Investigating the Post Training Outcomes of Quality Management System (QMS) among Employees in the Certified Manufacturing Companies in Penang

BY

TEOH CHENG INN

Research report in partial fulfillment of the requirement for the degree of Master of Business Administration in University Science Malaysia

Mid April 2008

SPECIALLY DEDICATED TO

My late father, Teoh Cha Tee

Planted the seed in me

to search for

knowledge, experience and unparallel exposure in life.

Your sacrifices were unconditional

Your dedication unquestionable

Your vision…. still burning within us today

Your mission, passion and love …….our inheritance.

Undeserving……but

grateful and appreciated all that we freely received

ACKNOWLEDGEMENT

I would like to thank God for the opportunity to expand my knowledge and experience throughout the entire course and for His sustaining strength.

I also wish to take this opportunity to thank my family for their support during my studies.

Last but not lease, I would also like to thank my supervisor Assoc Prof. Dr Suhaiza Hanim and co-supervisor Assoc Prof Dr T Ramayah for their guidance in the compilation of this research.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURE

ABSTRAK

Kajian ini bertujuan untuk mendedahkan industri kepada faktor-faktor yang mempengaruhi keberkesanan latihan yang dijalankan. Di dalam industri perkilangan, harapan pelangan terhadap barangan semakin meningkat di mana kualitilah yang menjadi keutamaan syarikat dalam dalam kompetitif perniagaan. Oleh itu. kajian ini bertujuan mengkaji faktor-faktor utama yang mempengaruhi keberkesanan pelaksanaan latihan Quality Management System (QMS) dikalangan kilang-kilang pembuatan di Pulau Pinang and hubungkait antara pembolehubah pengantaraan dengan perubahan budaya turut dikaji. 250 borang soal-selidik telah diedarkan kepada responden yang telah melalui latihan berkaitan dengan QMS di kilang masing-masing. Penganalisaan Regresi Berhiraki di lakukan untuk menentukan faktor-faktor yang paling signifikasi dalam mempengaruhi kejayaan latihan QMS dari 132 balasan yang diterima. Keputusan analisis menunjukkan bahawa peranan Infrastruktur Latihan, Maklum Balas Latihan, Dokumen Latihan, Jadual Latihan and Latihan Luaran adalah faktor yang signifikan dalam latihan QMS dari segi Keberkesanan Pembelajaran dan kegunaannya dalam Keberkesanan Applikasi kecuali untuk Latihan Luaran di mana keputusan tiada menunjukkan ianya signifikan dengan tiada Keberkesanan Applikasi untuk latihan QMS di kalangan kilang-kilang di Pulau Pinang. Kesimpulan daripada kajian ini menunjukkan bahawa kesemua fakta yang dikaji perlu di beri pertimbangan terutamanya bila mengambil pelatih luaran untuk memberikan latihan QMS di masa yang akan datang. Pembolehubah pengantaraan seperti Pengalaman Berkerja di Bidang QMS di kilang-kilang di Pulau Pinang untuk Infrastruktur Latihan, Dokumen Latihan and Latihan Luaran tetapi untuk Ketamadunan QMS hanya Jadual Latihan mempunyai signifikasi.

ABSTRACT

This study aims to provide organization with valuable knowledge on the key elements that contributes to the effectiveness of training. To meet customers' expectation, quality gives the manufacturer the competitive edge and required in this business. Therefore, this study focused on quality; the basic requirement is having a good base and an established Quality Management System (QMS). Therefore, this study investigated the effectiveness of QMS training for manufacturing organization in Penang and access employees' past work experience and culture contribution to its effectiveness. A total 250 questionnaires were distributed to only respondents who have undergone QMS related training in their organization Hierarchical Regression Analysis were performed to determine the most significant factor influencing the effectiveness of QMS training from the 132 feedback received. Results revealed that Training Infrastructure, Training Feedback, Training Documentation, Training Schedule and External Training influences the effectiveness of QMS training in both the knowledge gained (Learning Effectiveness) and application of it on the job (Application Effectiveness) except for External Training which shows no influence in the application side of QMS training effectiveness in manufacturing organization in Penang. This shows that all the variables have to be taken into consideration for future QMS training and more consideration required in hiring external trainer to conduct training. The moderating variable Past Work Experience shows to have some significant influence to the effectiveness of QMS training in Penang's manufacturing organization for Training Infrastructure, Training Documentation and External Resources but for moderator Culture in Your Organization, only Training Schedule shows some significant influence.

CHAPTER ONE

INTRODUCTION

1.1   Introduction

The significance and value of training has long been recognized. As quoted from Confucius who lived in the 5th century BC, "Give a person a fish and you feed him for a day. Teach a person to fish and you feed him for a lifetime." This is a simple notation but the meaning is extremely significance to the business world (Jinabhai, 2005). Given today's business climate and the exponential growth in technology with its effect on the economy and society at large, the need for training is more pronounced than ever. Training, in the most simplistic definition, is an activity that changes people's behavior (McNamara, 2001). Increased productivity is often said to be the most important reason for training. Nevertheless, it is only one of the benefits. Training is essential not only to increase productivity but also to motivate and inspire workers by letting them know how important their jobs are and giving them all the information they need to perform those jobs (Anonymous, 1998). Following this, McNamara (2001) lists the following as general benefits from employee training:

- increased job satisfaction and morale
- increased motivation
- increased efficiencies in processes, resulting in financial gain
- increased capacity to adopt new technologies and methods
- increased innovation in strategies and products
- reduced employee turnover

This is only a partial listing of the many benefits that result from training. Training that is appropriate to the needs of an organization can add great value. Traditionally, the word 'training' was virtually unheard of. An employee was merely shown how a task was to be performed with verbal instruction as to how the job was supposed to be done. They were then expected to repeat the task on hand with virtually little or no supervision (Tannenbaum & Yukl, 1992). According to Rosner (1999), training can be a great investment and training can be a waste of money. Training is indeed a waste of money when the desired behavior does not occur. In other words, training is not always the answer to performance problems. Gupta (1999) acknowledges that not all performance problems can be addressed by training. Today, as companies have now entered into the new millennium with Quality Management System (QMS) standards, training have become systematic with list of training requirement. Without the effective training of QMS, employees can be the organization's biggest liability supervision (Tannenbaum & Yukl, 1992). Trained effectively, however, they can become your biggest asset (Bartram & Gibson, 2000). Following this scenario, the extent of QMS training effectiveness is the key interest of this study. This introductory chapter starts with providing background of the study. The chapter then explains the problem of the study and the research questions and objectives. Next, the chapter portrays the significance of the study and its expected contributions. The chapter ends with defining the key terms of the study and organization of the remaining chapters of the thesis.

1.2   Background

The International Standard Organization (ISO) has evolved from ISO 9001:1994 to QS9000 and now ISO 9001:2000 standards. ISO 9001:2000 for the non-automotive related company and ISO/TS 16949:2002, which is mandatory for automotive related company (www.aiag.org). ISO 9001:2000 and the ISO/TS 16949:2002 is very customer focus, gearing

a company to satisfy and meet their customers' requirement and increasing expectation on quality (International Organization for Standardization). The term Quality comprises of either or both quality of a product or quality of services provided to a customer. One of the key methods of improving the quality in this study that we are interested in here is quality that can be improved with training in companies with ISO standard and the extent of its training effectiveness.

Training is big business. In 1998, American companies spent $60 billion on training (Rosner, 1999). So, how does an organization train effectively so that the investment results in growth and success? To make training count, it must be matched directly to the needs of the organization and people in it. In the case of QMS training, the training must be related to the quality standard requirement, quality tools, internal audit to monitor and align organization's objectives to QMS is mandatory to keep an organization on the competitive edge. A systematic approach to training is needed to achieve the expected effectiveness. Therefore, billions have been invested into beefing up training and the urgency to see the return of such huge investment (Berry, 2006). In this 21st century, training centers have been sprouting at everywhere and there are a long series of training programs on offer. Technology has also contributed vastly to the transformation of the training conducted. It has evolved from the old fashion mentoring and on-the-job training to the more sophisticated e learning and simulation capabilities, both methods have claimed to be successful, and have help enhanced the performance in their organization (Tannenbaum & Yukl, 1992).

There are however, organizations who have voiced out their reservations on providing training for their employees. They are concern that their fully equipped employees may decide to work for their competitor or be poached by them. Furthermore, the return of investment (ROI) does not justify the cost of training, and as an alternative, some organization have adopted the policy of external hiring for the required skills Montesino,

2002). In order to fulfill some government regulation e.g. Occupational Health and Safety (OHS) or ISO standard, some organization provided only the bare minimum training while other are merely jumping onto the full scale training with no proven or measurable ROI or monitor its effectiveness in using or transferring the knowledge to the job itself (Young, 2006). Systems for quality, environment, OSH and financial accounting are now main pillars of organization and demanded by different stakeholders, making it more complex to integrate into a single system, to maintain and comply with the requirement.

A study by Zutsi and Sohal (2003), found that it benefits the organization in better utilization of resources, improved the communication and savings in dollars. In addition, Zutsi and Sohal (2003) addressed "…why would an organization not welcome and seek out the value-added benefits resulting from training…" Gupta (1999), however, claimed that in many cases, training is usually failed because of ineffective planning. It is suggested by Bartram and Gibson (2002) that the key towards successful training is to identify what problems can be attributed to training deficiencies and, once that is accomplished, to insure that the right training is implemented. Rosner (1999) adds another ingredient for success is a support after training. He states, "The most effective programs train workers in new behaviors and then train managers to support employees as they apply learning daily (Rosner, 1999). He also added that support and endorsement from management could greatly enhance training results. This study is therefore to determine if training deficiencies do exist in QMS training and, if so, to identify the common training needs that can result towards its effectiveness.

1.3   Problem Statement

This study interested to investigate the training needs that can lead to the effectiveness of QMS training. Effectiveness here refers to the trainee's ability to learn, absorb, and retain

the new skills set or knowledge and then transfer these skills and knowledge learned onto the job. Investments made in each organization, irrespective of its size, have been a sore point as the return of investment is not obvious, or at least, quantifiable. Human resources training and development department are facing mounting pressures to look into the effectiveness of training with proven result, i.e. value add to the organization (Hale, 2003). Therefore, for a training to be effective and useful for an organization, learning without applying it to the job does not bring any value to the organization. With the recent customers' expectation moving from Percentage of Defect to Zero Defects (ISO/TS16959:2002 Standard, 2002) the QMS system training effectiveness is the key to meet customers' requirement.

In manufacturing industry, customers are more likely to conduct business with manufacturer who has been certified to ISO 9001:2000 certification and mandatory for automotive industry and it's supplier to be certified for ISO/TS 16949:2002 (Yung, 1997). Organization with ISO certification gives the customer and their customers' customers and so on in the supplier chain the assurance of an expected quality of their product (Yung, 1997). To be ISO certified, these organizations would also have a QMS of which they complies to with continuously improves on it to achieve excellence and a competitive edge. A survey conducted by Drew and Healy (2006) on manufacturing company found that 93% believe that they have improved their reputation and 90% says they have improved on their products and services because of QMS. A study by Yeap (2004) of manufacturing company in north Malaysia shows positive impact of ISO certification on overall company's performance. As anyone in the ISO Company knows, training in QMS often becomes priority list. The agencies are aware of how expensive training is, and they are aware it is important. Nevertheless, when the budget gets tight, training is probably the first to go. Another barrier to training is that some agencies have considerable turnover. On the other hand, Frye (2000)

5

admitted that most of the companies are not eager to spend their scarce resources training employees who may later leave the company.

Consequently, to maintain the quality system and compliance to it in the entire organization it would be a great challenge regardless of the size of an organization. The smaller ones may have limited resources and getting ISO certification for external benefits such as meeting customer's requirement (Poksinska, Eklund & Dahlgaard, 2004). and the bigger ones may be faces with the complexity of the procedures and aligning and standardizing them with their counterparts worldwide. Identifying the key factors will help avoid oversight that will hinder the organization's effort in training and realize its full benefit (Wong, 2005) and which is the research objective of this study. Therefore, the effectiveness of the training is crucial to the success of the quality management system. According to Yung (1997), a system that is not aligned or any non compliance to the procedures that each organization have set may have very big tangible i.e. customer's return of product, law suit and intangible impact, i.e. company's reputation, losing potential future sales or customers'. Reflecting to the definition of system addressed by Yung (1997), this study is interested to investigate training needs of QMS and what are they and how should company address them so that the training can be effective?"

1.4   Research Objectives

This purpose of this study is to identify the training needs that can result the effectiveness of QMS training. Specifically, this study is to-

1. To examine what are the training needs that significantly influence the QMS training effectiveness,

2. To assess if the employees' past work experiences moderates the relationships,

3. To examine if current organizations' QMS culture moderates the relationships.

1.5 Research Questions

This study aims to resolve the following research questions:

1. What are the training needs that significantly influence the QMS training effectiveness?

2. Does the employee past work experiences moderate the relationship between training needs of QMS and effectiveness of QMS training?

3. Does the current organization's QMS culture moderate the relationship between training needs of QMS and effectiveness of QMS training?

1.6 Scope of Study

Penang has RM4.81 billion worth of approved manufacturing investment and approved manufacturing investments had increased two folds in 2005 with the total capital investment increased by RM2.5 billion in the same year (SERI, 2006). In manufacturing, with increasing customer's expectation, quality, cost and service are the elements that give an organization the competitive edge required in this business. This study will focus on quality and the basic requirement is having a good base and established QMS system as many companies today have systematic with list of training requirement. Without the effective training of QMS, employees can be the organization's biggest liability and therefore, this study, will investigates the factors that commonly identified in the literature as antecedents to the effectiveness of the QMS training e.g. training infrastructure, training schedule, training documentation, training feedback and trainers. In addition, due to time constraints, only the manufacturing organizations with established QMS system in the Penang have been selected as the respondents.

1.7   Significance of the Study

This study aims to provide organization with valuable knowledge on the key elements that contributes to the effectiveness of training for QMS. These factors will enable the organization to select the important contributor and improve the effectiveness of future QMS related training program that will be provided. Besides the integrative perspective, it will also give valuable information on the moderators that will affect the success of QMS training. This will help improve the training effectiveness that adds value to the organization. Such information hope to equip training department in taking proactively steps to ensure the crucial contributors to the effectiveness of QMS are implemented or enforced as well as encourage the required support to enhanced its success, a more accurate selection of personnel's work experience for the training and expectation of the work performance after the training and enforce the positive QMS culture in the organization. In Malaysia, although many industries are certified to ISO standard and therefore implemented QMS system in their organization and provide training to the employees to maintain and comply to the requirement, but there are no study on the effectiveness of the training provided on QMS system in a manufacturing company. This study will highlight the factors that affect the effectiveness of the QMS training as well as the moderating factor that plays a part in its effectiveness.

1.8   Definition of Key Terms

Below are the definitions of some key terms used in this study:

Quality Manangement System (QMS)

QMS is defined in the ISO 9001 standard as a set of co-coordinated activities to direct and control an organization in order to continually improve the effectiveness and efficiency of its performance (www.iso.org).   In another word, QMS is defining interacting processes within the organization which will result in producing good quality products and services.   With this, QMS will enable an organization's goal and objectives with its' defined policy and strategy to meet customer's satisfaction and continuous improvement.   A good QMS will also involve all employees' participation, raise morale, lower cost, reduce wastage, improve process control and increase market share (www.dti.gov.uk/quality/qms)

Effectiveness of QMS training - the use transfers or applies the knowledge and skills learned from the training to the job, also termed as transfer behavior in QMS related assignment (Montesino, 2002).

Employees' Past Work Experience in QMS – Trainees' previous work experiences and their QMS knowledge gained or skills acquired from their exposure in their previous employment (Samer, 2004).

QMS Culture – Culture that embraces a positive QMS mindset and its function into strategic and process management by the employees, customer, suppliers which transcend above the traditional emphasis on financial performance (Piskar & Dolinsek 2006).

Training Infrastructure - Plan and design the training program that meets the organization need and expected outcome (Duguay & Korbut, 2002).

Training Feedback - Feedback about the quality, usefulness and future improvement if any to the training provided (Tannenbaum & Yukl, 1992).

Training Schedule - Schedules for QMS related training with date and duration of each type of required training for each employee in the organization (Tannenbaum & Yukl, 1992).

Training Documentation – Documentation that is use for training to inform, train and update employees changes or requirement in the organization. Good training documentation system with suitable software provides distinct advantage on keeping control on documentation and enhanced training effectiveness (Bangert, 2007)

External Resources – External training provider or consultant that is brought in by the organization to help in the training. This may be due to insufficient resource in house e.g. manpower, equipment, facilities or lack of expertise in the area (Sohal & Terziovski, 2000).

1.9   Chapter Organization

This study is organized into five chapters. The first chapter provides an overall view of the study by introducing the background scenario, which lead to this study. Chapter 2 covers the literature review of this project by discussing the factors concern and basic of QMS that was the backbone of ISO system, the theoretical framework and hypothesis generation. Chapter 3 continues with the research methodology, the questionnaire design, sampling and method of data collection and statistical analysis used. Subsequently, Chapter 4 embodies the analysis of the data and its findings. Lastly, Chapter 5 concludes the discussion, limitation of this study and new areas of research that can be of contributive significance.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

This chapter seeks to reviews the relevant literature that forms the base of this study. The review compares and contrasts the finding from previous researchers. The theoretical framework and hypothesis intricate the training needs that contributes to the effectiveness of quality management system (QMS) training is developed.

2.2   Quality Management in Malaysia

In the competitive and global business environment today, a business organization strives to gain its competitive advantage through quality, cost and trustworthiness (Oakland, 1998). According to the chief secretary of the Malaysian government Sarji (1992) in order for Malaysia to attain the objective of Vision 2020 outlined by the government, quality management systems which involved input-output processes is very important aspect that need to be addressed by both the government and the private sectors. Quality management is essential for survival in today competitive arena. The ability to create quality consciousness in an organization is the foundation on which quality improvement must be built. Quality thought always precedes quality products, services and projects. There are many advantages generated out of quality measures for all sectors like manufacturing, servicing and construction based organizations or companies. Some of the advantages are; reduction in cost of products, services or project, reduction in transportation cost, reduction in wastages and reduction in after sales and maintenance cost (Magd, Kadasah & Curry, 2003). Through a quality product, services or projects customer satisfaction can be achieved and this forms

the important factor for the enhancement of healthy businesses and economic development (Han & Chen, 2007). Juran (1988) stressed that quality need to be planned and managed for continuous improvement and success. Everyone in the organization or company should play her/his important roles toward the attainment the quality objectives.

The quality awareness has existed in both the public or private organizations. Many programs have been planned, developed and organized to create awareness and inculcate quality culture. Awards were also introduced to personal and organizations as motivation and well as benchmark on quality achievement. In Malaysia, quite a number but not very significant, public and private organizations have embarked on Total Quality Management (TQM) to cultivate the quality culture (Mahmood et el. , 2006). This can be seen through the quality award such as Prime Minister's Quality Awards received by organizations every year. The increasing in number of organizations and companies being certified as an ISO 9000 – Quality Management System organization or company by SIRIM QAS Sdn. Bhd., MAMPU and other approved International Standard Organization (ISO) certifying bodies indicated that they are committed in delivering quality products, projects and services. According to Dato' Ir. Hamzah Hassan, the chief executive officer of the Malaysian Construction Industry Development Board (CIDB) in his press statement on May 7, 2003 there were only eighty four out of forty nine thousands registered contractors that have gained ISO 9000 certification for quality management system. On the other hand, based on the 2003 SIRIM QAS Directory of Certified Products and Companies – *Your Guide to Certified Suppliers of Products and Services* listed that only one hundred and thirty one companies under construction category comprise of consultants and contractors were accorded ISO 9000 certification.

2.3   Quality Standards

Quality standards play an important role in every part of our live. When a purchase is made, we expect it to function and meet an acceptable quality, service, reliability, safety and efficiency at an economical cost. To ensure that, manufacturer must meet the quality standards. As a customer, we demand for quality and our supplier comply with our requirement (Poksinska, Eklund & Dahlgaard, 2004). There are many standard organization responsible for many thousand of standards such as ISO (International Standard Organization) and BSI (British Standard Institute).   These organizations:-

- Facilitate fairer trade between countries

- Provide government with technical base for health, safety and environmental legislation and conformity assessment

- Disseminate innovation

- Safeguard consumers on product and services

- Propel developer, manufacturer, supplier and service provider to be more efficient, cleaner and safety concern.

- Providing solution to common problems

- Share technological advances and good management practice

These renowned international standards enable an organization to integrate and align their own Quality Management System (QMS) with related management system requirement (Zutshi & Sohal 2003; www.iso.org). It specifies the requirement for a quality management system where an organization is required to show consistency and be able to meet their customer's product specification and applicable regulatory requirement. All this aims to enhance customer satisfaction through effective application of the system continually improve the system and provide quality assurance to customer as well as meet the applicable

regulatory requirements. Quality practice standards begin in the United States of America after the Second World War. The production of a series of inspection standards was established to ensure the increasingly complex weapons would work in different situation. Over time, their use and scope expanded internationally, which then lead to include management activities. Various standards were developed and refines, and bears some resemblance to our current international quality standards, the Quality Audit for ISO 9001:2000 (Wealleans, 2000). The first commercial standards was published by British Standards Institution (BSI), the BS5750 in 1979 which was purely a standard applied to the UK. This remained such but it was later adopted internationally through leading UK Corporation, which imposes common rules to all their non-British supplies.

The ISO 9000 was produced in 1987, and it is Part 1 and 2 was equate exactly to the same BS5750 Part 1, and 2. This was aimed at manufacturing companies and the clauses were changed to 'process control' 1987 and later, more specifically 'manufacturing' in 1994. This is the birth of ISO 9001:1994. ISO 9001:1994 was later replaced by ISO 9001:2000 on 15th Dec 2000 and manufacturers were given the grace period until mid Dec 2003 to covert and update their quality systems. The changes were a complete restructuring and clarification of its content on the use of process models in quality management, simplify the use of standards to avoid confusion over use of different standards in family for the different types and scopes of operation, reduce ambiguity and interpretation problems and closely compatible to the environmental management system documentation (ISO14000 series). The ISO 9000 main family standards now consist of ISO 9000, ISO9001 and ISO 9004. Previous three standards ISO 9001, ISO 9002 and ISO 9003 have now been integrated into the new ISO 9001:2000, the only standard in the ISO 9000 family against which companies can be certified by an external agency. This new standard is a process-based structure replacing the old 20-clause structure in

i. QMS

ii. Management responsibility

iii. Resource Management

iv. Product Realization

v. Measurement, Analysis and Improvement

ISO 9001:2000 evolved from quality assurance to quality management concept, and hence closing the gap between QMS requirement and TQM models. However, the global automotive industry demands excellent levels of product quality, productivity and competitiveness as well as continuous improvement. Hence, emerge the ISO/TS16949:2002 Technical Specification, which aligns and supersedes the existing US, German, French and Italian automotive quality system standards, including QS9000, VDS6.1, EAQF and ASQ within the global automotive industry (International Automotive Task Force (IATF), 2007). The Automotive Industry Action Group is a globally recognized organization founded in 1982 from Chrysler, Ford Motor Company, and General Motors (http://www.aiag.org). AIAG's focus is to continuously improve business processes and practices involving trading partners throughout the supply chain. It specifies the quality system requirement for design/development, production, installation and servicing of automotive related product. This certification is mandatory for all major leading vehicle manufacturer and this have also been enforces down to the manufacturer's supplier (ISO/TS 16949 Second Edition 2002-03-01) (ISO 9001:2000)

2.4   Quality Management System (QMS)

The ISO 9000 family of international management standards and guidelines has earned a global reputation as the basis for establishing QMS (www.org.com). In today's

business, customers are very well informed, have greater expectation and have become increasingly sophisticated. To be competitive and customer has need and exceed their expectation is one to survive in the business world today. Quality Management System (QMS) provides management a framework that provides necessary control to address risk, measure performance to monitor the business. A set of policies, processes and procedures is needed to plan and execute the core business in an organization. It is up to the organization to interpret the standard to its own objectives (Doherty, 1995). QMS integrates and link various internal processes in the organization and uses process approach to execute a project. With this, an organization not only able to identify and measure but also control and improve the core processes to achieve a better business performance as the QMS matures (Piskar & Dolinsek, 2006)

A system is influenced by a diversity of needs, specific objectives, the products provided, the process used and the differing sizes and structure of an organization. The aim of ISO is to promote the process approach when developing, implementing and improve the effectiveness of quality management system to enhance customer satisfaction by meeting their requirement. Quality Management focus on eight principles

    i.   Process approach – related resources and activities are managed as a process to achieve an expected result.

    ii.   System approach to management – identify, understand and manage the inter related process to meet a give objective improves the organization effectiveness and efficiency.

    iii.   Continuous improvement – ongoing improvement are the permanent objective or an organization

    iv.   Leadership – leaders with vision and mission and creating a conducive environment for employee's participation in achieving organization's goal

v. Involvement of the people – motivate employees for all are the valuable human capital

vi. Factual approach to decision making – the use of data and it's analysis to make decision rather than based on opinion and feelings

vii. Customer focus – strive to understand current and future customer need and to exceed customer expectations

viii. Mutually beneficial supplier relationships – an organization and its suppliers are independent, and mutually beneficial relationship enhances the ability to create value.

Below is the various linked activities using resources and transform inputs into outputs through the various processes, ISO 9001:2000 Quality Management System Design extracted from the Technical Specification of ISO/TS16949:2002, Second Edition.
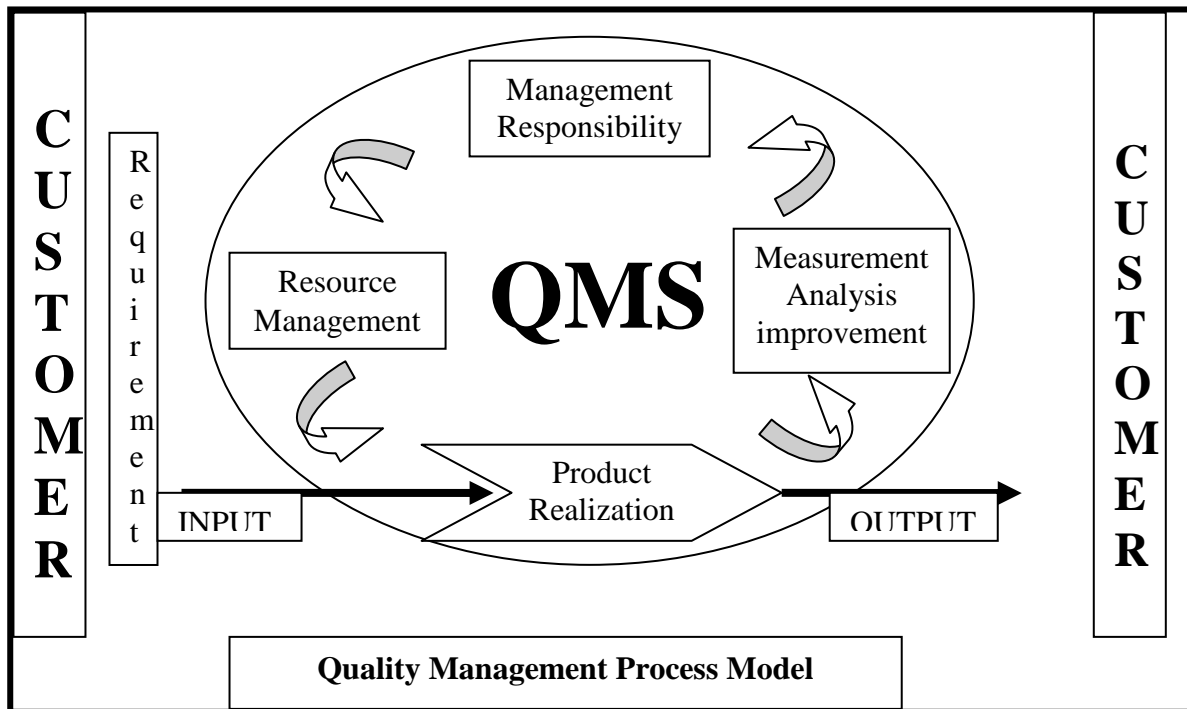
This approach in the quality management system emphases on the importance of understanding and meeting requirements, consider processes that adds value, process are performance oriented and effective, continuous improvement concept with a measurable objective and TS16949:2000 added requirement on defect prevention, reduction in variation and waste in the supplier chain. TQM concept was first introduced by Dr W.E Deming and Dr, J.M. Juran. The philosophy of TQM employee's involvement at all levels and promotes the wellbeing of the company as a whole. It heavily depends on management support and linking top management goals with a set to TQC tool at operators' level to work on. TQM is defined as organization-wide quality programs, which continuously improve its products and services to customers and in line with QMS.

2.5   The Importance of Training

Training comprises of four levels according the to Kirkpatrik's model of accessing training effectiveness. First is the reaction of the trainees on what they feel and thought about the training. Secondly, is pertaining to the increase knowledge, skills and capability of the trainees resulted from the given training. Thirdly, is referring to the extent of the trainees' behavior and capability of the trainee in term to the implementation or application of the skills learned on the job. Finally, it is the result of the training, i.e. the effects on the business or environment resulting from the trainees' performance itself (Winfrey, 1999). There are well established links between the provision of employee training and use of quality management practices but there is some debate about the extent to which the two practices may work together to enhance performance outcomes. Several empirical studies of enterprise training and performance have found no necessary link between employee training and the use of other management practices (d'Arcimoles 1997, Bartel 1994, Holzer, Block, Cheatham and Knott 1993). These studies suggest that training, in and of it, can enhance the performance outcomes of firms. Snell and Dean (1992) found that the use of advanced manufacturing technology (AMT) and the use of quality practices were both associated with the 'comprehensiveness' of employee training but they found no interaction effects from the use of these practices in combination. Bartel (1994) examined job redesign, performance appraisal and employee involvement, finding that training was 'unaffected' by the implementation of these practices, in its performance enhancing effects. Bartel used a value-added measure of productivity based upon net sales per employee and found that the introduction of new training programs led to a productivity gain of 18.86% over three years. Significantly, this gain applied across the board to low performing and high performing companies, leading Bartel (1994) to observe that: "the implementation of formal employee training programs can enable businesses that are operating at below-expected levels of labor

productivity to eliminate this gap."

Holzer, Block, Cheatham and Knott (1993) studied the effect of training grants on firms training effort and found that the one off training grants led to a doubling or tripling of the training effort during the period of the grant. This increased training effort was associated with a 0.5 to 0.7 percentage points decline in the scrap rate, a gain which persisted after a decline in the training effort. It was the extent of the training effort that seemed to influence improvements in quality outcomes rather than any necessary use of quality practices. d'Arcimoles (1997) examined the effects of employee training upon the financial performance of 61 French firms and found that there were significant immediate and lagged effects. Expenditure on training by firms was associated with 'immediate and permanent' improvements in productivity and profitability, leading d'Arcimoles (1997) to find that: "substantial training expenses seem to be a good sign of future economic performance." Training, some would suggest, has a direct effect on productivity, internal quality and financial outcomes for firms, by raising the general level of skills and enhancing the human capital of the firm. This effect is seemingly independent of the application of quality management and other management practices. Employee training, in this view, is a standalone practice that leads to effective task performance on the part of employees and this is reflected in enhanced firm performance.

2.6 Quality Management System Training

The implementation of quality management practices has long been associated with an increase in the provision of employee training. The founders of quality practice in manufacturing emphasized the importance of employee development, education and training for the improvement of quality performance and firms seeking to implement quality management have consistently found it necessary to improve their training effort (Deming

1982, Ishikawa 1984). Firms pursuing a quality strategy have found it necessary to invest in 'human-capital-enhancing' activities such as training, in order to enhance performance improvements in productivity and customer satisfaction (Snell & Dean, 1992). Employees require some training in order to manage the enlargement of their work role following the delegation of responsibilities for quality, they also require some training in non-technical skills to be able to participate in quality improvement activities and they need a broader range of skills in order to flexibly respond to changing customer and market requirements (Schonberger 1994). Training for quality management requires the development of specific skill sets that support quality management practices. Such training is important, not only to ensure the successful adoption of quality practice, but also to ensure the achievement of the broader quality mission of improved firm competitiveness (Dertouzos, Lester and Solow 1992). The success of the quality strategies adopted by the firm and the effectiveness of the quality management system employed within the firm, are dependent upon the supply of appropriately skilled labor (Mason, van Ark and Wagner 1996, Prais 1995).

Some studies have suggested that employee training directly enhances firm performance by raising the general level of skills. As employees become more highly motivated and more highly skilled, so their task performance improves and organizational effectiveness is directly enhanced (Bartel 1994, d'Arcimoles 1997). Employee training may, in this view, be seen as a discrete or stand alone management practice, one that directly enhances the human capital of the firm and so directly leads to performance improvements. Other scholars argue, however, that employee training has a mediated rather than a direct affect upon firm performance. These scholars argue that employee training is more effective when used in conjunction with other management practices and those compatible sets of practices are more effective in raising performance, than any individual practice. This argument suggests that training, whilst effective in raising general skills, is more effective

when it develops firm specific skills and so supports the operation of the particular business process systems within the firm. Training, when used to support quality management practices, should contribute to the effectiveness of the quality management system. Training should enhance the integrity these systems, rather than merely raise the general level of employee skills (Gee and Nystrom 1999, Jayaram, Droge and Vickery 1999).

2.7   Benefits of QMS Training

An established QMS in an organization is critical to enable an organization utilize it as a vehicle to drive for continuous improvement using quality policy as the roadmap. This is required to meet ongoing customers' increasing expectation on quality of products, reduced cost with better service (Kottler, 2007). For example, an established QMS assists an organization in documenting their procedures, keep track of records, cost, improvement plans and place preventive measure. All these action will eventually reduce the reject rate and increase the production yield through improved quality and reduced production scrap page. This in turn translates back into improved quality at reduced cost, which gives the organization the competitive edge over their competitor in business (Chase, 2006) (Magh, Kadasah & Curry, 2003). QMS gives the organization the confident and clarity to fulfill their objectives with greater degree of internal control. This minimizes grey areas and hence minimizes the potential wastage of resources though duplicated or redundant work.   QMS also provides a standardize practice and establish a proper communication channel for employees, management and to the external parties such as their suppliers and customers (Smyth, 1996). Ultimately, this will increase customers' satisfaction and confidence. According to the SMMT (2007) the, global distribution and recognition of the certification are 41% of Asia Pacific, 31% in Europe and 18.5% America, 4.5% South American, 5% India and Africa are registered to ISO. Report from SERI 2006 shows a two fold increase in

foreign investment in 2005, and hence, for Penang manufacturer to remain competitive and retain customer's confidence, ISO 9001:2000 or ISO/TS16949:2002 certification is one of the customers' expectations.

Training educate people to help them become productive followers and leaders is an important leadership responsibility to accomplish the organization objectives, to groom more potential leaders and take care of the followers who are the complying users of the QMS such as production, process engineer, logistic or sales team. Training helps understanding the requirement and improves teamwork to ensure success of QMS in the organization (Hale, 2003). Therefore, training on QMS is important to ensure that all employees are

- Align to the organizations defined mission, vision, objective, goals and policy.

- knows the products provided, the processes employed and the structure of QMS of their manufacturing organization

- understand and knows their role and responsibilities, as well as the importance of it in the QMS

- learn, understand and apply the knowledge learned on the job

- preventing non conformities at all stages from design through to servicing

2.8   Problems Encountered in QMS Training

Trainers who good speakers may be lack in systematic knowledge of the manufacturing process requirement will stumble the success of training.   This may also affect top management decision to invest in getting external trainers (Mako, 2005). According to Albrecht (2004), various method of training, type of training, training design and plan have different impact to the learning potential of the trainees. QMS is a very dry subject, which required participation of all levels and function in an organization at various levels and highly challenging to find the right balance to make it a success and effective.

Training conducted must also be relevant to the trainees' job responsibility to enable them to apply on the job effectively. Mike Berry (2006) reported a 70 billion pounds cost of poor productivity due to ineffective training. Follow-up and feedback after the training is important to ensure effectiveness but this requires additional work force and commitment from trainees and trainers as well as support from top management.

Culture varies and is very subtle in every organization. To change a culture, even at best, takes a long period. Hence, for an organization to introduce a new quality culture within the existing culture will face similar problem. Organization that converts the old QMS in the old ISO 9000:1994 to the new ISO9001:2001 mere to comply with the new requirement on paper only may have poorly adapted from the previous standards, hence producing a sub-standard system (Costa & Lorente, 2007). Organization that retaining the old culture towards quality management may also face less success with the effectiveness of the training as trainees will most likely choose the comfort of the old quality culture (Gotzamani, 2005). Documentation use in training have is constantly updated to reflect the latest changes. Hence, communication across function and levels in the organization has be good follow-up by proper documentation. Documentation work is dry, laborious and required diligence and accuracy. However, without such quality documentation trainees will be misinformed and incorrectly trained.

One of the common traps to training effectiveness is the myth, according to Hale (2003) that perceived by superior or the organization: - learning is the sole responsibility of the trainer, not on the organization or the trainee itself. All trainees who attended a course will automatically understand, apply and transfer the skills when the time and situation arises and good course evaluation results are assumed a good training without measuring the effectiveness and encourage transfer-enhancing behavior before its benefit can be fully realized. Frequently, trainees may have misconception if being send for training by their