

Performance Evaluation and Problems Identifications in Warehouses of THIRD-PARTY Logistics

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Abstract— From the last decades, Supply Chain Management (SCM) has been advanced as an important administration way of life and exercise for all professional processes. Its scope is rapidly increasing in the field of industrial manufacturing and service sectors across the globe. As with other business management principles, it is also used as a tool the Third Party Logistics (3PL). Presently, SCM stakeholders are determined their best to spread out their support with its down-stream consumers and up-stream merchants to accomplish a lasting objectives., the concept of warehousing & Physical Distribution appears to be a significant area of the SCM and is being measured for assessment and improving by implementing the SCM techniques to increase the efficiency and profitability as a whole. This research work focuses and identifies the problems in the warehouses of 3PL third-party logistics) firm and DAMCO Pakistan is considered as the main component of research, DAMCO, is a prominent third party service providers concentrating in modified goods forwarding and supply chain management facilities. The third-party logistics (3PL) performance was assessed while considering the four C.O.R.E. factor (i.e., Control, Optimize, Reporting and Execution). Finally, the performance of 3PL was evaluated in terms of Damage rate, Reliability and Flexibility. This paper helps the manufacturers to evaluate the 3PL firms before availing their services and may improve quickly by winning the orders while developing collaboration between warehousing management systems & transportation management systems.

Keywords: Supply Chain Management (SCM), Performance evaluation, Warehousing & Physical Distribution, Third-Party Logistics (3PL), DAMCO.

I. INTRODUCTION

This research focuses on “Performance Assessment & Warehousing issues/Problems of Third-Party Logistics (3PL)” and the organization is one of largest freight forwarding organisation DAMCO, PAKISTAN, The major customer or service utilized of this organization in Pakistan is YUNUS TEXTILE MILLS. The research mainly highlights the processes of the textile mill as well as the shipper i.e. DAMCO, PAKISTAN. It is a prominent third party logistics service providers concentrating in personalised goods forwarding and supply chain management facilities. Since last several decades, it has been facilitating their clients with transportation and logistics answers that helps the means they want to do trade, anywhere they remain in the domain. They identify supply chain improvements for a worldwide technology consumer, using outsourced logistics and reallocation of regional distribution centre hubs. It is the joint trademark of the Maersk Group's logistics activities formerly recognised as Maersk Logistics and DAMCO. The firm have 11,000+ workforces in over 300 work place around the world and a worldwide existence in near 100 states. The system of firms that are involved, over and done with logistical activities in upper streams and lower stream, in the dissimilar procedures and actions that produce importance in the terms of goods and facilities provided to the end customer. From Christopher Martin L. (1992).

II. Third Party Logistics (3PL)

"A company that delivers numerous logistics services for use by customers. Preferably, these services are cohesive, or put together, by the provider. Among the services 3PLs delivers' are transportation, warehousing, cross-docking, portfolio management, packing, and goods forwarding." (The Council of Supply Chain Management Professionals glossary, Updated February 2010)

Presently, Logistics Outsourcing has received increasing attention from researchers and experts in current times. Outsourcing enterprises act as third party logistics and help to grow the efficiency and effectiveness of a business's logistics function (Christopher, 1992). Third party logistics is well-defined as the outsourcing of logistics activities to added firms such as transportation, warehousing, portfolio management, circulation, and other value-added services (for example, pick & pack, assemblage, repairs, and re-conditioning) (Lau,1999).

The writings on the logistics business is in great quantity in the practise of pragmatic study and appraisals of the current writings from the customers' point of view. However, it is still unusual since the viewpoint of 3PL logistics.

III. Warehousing

A warehouse is a place where an organization clamps raw resources, semi-finished products, or finished products/goods for a variable span of time (Keebler and Durtsche, 2001). The core procedures for the barns cast-off in this learning comprise all inbound, outbound, and inventory control activities. These are as follows:

Receiving: Put-Away: Picking: Packing: Shipping: Other Processes:

IV. Performance Evaluation:

The writings on performance evaluation has full-grown continually then its appearance in the 1980s. Over all, when firms were minor and procedures are artless, the main performance assessment was done on centre of the cash stream of the firm. From the late 19th century till 1930s, hypothetical and practical tactics of management accounting were recognised, and principles were broadly implemented. (Maskell, 1991).

V. AIMS AND OBJECTIVES

This study aims at observing the current status and problem identification in the warehousing processes of the third party logistics firm DAMCO, Pakistan, and finding valid suggestions to overcome those issues, so as to be fruitful for every third party service providers working in developing countries. Identifying nonvalue added activities in a service providing firms and evaluation of their performance by KPIs of transportation. This study was carried out at a globally renowned company located in Karachi, and warehouses near Port Qasim, Karachi, Pakistan and the research has been done on their warehouses and shipment procedures on a case study ‘YUNUS textile to WALMART US’.

VI. METHODOLOGY

As previously discussed, our topic is divided into Performance Evaluation & Warehousing Problem Identification. Firstly we have started visited warehouses of DAMCO Pakistan, located near, Port Qasim Karachi. With our bunch of questions regarding the warehouses and their issues related to it. A really good response from the warehousing team we have collected the date and the issues of the warehousing related to working shipment processes. The questionnaire will be shown on the request. The questionnaire was based on warehousing problems and actual working in the warehouses and its proper utilization for the processes. The questionnaire includes:

Types of products deal with. Types of containers use, handling requirements of the container, specific storage requirements, loading unloading times for container, total space of the warehouse in square yards, services regarding warehouses DAMCO provide, information flow soft wares or EDI (electronic data interchange) etc. And next step towards our further topic i.e. Performance Evaluation, we moved forward to it, firstly we start visiting YUNUS TEXTILE to understand their textile related processes and then the export procedures related to DAMCO PAKISTAN. We have done a case study addresses shipment from YUNUS TEXTILE to WALMART, US via DAMCO, PAKISTAN. The case study will be shown and discussed in next.

The performance evaluation is based on our case study, the third-party logistics (3PL) performance was assessed while considering the four CORE factor (i.e., Control, Optimize, Reporting and Execution) & in it we consider Key performance metres (KPIs) Damage Rate, Reliability and Flexibility.

VII. Key Indicators in Transport:

VIII. The value of transport can be determined by means of a classification of important metres. This analysis emphases on the transportation expenditures, the linked dimensions and the quantifiable proficiency of the transportation. Four efficiency and capability metres are engaged in this procedure: transportation costs per stack KM, transportation costs per goods and the transportation utilization levels I and II. The particular qualitative competence of the actual means of transportation must be reflected in assessing the efficiency of the transportation structure. Encompassed at this point are the transport times, transportation reliability and transportation flexibility.

IX. CASE STUDY:

Buyer/Consignee	WALMART USA
Goods Provider/Shipper	YUNUS Textile Mills, Pakistan
Forwarder:	DAMCO, Pakistan
Goods Type:	Garments
Purchase Order (P/O) Number:	1234567890
Booking Submission Date:	10-October-2015 (SW Start date-14 days)
Target Date/ Cycle Time:	17 Days (136 hours) 8 hours/day.
Shipment Window:	28th-October-2015 to 2nd-November-2015
Total order Units:	2500 units (cartons)
Total CBM:	300 CBM

PERFORMANCE OF THE TRANSPORT SYSTEM THROUGH TRANSPORT SYSTEM INDICATORS

PERFORMANCE INDICATOR NO.1 : TRANSPORT DAMAGE RATE

$$\text{Transport Damage Rate} = \frac{\text{Number of Damage Transport Units}}{\text{Total Number of Transported Units}} \times 100$$

In our case study we observed,

$$\text{Total Number of Transported Units/Cartons} = 2500$$

$$\text{Number of Damage Transport Units/Cartons} = 10$$

$$\text{Transport Damage Rate} = \frac{10}{2500} \times 100$$

$$\text{Transport Damage Rate} = 0.004 \times 100$$

$$\text{Transport Damage Rate} = 0.4 \%$$

PERFORMANCE INDICATOR NO.2 : TRANSPORT RELIABILITY

$$\text{Transport Reliability} = \frac{\text{Number of On-Time Transports}}{\text{Total Number of Transports}} \times 100$$

In our case study we observed,

$$\text{Total Number of Transports} = 6 \text{ (5 = 40 STD \& 1 = 45 STD)}$$

$$\text{Number of On-Time Transports} = 6$$

Hence the Transport Reliability is,

$$\text{Transport Reliability} = \frac{6}{6} \times 100$$

$$\text{Transport Reliability} = 1 \times 100$$

$$\text{Transport Reliability} = 100 \%$$

PERFORMANCE INDICATOR NO.3 : TRANSPORT FLEXIBILITY

$$\text{Transport Flexibility} = \frac{\text{Number of Fulfilled Transport Specifications}}{\text{Total Number of Transport Specifications}} \times 100$$

In our case study we observed,

$$\text{Total Number of Transport Specifications} = 5 \text{ (Carriers Providing, Custom Clearance, Freight Forwarding, Shipment \& Warehousing)}$$

$$\text{Number of Fulfilled Transport Specifications} = 4 \text{ (Carriers Providing, Freight Forwarding, Shipment \& Warehousing)}$$

Hence the Transport Flexibility is,

$$\text{Transport Flexibility} = \frac{4}{5} \times 100$$

$$\text{Transport Flexibility} = 0.8 \times 100$$

$$\text{Transport Flexibility} = 80 \%$$

X Warehousing Data Collection and Problem Identification & Valid Suggestions:

<u>PROBLEM IDENTIFICATION:</u>	<u>VALID SUGGESTIONS:</u>
<p>1. THE CUSTOMER DECIDES EVERYTHING WHICH MEANS DAMCO CANNOT ACT ON ITS OWN, WHICH MAKES IT DIFFICULT TO FORECAST & PREDICT THE PATTERNS & BEHAVIOUR OF THE CUSTOMERS. THE VERSATILE NATURE OF THE CUSTOMER ULTIMATELY CREATES CONFUSION IN THE MINDS OF THE MANAGER OF HOW TO PREPLAN THE SITUATIONS. IF DAMCO CAN PREDICT CUSTOMER BEHAVIOUR IT WOULD BE A PLUS POINT & WOULD SAVE TIME.</p>	<p>CUSTOMER PATTERN RECORDS SHOULD BE MAINTAINED FOR THE AID OF MANAGER FOR MAKING QUICK DECISIONS.</p>
<p>2. IN TRANSFERS FROM DOOR TO DOOR, THE RESPONSIBILITY IS DIVIDED BETWEEN LOCAL DAMCO & DAMCO ABROAD SO THE FATE & RESPECT OF LOCAL DAMCO GETS IN THE HANDS OF DAMCO ABROAD WHICH WILL AFFECT THE RELATIONSHIP OF LOCAL CLIENT & SHIPMENT RECEIVER THERE.</p>	<p>SAME STANDARDS & COMPETENCE LEVEL SHOULD BE MAINTAINED THROUGHOUT ALL BRANCHES OF DAMCO BECAUSE ONE MISTAKE CAN COST CUSTOMERS TRUST.</p>
<p>3. DAMCO HAS A TEAM OF TRUSTED & TRAINED DRIVERS WHICH ARE CALLED ACCORDING TO THE NEED, BUT THEY DO NOT HAVE A PERFORMANCE EVALUATION OR RATING SYSTEM FOR THE DRIVERS, SO THAT THEY CAN GET REWARDED ACCORDING TO THEIR PERFORMANCE WITH SOME BENEFITS & INCENTIVES & ALSO TO MOTIVATE THE AVERAGE DRIVER TO COME FORWARD, GAIN EXPERIENCE, LEARN EXPERTISE TO REDUCE TRANSPORTATION TIME & COST.</p>	<p>THEY SHOULD MAKE LEARNING CURVE CHART FOR THE DRIVERS WHICH WILL HELP TO CATEGORIZE THE CLASSES OF DRIVERS FOR I.E. S CLASS, A CLASS, B... ETC.</p>
<p>4. IT IS ALWAYS BETTER TO WRITE EVERYTHING DOWN BUT IN THE CASE OF DAMCO IT HAS SCARDA (SUPERVISORY CONTROL AND DATA ACQUISITION) NETWORK (WEB PORTAL) AT HIS DISPOSAL, SO WHY THERE IS STILL NEED OF MAKING EVERYTHING HARD COPIED, ON THE CONTRARY THEY CAN SAVE A LOT OF MONEY THAT IS USED UP IN PRINTING.</p>	<p>MOST OF THE ABOVE DOCUMENTS ARE MAINTAINED BY OR FOR THE IT DEPARTMENT WHILE THE IT DEPARTMENT SHOULD UNDERSTAND ITS NAME & SHOULD CUT COST BY AVOIDING BOOKKEEPING & REGISTRATION COST TO A MINIMUM, FOR WHICH THEY CAN APPLY LATEST INFORMATION TECHNOLOGY PRINCIPLES.</p>
<p>5. DAMCO USES THE OPTIMUM ROUTES TO THE PORT BUT IF SOME PROBLEMATIC SITUATION OCCURS LIKE A STRIKE, THEY USE ALTERNATIVE ROUTES WHICH ARE LONGER THAN PRESCRIBED ROUTES, WHICH MEANS AN INCREASE IN COST, BUT THEY ARE BOUND BY CONTRACT & CANNOT CHARGE EXTRA.</p>	<p>DAMCO CAN AVOID TAKING RISKY ORDERS WHICH ARE FOR REMOTE AREA OR HAVE PREVIOUSLY MADE LOSE TO THE ORGANIZATION. ALSO, THEY CAN HOLD THE ORDER IF THEY HAVE SLACK TIME IN THEIR GRASP, UNTIL THE POLITICAL INSTABILITY OR STRIKE SITUATION IS OVER.</p>
<p>6. THE AUDIT IS CHECK & BALANCE OF THINGS AFTER THEY HAVE INCURRED, LITERALLY IT MEANS CALCULATING THE DAMAGE THAT HAS BEEN DONE SO IT'S A REACTIVE APPROACH BUT NOW IN THE MODERN ERA MANAGERS ARE FOCUSING ON A PROACTIVE APPROACH. AUDIT ONLY SPOTLIGHTS THE ISSUES, BUT A BIG ISSUE LIKE WASTE & SUPPLY CHAIN LIQUIDITY CAN ONLY RESOLVE BY USING MODERN TECHNIQUES LIKE LEAN, KAIZEN ETC.</p>	<p>THE USE OF OUTDATED FORMULA'S & TECHNIQUES WILL BRING HARM TO THE ORGANIZATION AND SHOULD BE AVOIDED IF POSSIBLE.</p>

<p>7. ABOVE FIVE WASTE CAN BECOME A HEADACHE FOR AN ORGANIZATION SO IT'S HARD TO BELIEVE THAT ONLY CLOSE COORDINATION CAN WORK WONDERS. CLOSE CO-ORDINATION MIGHT BE NECESSARY THOUGH BUT WHAT IF THE PROBLEM LIES ELSEWHERE OR DOES NOT RELATE WITH THE PLANNER, WORKFORCE OR EVEN THE MANAGEMENT. IN THIS PERSPECTIVE THE PROBLEM LIES IN THE SYSTEMATIC APPROACH, THAT'S THE SOLE REASON WHY DAMCO SHOULD NOT NEGLECT 5S (SORT, SYSTEMATIC ARRANGEMENT, SHINE, STANDARDIZE, SUSTAIN) & LEAN MANUFACTURING APPROACH OF REDUCING WASTE.</p>	<p>DAMCO SHOULD RELY ON THEIR CLOSE CO-ORDINATION APPROACH BUT SHOULD ALSO LOOK TO THEIR COMPETITORS OF WHAT THEY HAVE IMPLEMENTED AND ACHIEVED.</p>
<p>8. CURRENTLY, NO REAL STEP HAS BEEN TAKEN BY DAMCO TO REDUCE THEIR LEAD TIME THEIR VIEW IS OF CLOSE CO-ORDINATION, LINKS & UNDERSTANDING BETWEEN DAMCO & ITS CLIENT WITH THE AID OF THEIR WEB PORTAL BUT THE REAL THREAT IS SOMEWHERE ELSE. THEY DO NOT REALLY OPTIMIZE ANYTHING, ANYWHERE THROUGH A SYSTEMATIC MODEL BUT THEY WORK THROUGH THEIR INSTINCT AS WE OBSERVED IN AIR TRANSPORT ROUTES, WORKFORCE NEEDED, AND CONTAINER LOADING, THEY JUST TAKE RISK AND TO MANY CHANCES THEY SHOULD MAKE MORE USE OF THE DATA LIKE "MOST PLACED ORDER, MOST ORDERS FOR A COUNTRY, MOST LOYAL CUSTOMER ETC." IN AN ORGANIZED WAY TO GET BENEFITS WHICH CAN REDUCE THEIR TIME OF EVERY LITTLE ACTIVITY. ANOTHER PROBLEM IS THAT THEY NEVER BREAK DOWN DIFFERENT PHASES OF THEIR WORK AND ARE TO FOCUSED ON ARRIVAL DATE, EXPECTED HANDOVER DATE & TOTAL TIME THAT THEY NEVER REALLY CARE OR ARE NOT SERIOUS ABOUT EACH SMALL ACTIVITY LIKE WHAT IS THE OPTIMUM QUANTITY OF WORKERS NEEDED TO LOAD A CONTAINER SWIFTLY, AND HOW MANY PERSONS CAN PICK HOW MANY PALLETS AND HOW FAR THE PALLET SHOULD KEPT FROM THE WORKER OR THE DOOR/OUTLET TO OPTIMIZE THEIR HUMAN RESOURCE & REDUCE THEIR TRANSPORT TIME.</p>	<p>TIME STUDY & OPERATION RESEARCH.</p>

X. RESULT AND ANALYSIS

In the previous chapter, we have discussed how we have done the data collection and analysis we performed by considering a case study. Now in this chapter, we will conclude about the results of our case study. In our case study of shipment of cargo (2500 Cartons equivalent to 300 CBM) from YUNUS Textile Mill Ltd. to WALMART, US via DAMCO, Pakistan, we have used three key indicators relating to transportation operations. These are helpful to assess the performance of 3PL facilitator in terms of the transportation. Our research about the key transport indicators shows the following results:

i. Transport Damage Rate:

Damage rate of any cargo depends upon a number of damage transport units, our case study has shown 0% damage rate indicating high performance in terms of transports. On the other hand, if the damage rate goes beyond 0 e.g. 0.4% (because of 10 damage units) will indicate the low performance of 3PL service. Hence transports damage rates from 0% to 100% and so on implies high to low performance of 3PL service providers.

ii. Transport Reliability:

Reliability of any transportation system directly depends upon the number of on-time transportation i.e. how many trucks containing the cargo cartons/units reached on time, our case study has shown 100% transport reliability indicating the high performance of 3PL service in terms of quality. Transport reliability rates from 0-100% indicated low to the high performance of transportation system of 3PL in terms of quality delivery service.

iii. Transport Flexibility:

The flexibility of any transportation system directly depends upon the number of fulfilled transportation specifications (carrier arrangement, custom clearance, freight forwarding, shipment, warehousing) offered by DAMCO to its customers at the time of taking the cargo order. Our case study has shown 80% transport flexibility indicating the good flexible performance of 3PL service. Transport flexibility rates from 0-100% show low to a high flexible routine of third-party facilitator.

XII DISCUSSION & CONCLUSION

In today's competitive commercial surroundings Logistical facilitators have a greater part toward supply chain enhancement for any industrial enterprise. Therefore, the choice of a suitable 3PL service provider is one of the foremost business level choice problematics which industrial organisation has to face these days.

The choice of 3PL service provider is founded on its performance from this time the assessment of this performance is of very much significance for any industrial organisation.

The 3PL service provider has to face assured warehousing complications which significantly disturbs their performance, our research first part is focused on the identification of different warehousing problems associated with 3PL service providers. One major problem is the lack of technological adaptation regarding warehousing tools and techniques which could enhance the efficiency and effectiveness of the 3PL service providers.

In our research, we have followed a systematic approach for the performance assessment of third-party facilitators which is centred on four C.O.R.E points.

This learning of third party management performance assessment discovers facility excellence, management effectiveness and productivity, and relationship administration between third party facilitator and supply chain acquaintances. By working on this literature, we have given an approach and strength to overcome the breach in the works through facilitating an idea on the profitable performance assessment and supervision of logistics, SCM & transportation outsourcing from 3PL facilitators or any other sources.

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BIOGRAPHY

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