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EVALUATING THE EFFECTIVENESS OF ISO 9001:2000 TRAINING IN CERTIFIED MANUFACTURING COMPANIES IN MALAYSIA

By

MOFTAH FARAG SALEH

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia in Partial Fulfilment of the Requirements for the Degree of Master of Science

DEDICATION

To my parents who taught me the importance of patience and perseverance.

My wife

And family brothers and sisters

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

EVALUATING THE EFFECTIVENESS OF ISO 9001:2000 TRAINING IN CERTIFIED MANUFACTURING COMPANIES IN MALAYSIA

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March 2004

Chairman: Professor. Madya. Ir. Md. Yusof Ismail, Ph.D.

Faculty: Engineering

With more Malaysian manufacturing companies upgrading from previous standards ISO 9000: 1994 to the ISO 9001: 2000 standards, employee readiness is an important component for successful implementation. The Implementation Team tasked with implementation and maintenance of the standards is trained to facilitate the required transformation.

The purpose of this research is to obtain feedback from Implementation Team Members who are responsible for implementation of ISO 9001:2000 standards in their companies. 87 respondents from 27 Malaysian (small and big) Manufacturing companies which had recently

implemented the ISO 9001:2000 standards in their work agreed to participate in the this study. The aim of the research was to evaluate training programs conducted to support the implementation of the system.

Using Kirkpatrick's Model this study evaluated the training programs and their influence on the success or failure of quality standards implementation. Analysis of the results showed a high incidence of positive feedback for the reaction, knowledge and attitude levels. The evaluation of the Implementation Team members, skill levels for implementation of clause 6.2.2, considered critical to the success of implementation of the system however was less positive and registered only average ratings.

This indicates that training needs for Implementation Team Members need to be given more attention to ensure that they are well prepared to carry out their roles in the implementation process. Additionally, in attempting to investigate the necessity for training on additional skills required to establish and maintain the system the general consensus among them was the requirement for additional training.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

KEBERKESANAN PIAWAIAN ISO 9001: 2000 TERHADAP SYARIKAT PENGELUARAN DI MALAYSIA

Oleh

MOFTAH FARAG SALEH

Mac 2004

Pengerusi: **Professor. Madya. Ir. Md. Yusof Ismail, Ph.D.**

Fakulti: **Kejuruteraan**

Dengan bertambahnya syarikat pengeluaran Malaysia yang dinaiktaraf daripada piawaian sebelumnya kepada piawaian ISO 9001:2000, kesediaan pekerja adalah satu komponen penting untuk kejayaan implementasi piawaian tersebut. Jawatankuasa Implementasi yang ditugaskan untuk mengimplementasi dan menyelenggara piawaian itu diberi latihan untuk memudahkan usaha-usaha transformasi yang diperlukan.

Tujuan kajian ini adalah untuk mendapat maklumbalas daripada ahli-ahli Jawatankuasa Implementasi yang bertanggungjawab untuk memgimplementasi piawaian ISO 9001:2000 di syarikat mereka. Seramai 87 responden daripada 27 syarikat pengeluaran Malaysia, kecil dan besar telah bersetuju untuk menyertai kajian ini. Tujuan kajian ini adalah untuk mengkaji program latihan yang dijalankan bagi membantu sistem ini diimplementasi.

Kajian ini menilai program latihan dan kesannya ke atas kejayaan atau kegagalan kualiti implementasi piawaian. Penilaian dijalankan dengan menggunakan model Kirkpatrick.Analisa hasil kajian menunjukkan dapatan maklumbalas positif yang tinggi pada peringkat reaksi, pengetahuan dan sikap. Penilaian mengenai tahap kemahiran untuk implementasi menurut klausa 6.2.2 yang mana dianggap kritikal kepada kejayaan implementasi sistem terhadap ahli Jawatankuasa Implementasi bagaimanapun adalah kurang positif iaitu pada tahap biasa sahaja. Ini menunjukkan bahawa penekanan yang lebih perlu diberikan kepada latihan untuk memastikan ahli Jawatankuasa Implementasi dapat menjalankan tugas mereka dengan sempurna. Kajian mengenai keperluan untuk latihan tambahan juga menunjukkan bahawa pegawai-pegawai ini memerlukan latihan tambahan.

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I would like to say thanks to God for helping me and giving me the strength to accomplish my dreams in completing my studies.

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And my thanks to all the companies and respondents who consented to participate in this study

Moftah Farag Saleh

I certify that an Examination Committee met on 4th march, 2004 to conduct the final examination of Moftah Farag Saleh on his Master of Science thesis entitled "Evaluating the Effectiveness of ISO 9001:2000 Training in Certified Manufacturing Companies in Malaysia" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and University Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

.....
SHAMSUDDIN SULAIMAN, Ph.D.
Professor
Faculty of Engineering,
Universiti Putra Malaysia
(Chairman)

.....
SHA'RI MOHD. YUSOF, Ph.D.
Professor
Faculty of Engineering,
Universiti Teknologi Malaysia
(Member)

.....
MEGAT MOHAMMAD HAMDAN MEGAT AHMAD, Ph.D.
Professor
Faculty of Engineering,
Universiti Putra Malaysia
(Member)

.....
RYSPEK USUBAMATOV, Ph.D.
Professor
Faculty of Engineering,

Universiti Putra Malaysia
(Member)

.....

SHAMSHER MOHAMAD RAMADILI, Ph.D.
Professor/ Deputy Dean
School of Graduate Studies
Universiti Putra Malaysia
Date: October 2003

This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the supervisory Committee are as follows:

Md. YUSOF ISMAIL, Ph.D.
Associate Professor
Faculty of Engineering
Universiti Putra Malaysia
(Chairman)

NAPSIAH ISMAIL, Ph.D.
Associate Professor
Faculty of Engineering
Universiti Putra Malaysia
(Member)

ABDEL MAGID HAMOUDA, Ph.D.
Associate Professor
Faculty of Engineering
Universiti Putra Malaysia
(Member)

AINI IDERIS, Ph.D.
Professor/ Dean

School of Graduate Studies

Universiti Putra Malaysia

Date:

DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or any other institutions.

_____

MOFTAH FARAG SALEH

Date: 25th April 2004

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Over the past three decades, great attention has been given to quality management almost worldwide. The concept of total quality management was introduced in some developed countries, such as Japan, United States, and UK. In recent years more attention has been paid to quality management in the manufacturing sector. Further research in the application of quality management in the manufacturing sector is, however, still required, since quality is critical in today's business world due to intensified competition, not only at local level but also on the international arena due to globalization and advancement in transportation and communication technologies. Therefore, organizations have to find an answer to such needs. As a first step towards total quality management, a large number of manufacturing companies in different countries obtained the ISO 9000 standards certificate.

Through vision 2020, the Malaysian government has targeted the achievement of a fully developed Malaysian Nation by the year 2020. In

order to achieve this vision, Malaysia, like many other countries, has adopted the ISO 9000 series as its national standard.

In 1987, the Standards and Industrial Research Institute of Malaysia (SIRIM) launched a scheme for the Certification of Quality Systems to provide certification of Quality Systems in the ISO 9000 series. In Malaysia, the standard is recognized as the MS ISO 9000 standard, which is issued by SIRIM. MS ISO 9000 has gained widespread acceptance among companies in the Malaysian governmental and private sectors.

It is normal practice to revise a standard every few years. The world moves on, and standards have to be updated. Every 5 years, there must be a review of the standard to ensure its currency and maximum usability. In late 2000, a new (MS ISO 9000:2000) standard was introduced to replace the previous standard (MS ISO 9000:1994). The new standard appears to have successfully replaced the 1994 version as the favoured international standard. The main purpose of the year 2000 revision to the ISO 9000 standard was to give users the opportunity to add value to their activities and to improve their performance continually by focusing on the major processes within their organizations.

The International Accreditation forum has allowed a 3 – year transition period through which the 1994 standards will continue to co-exist with ISO 9000:2000. The transition period will be officially over at the end of 2003. This is also the deadline for companies that need to make a transition from the 1994 standard to ISO 9000:2000 (Pheng and Fong, 2002).

Currently in Malaysia, many companies are in the process of transferring from ISO 9000:1994 to ISO9000: 2000. According to the last report published by SIRIM, 'SIRIM QAS: Directory of Certified Products and Companies', since the publication of the new ISO 9001:2000 standard, 81 companies had been successfully upgraded or newly certified to this standard. Since then there have been more companies, which have already gained certification to this standard and several others in the process of gaining certification

1.2 Statement of the problem

Companies wishing to be certified under the ISO standards need to first devise a strategy for implementation. Their strategy should encompass both the streamlining of internal processes to ensure compliance with the standards as well as staff understanding, acceptance and adoption of the standards in their daily routines. Since the ISO 9000 quality

management system affects all areas and all personnel in the organization, training programs should be structured for different categories of employees, senior managers, middle-level managers, supervisors and workers. The ISO 9000 implementation plan should make provisions for this training.

Training may include quality concepts, ISO 9000 requirements, lead assessor training, internal auditing, problem solving and decision-making techniques, teamwork and communication skills, (Cheng, 1998)

One of the key activities in implementing the ISO process is selection of the team members, Naroola and Connell (1996), forming an Implementation Team with members including people with overall responsibility and authority is a vital stage for the system to be established and maintained, Kehoe and Rugg (1999). For these Implementation Team members to be efficient in playing their roles within their organizations, they need to be given proper and adequate training by professionals in the field. This will give them a better understanding of the vision and requirements of the new standards and how it would be applicable within their organizations. Only then will they be effective in transferring their knowledge to the other staff members within their organization through internal training exercises.

As discovered by Chew and Chai, (1996), through their survey on problems encountered by Malaysian companies in the implementation of ISO 9000 standards, inadequate training was one of the major problems faced by these companies. Organizations are now beginning to recognize that training is critical in helping close the gap between employees' current competencies and the competencies needed in high- performance organizations.

The true success of the implementation of ISO 9001: 2000 standard depends on the perceptions, attitudes, and expectations of the people who create and use the quality system. Implementation Team Members involvement is required in both the registration process of the standards as well as the subsequent operation of the quality system.

Basically, efficient and effective training programs need systematic planning and instructional design, and a well-monitored implementation process with adequate resource support for achieving the desired program objectives. However, without an appropriate evaluation program, it would be difficult to determine the efficiency and effectiveness of any training and, subsequently rationalize the continual implementation of such a program.

1.3 Specific objectives

Specifically, the study attempts to answer the following objectives.

1. to assess the reaction level of Implementation Team Members towards the MS ISO 9001:2000 Training programs in certified organizations.

2. to assess the knowledge level of Implementation Team Members about ISO 9001:2000 requirements at certified organizations.

3. to assess the knowledge level of the Implementation Team Members regarding the skills for work procedures for training their staff on activities relevant to the ISO 9001:2000 requirements at certified organizations.

4. to assess the attitudinal level of Implementation Team Members towards ISO 9001:2000 at certified organizations.

5. to determine the necessity for training on additional skills required by the Implementation Team Member to carry out their tasks.

all these objectives will be measured for different sized companies and both for companies, which are newly implementing ISO standards as well as those upgrading their standards from the previous levels.

1.4 Scope of the study

The scope of study is limited to respondents from manufacturing organizations implementing the ISO 9001: 2000 new standard. It is limited to how the Implementation Team Members, perceived the ISO 9001: 2000 and the training programme on the ISO 9001: 2000. The examination of their ability to apply the training requirements according to ISO 9001: 2000 new standard in order to train their staff for implementation of the standard itself.

The measurement criteria used in this study is limited to the 'reaction' and 'learning' levels of the respondents, i.e. the first two levels mentioned in Kirkpatrick's model. The other levels are not taken into account (job behavior and results or outcome levels).

The learning level assessment is limited to assessment of enhancement of knowledge, skills and attitude levels of respondents through the training programs, specifically on ISO knowledge, according to MS ISO requirements published by SIRIM, means knowledge about the

requirements of ISO 9001:2000 namely Quality management system, Management responsibility, Resource management, Product realization, and Measurement analysis & Improvement. Skills refer to the knowledge of skills to train staff in achieving successful implementation of ISO 9001: 2000 standards; no actual physical assessment on these abilities is examined.

The study focuses only on manufacturing organizations, which have implemented the ISO9001: 2000 standards.

1.5 Significance of the study

The anticipated findings of this research will lead to an awareness of how Implementation Team Members perceive ISO 9001:2000, the training programme for ISO 9001:2000 and training requirements for implementation of the standard at certificated organizations.

This will indirectly create awareness, at the management level, of familiarization with ISO 9001:2000 training requirements and work procedures required by Implementation Team Members to support successful implementation of the standard within their organization. By showing what a team member's commitment to training means, it provides good understanding on the benefits of such a commitment, and