DEVELOPMENT OF COST EFFECTIVE STRATEGY FOR INVENTORY CONTROL;

A Case Study of Cement Manufacturing Company in Kenya

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E221-003-0036/2012

A Thesis Submitted in Partial Fulfillment for the award of Masters of Science in Industrial Engineering and Management in the School of Engineering, Dedan Kimathi University of Technology

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DECLARATION

Student:

I declare that this thesis is my original work and has never been presented for any purpose in this university or any other institution.

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Abstract

Inventory management is essential to many organizations mainly because it avails production goods and spares when required. Due to increasing competition from globalization in the business environment especially manufacturing sector, many companies within Kenya in the recent past have been hit by financial constrains and are in the quest of improving their financial status by optimizing production resources in order to increase profit margin and remain competitive. In the cement factory under this study (BTC), expenditures on various spares and raw material contribute significantly to high cost that result in poor financial performance. The purpose of this research was to determine the optimal spending on spare parts and raw materials storage activities at BTC with the aim of lowering the overall inventory cost.

This research is a case study with inductive approach whereby, data from BTC was collected and analyzed to obtain various cost factors associated with spares and raw materials acquisition and storage. Root cause analysis was used to identify various causes of inventory challenges, whereas inventory turnover ratio was used to establish monetary utility of the existing system on maintaining spares, materials and goods. Pareto analysis was conducted to identify crucial and sensitive commodities that contributed significantly to the overall inventory cost. Subsequently, systematic applications of Economic Order Quantity (EOQ) and Selective Control (A-class B-class C-class/ABC) were used to determine the optimum operation strategy for inventory management.

This research outlines projected changes to inventory system at BTC. Design-out of existing material transport system was done whereby through analysis it was established that it would have a payback period in within its lifespan. EOQ and ABC inventory control is set for implementation within the financial year 2018, while the goods conveyor system, would be operational in the year 2019.