LOOK EAST : TOTAL QUALITY MANAGEMENT PRACTISED BASED ON JAPANESE APPROACH

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Abstract: This book is about comparing TQM practices between the Japanese and non-Japanese companies. Analysis were made to find significant difference in TQM practices and importance between Japanese and non-Japanese companies. The results showed that there are significant differences in TQM practices. Furthermore, Japanese companies have high perception on the importance of product development. The top five quality activities implemented are: quality control circle, supplier improvement, Failure Mode Effect Analysis (FMEA), Value Engineering (VE) and quality costing. The book also proposed Quality Improvement Guidelines (QIG) framework for TQM implementation. Management leadership, TQM awareness, standardization, customer satisfaction strategies and kaizen activities are five major parts in the framework. The framework is also supported by Critical Success Factors (CSFs) to ensure the success of TQM implementation. The framework is step by step and can assist companies in meeting customer satisfaction, employee satisfaction and business growth.

Keywords: Quality, principles, product, customers, development

Look East: **Total Quality Management (TQM)** Practices Based on Japanese Approach

MD. FAUZI AHMAD@MOHAMAD

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LOOK EAST: TQM AND QUALITY PRACTICES BASED ON **JAPANESE APPROACH**

LEARN FROM JAPANESE WAY

"Japanese companies developed a very effective system of management, particularly in the manufacturing sectors, and the rest of the world has much to learn from these practices"

-Masaki Imai, Quality Guru

MD. FAUZI BIN AHMAD @ MOHAMAD

To my beloved mother and father, Haji Mohamad and Hajjah Mariah.
My family, Fatan Adibah, Dina and Saffin,
My Dearest Sisters and Brothers, Fadzil, Fauziana, Fariza, Fuad dan Fatimah

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-Makoto Arigatou Gozaimasu (THANK YOU)

In preparing this book, I was in contact with many people, researchers, academicians, and practitioners. They have contributed towards my understanding and thoughts. In particular, I wish to express my sincere appreciation to Professor Dr. Sha'ri Mohd Yusof, for encouragement, guidance, critics and friendship. Without his continued support and interest, this book would not have been the same as presented here.

My sincere appreciation also extends to dean, department head, all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed. Unfortunately, it is not possible to list all of them in this limited space. I am grateful to all my family members. Without their understanding and support, I can't complete my book with success. I always pray that Allah can give me the direction for success in life.

This book is one of my small contributions to country and nation based on my experience, observation and research. Hopefully this book will be useful as a guidance to industries for improving company performance and assist Malaysia to achieve vision 2020.

At last thanks to UTHM for giving the opportunity to publish this book. Arigatou gozaimasu. Gambarimashou!

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PREFACE

At last, I manage to complete writing this book. Thanks to God for giving me, patience and inspiration. This book was born based on my 16 years experience since my tertiary education in Japan and working experience in Japanese multinational company. From my valuable experience, I possess deep interest in doing research of Japanese success through TQM approach, which have been proved effective and successful. Through my observation and research; the key success of Japanese companies relies on three elements; continuous cost improvement, quality and delivery to meet customer satisfaction. This can be achieved through Total Quality Management (TQM), which is crucial in ensuring that a company can survive in the continuously growing competition in the global market. Japanese companies are very successful today because of adoption and implementation of TQM principles. This book is about comparing TQM practices between the Japanese and non-Japanese companies. Analysis were made to find significant difference in TQM practices and importance between Japanese and non-Japanese companies. The results showed that there are significant differences in TQM practices. Management leadership, measurement and feedback, product design and education and training showed significant difference in favor of Japanese companies. Furthermore, Japanese companies have high perception on the importance of product development. The top five quality activities implemented are: quality control circle, supplier improvement, Failure Mode Effect Analysis (FMEA), Value Engineering (VE) and quality costing. The book also proposed Quality Improvement Guidelines (QIG) framework for TQM implementation. Management leadership, TQM awareness, standardization, customer satisfaction strategies and kaizen activities are five major parts in the framework. The framework is also supported by Critical Success Factors (CSFs) to ensure the success of TQM implementation. The framework is step by step and can assist companies in meeting customer satisfaction, employee satisfaction and business growth.

CONTENT

LIST OF ABBREVIATIONS

ABBREVIATIONS

AFTA	The ASEAN Free Trade Agreement	2
CS	Customer Satisfaction	97
CSFs	Critical Success Factors	103
DOE	Design of Experiment	53
DR	Design Review	53
FMEA	Failure Mode Effect Analysis	53
ISO	International Organization For Standardization	58
JIS	Japanese Industrial Standard	11
JUSE	Japanese Union of Scientists and Engineers	12
KPIs	Key Performance Indexs	19
MBWA	Management by Walking Around	18
PDCA	Plan-Do-Check-Action	18
PMQA	Prime Minister's Quality Award	28
QA	Quality Assurance	11
QC	Quality Control	11
QCC	Quality Control Circle	73
QFD	Quality Function Deployment	60
QIG	Quality Improvement Guideline	61
QMEA	Quality Management Excellent Award	28
SMEI	Small Medium Sized Industry	2
SOP	Standard Operation Procedure	74
SPC	Statistical Process Control	56
SPSS	Statistical Package for the Social Science	42
SQC	Statistical Quality Control	11
TPM	Total Preventive Maintenance	27
TQM	Total Quality Management	1
VE	Value Engineering	9

CHAPTER 1

"No one can dispute that Japan achieved a miracle when it rebuilt itself after the war. How did it do it? It did it by not being advised by other people. It did it in its own way. ***The only advice it accepted was to produce high quality goods, goods of world standards, so as to be accepted by the world markets****"*

-Tun Dr.Mahathir

Introduction

TQM (Total Quality Management) is crucial in ensuring that a company can survive in the continuously growing competition in the global market. Continuous efforts in improving quality, productivity, cost and timely delivery can enhance their competitiveness. Japanese companies are very successful today because of the TQM principles adoption and the implementation of TQM and quality practices, which are expounded by quality gurus such as Deming, Juran, Taguchi and others. TQM is an essential element that ensures business will meet the demands of customers well into the twenty first century (Talha, 2004). Yusof (1999) views TQM as not only bringing benefit to a nation's community and employee but also to the wide range of the world's community through the provision of excellent products from excellent organization at affordable price.

The electrical and electronics sector is one of the most important industrial sector in Malaysia where it is the largest export earner, netting receipts amounting to 256 billion or 47.8% of the country's total export revenue in 2007 (Statistic Department, January 2007). In Malaysia, electrical and electronics industrial sector consists of multi-national companies and small medium sized enterprise

CHAPTER 2

QUALITY AND EVOLUTION

"I can say that 99.9 percent of all the companies in the world today are obsessed with a growth mentality. These are the companies that can make profits only when the market is growing. In real life, market demand always fluctuates. ***The only companies that will survive into the next millennium will be the ones that have the flexibility to produce according to fluctuating demand****"*

-Masaki Imai, Quality Guru

*"****Create constancy of purpose towards improvement of product and service****, with the aim to become competitive and to stay in business, and to provide jobs"*

-Edwards Deming, Quality Guru

Japanese TQM

TQM practices have been the focus of study in many previous researches. Studies on quality practices have been conducted in China and India (Lee *et al*. (2001), Li *et al*. (2003), Maheshwari and Zhao (1994) and Motwani *et al*. (1994)). The purpose of these studies was to provide an overview and assess the level of TQM practices in these countries. Lee et al, (2001) found quality and productivity improvement approaches by Chinese firms in China have led to better quality and financial performance. Maheshwari and Zhao (1994) conducted a study on benchmarking quality management practices in India and they found that Indian companies are not far behind when compared to developed countries.

CHAPTER 3

TOTAL QUALITY MANAGEMENT (TQM)

"In Toyota everybody works as a team. ***We even call our suppliers our partners, and we make things that everybody thinks we should make****"*

-Katsuaki Watanabe, Former Toyota President

Definition of Total Quality Management (TQM)

Different authors have given various definition of Total Quality Management (TQM) but there are some common elements of TQM. TQM is a method or way to achieve customer satisfaction. (Kanji, (1998), Berry, (1991), and Dale, (1994). Kanji (1990) defined TQM " as the way of life an organization committed to customer satisfaction through continuous improvement ". Berry (1991) defined the TQM process " as a total corporate on meeting and exceeding customer expectations and significantly reducing costs resulting from poor quality by adopting a new management system and corporate culture ". Dale (1994) defined TQM as "the mutual cooperation of everyone in an organization and associated business process to produce products and service which meet the need and expectation of customer's ".

Juran and Crosby defined TQM as management philosophy and quality practices to achieve the objective of an organization. Juran (1998) defines TQM as " philosophy aimed at achieving business excellence through the use and application of tools and

CHAPTER 4

QUALITY MANAGEMENT IN MALAYSIA

"In fact, ***a successful Kaizen strategy would involve major systems*** *such as Total Quality Control / Total Quality Management, (TQC/TQM), Just-in-time Production System, Total Productive Maintenance (TPM), Policy Deployment (Strategy devised by top management), the Suggestions System and Small-group activities (the quality circles)"*

-Masaki Imai, Quality Guru

Introduction

The Malaysian Government introduced Quality Management in Malaysia in the early 80s with a setting up of Quality Awareness Program nationwide. It includes involvement of both the public and private sector at large. While emphasizing that providing quality product and services are the utmost important factor, government once again created the Excellent Work Culture Movement in 1989.

In addition, an Umbrella Project was implemented in 1990 when SIRIM was formed targeting Small Medium Industries (SMIs) to upgrade their technical level and product quality. Upon this formation, SMIs quality system were expected to improve gradually based on ISO 9000 standard with technical assistance from foreign affiliate and other advances manufacturing companies. ISO 9000 is seen to be among the most adequate set of standard established to monitor and guide quality assurance management.

CHAPTER 5

TQM SURVEY RESULT AND ANALYSIS

A huge waste of resources can be noticed in the way a product is designed, made and sold. The competition for quality and cost is intensifying. ***Thus, improving quality while reducing cost is the only option for survival****. The key point is how to build a management system that can reduce cost while achieving good quality.*

-Masaki Imai, Quality Guru

Introduction

This chapter describes the methodology used in this research in order to achieve the objectives. The methodology of this research is divided into five sections. The first section describes the survey methodology to investigate the critical success factors (CSFs).

The next section explains related hypotheses in this research. This is followed by data analysis using statistical methods such as frequency analysis, factor analysis and t-test. Critical success factors (CSFs) are presented regarding the perception on importance and practices of TQM. The next section addresses the problems faced in implementing TQM. The results also presents quality practices level. The chapter culminates with .general conclusions gathered from the survey.

CHAPTER 6

CASE STUDY

"Eliminate the need for inspection on a mass basis by building quality into the product in the first place"

-Edwards Deming, Quality Guru

Introduction

Further conducting a survey, a case study was performed. This chapter presents the results of a case study performed as data collection and analysis part of data collection and analysis. The case study was conducted in early Jan 2008 at A Company, which is a subsidiary of Japanese multinational company. It is located in Johor. From the survey, there are five companies, which showed interest to participate in the case study. A letter was sent to the company to request approval for case study. A Company is one of the respondents which gave a good response to the survey. The reasons for conducting case study at A Company is that the company started implementing TQM since 1990.

The chapter begins with a description of the methodology employed in eliciting relevant information concerning the company studied. The finding of the case study centres around three main areas:
(1) background of the case company.
(2) major aspects of TQM implementation and quality practices.
(3) implementation framework employed by the company.

A summary of various quality initiatives implemented by the company will be presented. Validation of the conceptual implementation framework will then be described. Finally, the

CHAPTER 7

QUALITY IMPROVEMENT GUIDELINE (QIG) FRAMEWORK

Introduction

This chapter presents the QIG framework for TQM implementation in Malaysian electrical and electronics companies. The guideline has been modified from Japanese TQM model, which was developed presented in Chapter 4. Modifications of the conceptual guidelines were made after considering the results obtained from the survey and case study.

This chapter is divided into three sections. The first section is introduction followed by an explanation of the guidelines, including elements of the guidelines and the final results. The chapter culminates with a conclusion and an overall view of the developed guidelines with regard to its applicability in Malaysia. The QIG can be used as a guideline for companies to implement TQM and quality practices in an effort to achieve organization's mission and vision.

Literature Review of QIG Framework

Framework assists us to understand TQM implementation step by step with effective way. Oxford Dictionary (2007) defined framework is a set of principles or idea used as a basis for one's judgment and decision. Reader's Digest Universal Dictionary defined framework as a structure for supporting, defining or closing

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Author is an academic staff at UTHM. His undergraduate studies was in Electrical & Electronic Engineering from Muroran Institute of Techonolgy (MIT), Japan and Post Graduate studies in Total Quality Management (TQM) from Universiti Teknologi Malaysia (UTM). His majoring research is in TQM of Japanese companies and actively publishing international and local journals. He embarked his carreer as Quality Engineer at Sharp Corporation in 1999 and have been assigned at various department which include Product Quality Assurance (PQA), Quality Control (QC), Product Planning and Sales Department. He has working experience for 12 good years in quality and marketing management. He is a Certified Quality Engineer (CQE) from Federation Manufacturing Malaysia (FMM) and Sharp Corporation Japan. He also participated in On Job Traning(OJT) for quality and reliability management at Sharp Corporation, Japan under Association of Overseas Technical Scholarship (AOTS). He also contributed in establishing company strategy for improving customer satisfaction and other major quality projects. Based on his experience studying in Japan and working with Japanese companies for more than 16 years, he understands the secret of Japanese management well. Collaborating the knowledge, experience and success for the past 16 years of his life living within this Japanese culture, this book was then initiated for the benefit and survival of industries in the highly competitive age.

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