play a critical role in determining the effectiveness of warehouse.

Keywords: Warehouse, Equipments, Safety, Infrastructure, Logistics.

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INTRODUCTION

Warehouse processes that need to be planned and controlled include inbound flow handling, product-to-location assignment, product storage, order-to-stock location allocation, order batching and release, order picking, packing, value-added logistics activities, and shipment. Storage and order picking are complex, often labor-intensive processes that determine warehouse performance to a large part.

First contribution is to define and make measurable the core characteristics of warehouse management. There is currently hardly any literature that clearly captures warehouse management as a coherent whole because a first step in exploring the dimensions of warehouse management and consider warehouse management at a high level of aggregation. They propose and define the constructs necessary to do this, focusing on both planning and control activities within the warehouse and on the decision rules used to schedule and optimize the inbound, storage, and retrieval processes in the warehouse.

Second, they establish and test the drivers of warehouse management. Task complexity

measures the depth and breadth of the tasks a warehouse has to perform and is internally oriented. Market dynamics measures the rate of change of the external environment in which a warehouse operates. In general, warehouse task results in more complex decision rules for scheduling and optimizing inbound, storage, and outbound activities. Warehouse planning and control depends both on the complexity of the warehouse task and on the dynamics of the market.

Third contribution relates to a specific aspect of warehouse management. Information systems play a significant role in managing complex processes. They assess the degree to which the drivers of warehouse management impact the specificity of the information system. Establishing the dependency of the WMS's specificity on these organizing warehouse management drivers may help managers to decide on the most effective information system to suit the warehouse management's needs. Since much standard warehouse management software systems are available on the market.

Warehouse management (information) system

Information systems support warehouse management. Such information systems can be either built specifically for a warehouse or bought off-the-shelf (standard software package). Software is primarily focused on broad or specific functionality. A software product with broad functionality supports a large number of different processes in an organization such as ERP system. ERP

systems can be configured to the customer's processes, the fine-tuning is complex and configuring the system involves making compromises and has its limits. Software products with specific functionality support a smaller number of processes in an organization but with more intensity such as WMS. The specificity of the information system will differ per warehouse. They define the construct information system specificity by distinguishing six different types of information systems with an ascending degree of specificity.

OBJECTIVES OF THE STUDY:

1. To study the effectiveness of warehouse management at AAICLAS
2. To identify the storage facilities at warehouse of AAICLAS
3. To study about the documentation process inspected by AAICLAS
4. To analyze the type of material handling used for warehouse connectivity at AAICLAS

NEED FOR THE STUDY

The present study helps in understanding the factors contributing to the effectiveness of warehousing at Aaiclas. It also helps in determining the various Cargo handling methods at the Air Cargo Complex. This study focuses on knowing the techniques that can be used for reducing wastage in the warehouse. It also specifies the appropriate

storage procedure for various types of goods in the warehouse. From this study, the best method of using the space inside the warehouse could be ascertained.

REVIEW OF LITERATURE

Gunasekaran, H.B. Marri Brunel University F. Menci (2018). An attempt has been made in this paper to study the effectiveness of warehousing operations, its requirements and the benefits it may bring. A conceptual model has been developed to improve the effectiveness of warehousing operations. Also, a case study has been conducted for goods-inwards operations in one of the sections of the warehousing operations in Lucas at Acton, UK. Finally, the summary of findings and recommendations from the case study are presented in this paper. This paper stresses the importance of efficient warehouse management, since the activities performed in a warehouse environment have a direct influence on the overall effectiveness of a company and its customer service levels.

It is essential to ensure that there is a sound warehousing methodology in operation, whereby the distribution of goods from the production line to the customer takes place economically and punctually, using a shortest-path philosophy, and avoiding unnecessary waiting time. In addition to this, the following may improve the warehousing efficiency: moving to make-to-order system; pull production system; electronic data interchange; eliminating incoming goods inspection to a minimum level; improved

accuracy of the forecasting; and, minimum personnel in GI system.

(Source : Gunasekaran, H.B. Marri Brunel University F. Menci (2018) "Improving the effectiveness of warehousing operations: a case study", *Industrial Management & Data Systems*, Vol. 99 Issue: 8, pp.328-339)

Dinar Dewi Kania1 et al (2017), The risk level of activities in outbound and inbound warehouses is essentially similar. But each type of work has an extreme and high risk level that is different from one another due to the variety of the work environment, handling, and nature of the work. The mitigation control programs should be implemented to reduce the level of risk in the airport warehouses which include the administrative control and increased awareness of workers in using personal protective equipment (PPE). To improve the safety behavior, the management should consider employing the Behavior-Based Safety (BBS) approach to create active caring behavior among the workers. The active caring behavior will make the workers perform their jobs with full awareness and behave safely without excessive pressure from rules or regulations.

(Source: Dinar Dewi Kania1 et al "Improving safety behavior in airport cargo warehouse" published in Conference on Global Research on Sustainable Transport (GROST 2017))

Sneha Vishnu (2016) As a result of global competition and supply chain concepts, including a focus on integral inventory

control, warehousing has become a critical activity in the supply chain to outperform competitors on customer service, lead-times, and costs. Timely and accurate information about products, resources and processes are essential to operationalize a planning and control structure that effectively and efficiently achieves the high performance of warehouse operations required in today's marketplace. Warehouse complexity affects the planning and control structure through the comprehensiveness of the work to be done. In highly complex warehouses, feeding organizational actors with the right type of information and knowledge at the right time is difficult. Nonetheless, a complex warehousing operation requires a control structure that has a great deal of information, data, and knowledge about products, processes, customers, and resources readily available.

Thus, Optimization strategies are utilized to position product availability and delivery as a competitive advantage while also optimizing the cost trade-offs associated with transportation, facilities, equipment, workforce, and other critical cost variables. Distribution center also facilitate time utility by storing product until it is demanded.

(Source: Sneha Vishnu More (2016) "The study of Efficiency and Effectiveness of Warehouse Management in the context of Supply Chain Management" published in International Journal of Engineering Technology, Management and Applied Sciences www.ijetmas.com August 2016,

Volume 4, Issue 8)

Ramaa.A, K.N. Subramanya, T.M.Rangaswamy (2012) As an impact of large product varieties and shortened customer response times there is a greater emphasis on the ability of the organizations to establish smooth and efficient logistics operations. In this regard, warehouses play a vital role because they function as nodes that direct the flow of materials within a distribution network. The effects of organizing warehousing activities can directly be seen in customer service levels, lead times, and the cost structure of a company. Hence we can conclude that warehousing influences the performance of an entire supply chain. With the boom in organized retailing it becomes necessary for the players to continuously improve their process.

The retailers have to strive continuously to reduce their costs. Technology being an enabler improved technology has to be incorporated into the current processes. Also the processes have to be designed in such a way that they provide for incorporating changes. The value stream mappings of the current systems showed many bottlenecks that prevail in the system. These bottlenecks restricted the capacity the warehouses could handle. Performance and productivity of the warehouse suffered as the operations were manually carried when it could be more easily and more effectively done using machines. With WMS implementation the cycle time of the process also decreases. The

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cycle time reduces from 773 minutes to 236 minutes. The cost benefit analysis for WMS implementation in warehouse shows a savings of Rs. 19,60,000 per month. The study proves WMS to be an enabling factor for performance and productivity improvement. The productivity of a WMS warehouse is way higher than when the operations are manually performed.

(Source : Ramaa.A(2012) "Impact of Warehouse Management System in a Supply Chain"

Published in International Journal of Computer Applications (0975 - 8887) Volume 54- No.1, September 2012)

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the problem. In this the researcher studies about the various steps that are generally adopted in studying is research problem along with logic behind them. Research methodology has many dimensions and research methods to constitute the part of the research methodology. It is necessary for the researcher to know not only the research methods/techniques, but also the methodology.

Research Design: The present study is Descriptive in nature.

Sampling Unit: It is a set of elements considered for selecting a sample. In this research, survey from clients associated with

AAICLAS were taken

Sampling Method: Convenience sampling technique is used in this method.

Sample Size: A total of 81 respondents were chosen for the study.

CORRELATION

To study the relationship between the waiting time for the goods moved into the warehouse and system used for speedy material movement

		system used for speedy material movement	Waiting time for goods to be moved into the warehouse
system used for	Pearson	1	.198
speedy material	CorrelationSig.		.126
movement	(2-tailed)	61	61
	N	.198	1
Waiting time for	Pearson	.126	
goods to be moved	CorrelationSig.	61	61
into the warehouse	(2-tailed)		
	N		

INFERENCE: The Pearson correlation coefficient r is 0.198 which implies there is a positive relationship between the waiting time for the goods that are moved into the warehouse and system used for speedy material movement.

CHI-SQUARE

Null hypothesis (H0): There is no association between the size of the firm and the system used for speedy material movement

Alternate hypothesis (H1): There is association between the size of the firm and the used for speedy material movement

		Sophisticated system used for speedy material movement			Total
		Fork Lift	Cranes	Electric Bikes	
Size of the firm	Small Scale	0	4	2	6
	Medium Scale	0	11	20	31
	Large Scale	1	10	13	24
Total		1	25	35	61

	Value	D f	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.662 ^a	4	.004
Likelihood Ratio	3.940	4	.001
Linear-by-Linear Association	.000	1	.000
N of Valid Cases	61		

Inference: The significance value is <0.05 , Null hypothesis (H0) is rejected. There is association between the Size of the firm and the system used for speedy material movement.

FINDINGS OF THE STUDY

The findings of the study indicate that safety and security of warehouse is significant in determining its effectiveness. Further, the storage facility is considered to be pivotal in maintaining efficiency of operations in the warehouse. The study also indicates that for ensuring smooth flow of materials and to reduce wastage of time sophisticated equipments and procedures are critical. The maintenance and documentation

of various records pertaining to warehouse is performed systematically.

SUGGESTIONS AND CONCLUSION

The study on effectiveness of warehouse management at Aaiclas indicates that warehouse services and infrastructure must be maintained as per the specification made by the clients.

Minimizing travel time between picking locations within the warehouse can greatly improve productivity. Warehouse management is also important in achieve greater efficiencies. AAICLAS must develop processes to regularly monitor picking travel times and storage locations within the warehouse. Warehouse operations that still use hard copy pick tickets find that it is not very efficient and prone to human errors. To combat this and to maximize efficiency, world class warehouse operations had adopted technology that is some of today's most advanced systems. In addition to hand-held RF readers and printers, companies are introducing pick- to-light and voice recognition technology.

Warehousing clearly has a critical part to play, in all aspects of supply chain management. It also needs to be involved in the strategic aspects of a business.

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