

**MANUFACTURING STRATEGY PARADIGM:  
CONTINUOUS IMPROVEMENT ((KAIZEN) ON  
OPERATIONAL PERFORMANCE AND  
MANUFACTURING STRATEGY.**

**A Thesis Submitted to the Faculty of Graduate Studies of the  
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**In partial fulfillment of the requirements for the degree of  
Master of Science in Management**

**M.Sc (Management) Program  
Faculty of Graduate Studies  
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**May 2006**

## Certification

I hear by recommended that the thesis was prepared under my supervision by N.W.K.Galahitiyawe (Gs/Mc/1864/2001) entitled "**Manufacturing Strategy Paradigm; Continuous Improvement (Kaizen) on Operational Performance and Manufacturing Strategy**" be accepted in partial fulfillment of the requirement for the degree of Master of Science in Management.

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## Declaration of Candidate

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University, contain any material previously published or written by another person except where due reference is made in the text.

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## Abstract

Modern Manufacturers face a discouraging world of unpredictable market conditions and competition. Evaluating best practices from a variety of industries and adapting the very best to their business drives sustainable competitive advantage. *In order to remain competitive, they must continuously implement best practice management principles, strategies and technologies.....(Carpinetti et al., 2000)..* Continuous improvement programs have evolved from traditional manufacturing focused systems that concentrate on the production line to **reduce waste (Cost)** and **improve the product quality**, into comprehensive, systematic methodologies that focus on the entire organization. (Bhuiyan N and Baghel A, 2005).

Consequently, the main purpose of this study is to find the impact of Continuous Improvement (CI) methods (Work methods oriented CI and Process improvement oriented CI) on Operational Performance and how the application of the two methodologies vary with the manufacturing strategy focus of the organizations.

Two cases from Garment industry were selected after conducting a pre survey because in year 2005 the quota has terminated and all manufacturers in the industry in developing countries have entered to an open competitive market. Thus, the risk of business has also increased. Currently many drawbacks of the industry can be observed. As a whole the major problem faced by every one is reducing the operating cost without harming the quality of the product.

Selected two organizations are Paradigm Clothing (Pvt) Ltd and YKK Lanka (Pvt) Ltd. These two are same in many factors other than manufacturing strategy focus and leadership. Therefore used 'Contrasted group, Post-test design' and the data were obtained through questionnaire (standard format), informal interviews and observation. Mean analysis, Regression analysis and Correlation analysis were used to analyze data.

The study found that both Kaizen approaches are positively correlated with operational performance and strategic focus moderate the above positive relationship. Therefore the study suggests that work method improvements are appropriate for quality focus organizations than cost focus organizations and process improvements are more suitable for cost focus organizations. But process improvements as a whole make positive impact on operational performance regardless of strategic focus.

Finally, continuous improvement (Kaizen) makes positive change in operational performance, but according to the strategic focus organizations have to select most appropriate approach to achieve expected operational outcomes.

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# *Chapter 01*

# CHAPTER 01

## Introduction

### 1.1 Background of the Study

Organizations, from all sectors, are facing a continual need to develop sustainable creativity and innovation as a result of increasingly rapid market, technology and people-based change. In today's complex and turbulent environments, the need for Continuous Improvements (CI) in products and processes is widely recognized. But the mechanisms whereby such a continual stream of innovation can be achieved are often less clearly identified.

While alignment of the manufacturing function with strategic priorities is core to competitiveness, the continuous improvement of the manufacturing function plays a very important complementary role in seeking competitiveness in the long run. Therefore, operations managers attempt to rapidly adopt world-class management practices such as Total Quality Management (TQM), and many other acronyms, tend to devote little or no attention at all to the impact of such practices on company strategic objectives, market demands or even performance against competition. Total Quality Management (TQM) has been recognized as a mechanism for achieving organizational development. TQM is an integrative management philosophy aimed at continuously improving the quality of products and processes to achieve customer satisfaction.

Over the decades, as the need to continuously improve on a larger scale within the organization became an imperative, a number of CI methodologies have been developed based on a basic concept of quality or process improvement, or both, in order to reduce waste, simplify the production line and improve quality. The best known manufacturing practices are: lean manufacturing, six sigma, balanced scorecard, and lean six sigma. (Bhuiyan and Baghel , 2005).

When analyzing Japanese management system they used 'Kaizen' methodology which is similar to continuous improvement. Kaizen means "improvement" and

Kaizen strategy calls for never-ending efforts for improvement involving everyone in the organization - managers and workers alike. Kaizen attracts and develops people who are capable of creating and sustaining high performance. By its nature, it draws people who are achievement oriented and those who are internally driven to make a difference to perfection. CI or Kaizen concentrates not only human aspects but also aims to improving the process rather than at achieving certain results.

Several studies have discussed the relationship between CI and organizational performance under different themes. However, majority of them obtained identical results, which is, CI directly affects performance. But, available literature does not provide sufficient evidence to explain the exact relationship between major components of CI and operational performance.

These world-class manufacturing concepts are normally utilized by manufacturing organizations rather than service organizations. Because manufacturing organizations utilize a large number of tangible and intangible resources than service organizations. Manufacturing organizations derive strategies based on market information and they streamline product and process related activities to meet customer needs and wants as well as to achieve competitive advantage. Therefore, those manufacturing oriented organizations require prioritizing their competitive focus to gain maximum out of utilized resources. When applying different methodologies, systems, etc., they have to be keen enough to sustain their competitive priority. Otherwise the manufacturing strategy contradicts with the applied taxonomy. Previous literatures have paid less concentration on this regard. Thus, there exists a doubt of, to what extent methodologies like Kaizen is applicable for organizations, which follow different competitive priorities. The study identified work methods oriented Kaizen which is improvements in human factor and their learning and process improvement oriented Kaizen is related with the improvements of technology and production system.

Especially, the need for productivity improvement methodologies has become an essential practice for Sri Lankan Garment industry. The reason behind this requirement is that due to the removal of quota in 2005, the country has entered the open competitive market of garments deprived of any protection. Therefore, this study bridges a gap in literature as well as the findings will help to overcome certain practical issues that deal with the garment industry in Sri Lanka.

## **1.2 Problem Statement**

This study mainly focuses on determining the impact of Work methods oriented Continuous Improvement on Operational Performance and Process oriented Continuous Improvement on Operational Performance. The study also attempts to investigate the impact of Competitive strategy focus on shaping the relationship between Continuous Improvement and Operational Performance.

## **1.3 Research Problem**

To what extent Work methods oriented Kaizen and Process oriented Kaizen are affecting the Operational Performance? And does the Competitive Focus (Mainly Cost/Quality) moderate the above mentioned relationship?

## **1.4 Objectives of the Research**

1. To identify the impact of Work methods improvement Kaizen on operational performance.
2. To identify the impact of Process improvement Kaizen on operational performance.
3. To identify the significance of competitive strategy focus on changing the impact of Kaizen orientations (work methods / process) on Operational performance.

## **1.5 Hypothesis**

H1: There is a positive relationship between Work methods oriented Kaizen and Operational Performance.

H2: There is a positive relationship between Process improvements oriented Kaizen and Operational Performance.

H3: The effectiveness of 'Work methods oriented Kaizen on Operational Performance' is higher in Cost focusing organizations than Quality focus organizations.

H4: The effectiveness of 'Process Improvement oriented Kaizen' on Operational Performance' is higher in Cost focusing organizations than Quality focus organizations.

## **1.6 Methodology**

A basic market survey had been carried out to identify cases, which supports the study. The study is based on selected Sri Lankan manufacturing organizations in the garment industry where their annual revenue is greater than 10 billion. Then two organizations had been selected according to contrasted group design to the final analysis. Since 2000, those selected companies follow Kaizen methodology and they have obtained ISO certification. First hand information and other empirical data had been used. Questionnaire and Interview method had been used as data collection methods. The research can be recognized as a longitudinal study because the study needs to evaluate the impact of CI for a considerably long period of time. Including Correlation analysis, Time series analysis and other relevant statistical methods have been used as required to analyze data of the study.