



CUMMINS
POWER
SYSTEM INC

CASE STUDY – CUMMINS WAREHOUSE MANAGEMENT



**Power
Generation**

1. Introduction

1.1 Document Purpose

The purpose of this document is the Case Study Documents

1.2 Intended Audience

This document should help the business owners to verify that the expected business requirements are documented with correct understanding and is accurate and unambiguous.

2. Problem & Causes

Taking into account the red values from performance indicators and also the warehouse process map, we have identified several problems regarding warehousing, related to space usage (based mostly on process map), inventory management, warehouse performance and order fulfillment (performance indicators), that are presented in the next table:

CATEGORY	PROBLEMS	CAUSES
1. SPACE	- only 59.83% of the surface allocated to the storing of goods;	the building had a different use before (it was a bakery facility).
	- excessive division of the space.	- the building had a different use before (it was a bakery facility).
2. INVENTORY MANAGEMENT	- a too high value of Days in Hand (41 days);	- the contracts with the suppliers aren't negotiated; the costs with the immobilization of inventories aren't evaluated.
	- a too high value of Dock to Stock Time (0.75 hours).	- the firm doesn't use barcode readers and a barcode software.
3. WAREHOUSE PERFORMANCE	- a too small value of Orders per Hour;	- the excessive division of space; the firm doesn't use barcode readers and a barcode software.
	- a too small value of Items per Hour.	- the excessive division of space; the firm doesn't use barcode readers and a barcode software.
4. ORDER FULFILMENT	- the superior limit of Order Cycle Time is too high.	- the goods arrive late from the suppliers; the firm doesn't use barcode readers and a barcode software.

3. Solutions

Space The main problem of the warehouse is the poor utilization of space. It can be solved by breaking some walls so that to have only a room for storing the merchandise. One of the archives, the two halls and one of the toilets should be eliminated. The offices of the firm should be moved on one side of the warehouse, so that access to goods be direct. The current Office of the Director should be divided in two halves: one used by the director and the other by the accountant and moved on the left side of the warehouse. These modifications would result in a gain of 55.83 sq.m. There should be two main docks in the warehouse: one for receiving the products and one for delivering them. They should be situated on opposite sides of the warehouse. In this way, there will be a better access to all the products. Before making these modifications, the opinion of a construction engineer should be taken into account. Another solution is related to the fact that there are multiple flows which intersect each other. One solution which would improve space utilization is a new design of flows inside the warehouse – it looks like possible to establish one different entry and one different exit for each stored product category.

3.1 Inventory Management

“Dock to Stock Time” can be reduced by introducing portable barcode readers and a barcode software. The time for entering the products or for preparing them for delivery will be shortened also by solving the problem related to space. “Days on Hand” indicator will have a lower value if contracts with suppliers are renegotiated and if are kept only the ones who are able to deliver products fast. The firm should also use an ABC analysis in order to know what products to place near the exit dock.

3.2 Warehouse Performance

The problems related to warehouse performance can be solved by improving the space utilization and by introducing portable barcode readers. We recommend a performance indicators continuous monitoring, in order to observe the improvements while they appear.

3.3 Order Fulfillment

Delivery problems can be solved by collaborating with suppliers that have the possibility to deliver merchandise fast or by investing in cars, and all that results from this investment (hiring a driver). These solutions could be implemented, in our opinion, in about 3 months, and this is because the whole architecture of the building has to be changed. These solutions support the short and long-term objectives of S.C. TUDOR S.R.L.

4. Conclusion

The main solutions we propose in this article regarding warehouse management are performance indicators and process mapping. These two solutions complete each other. It is easier to establish key performance indicators for a warehouse after a process map was drawn, considering also other indicators used at international level. The process map is the helicopter view needed for establishing relevant performance indicators. Performance indicators are useful for identifying the problems – red or abnormal values of the indicators are as a control system for a warehouse. In order to solve the problems, we have used a very simple methodology: identify the causes of the problems and then try to diminish their impact or just eliminate the causes. It is a cause-effect approach, easy to be applied by any manager. Warehouse performance measurement means, in our opinion, discovering the problems of the warehouse and solve them before is too late. It is a way to reduce costs by improving operations that take place in a warehouse, and having low costs is an essential feature of differentiating logistics firms. We applied the key performance indicators to a small company, but they can be calculated also for large firms. Even on a small scale, they helped us discover a lot of problems, out of which the poor utilization of space was the essential one.