The Holistic Egyptian Quality Management Approach “HEQMA”

The Holistic Egyptian Quality Management Approach “HEQMA”

By

Osama Kamal, PhD

CAMBRIDGE SCHOLARS

PUBLISHING

The Holistic Egyptian Quality Management Approach “HEQMA”,
by Osama Kamal, PhD

This book first published 2013

Cambridge Scholars Publishing

12 Back Chapman Street, Newcastle upon Tyne, NE6 2XX, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-4668-6, ISBN (13): 978-1-4438-4668-4

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENTS

I am grateful to Professor Lotfy Louise, my supervisor, who handles a student with a free spirit like me and my project with the right touch. His guidance and encouragement were so important to me.

For Professor Hasan El-hofy and Professor A. El-Kashlan, their ideas had an impact on my approach, for Professor Sherif El-Araby, to whom I have turned repeatedly regarding facilitation of the project. I pay tribute to them all.

I would like to extend my appreciation for my examiner; Professor M. Anwar El-Dardiry and his patience in reviewing this thesis and for his comments.

I would like to extend my appreciation also to the following organizations: production engineering department, Alexandria University and the Arab academy for science and technology and maritime transport.

Industrial experts from the following companies: El-Araby home appliances, El-Araby for lighting Technology, Mr. Samuel Beshay, EFQM representative in Egypt – Alexandria Petroleum Maintenance Co. Petromaint; Ex-chairman and board members. Amria pharmaceutical Co.; Pharco, Pirelli Tires Co; Egyptian Petrochemical Co.

They assisted me in conducting the focus group in different industries.

To my sister, the doctor whose enthusiasm for certain ideals has made a great impact on me, to Dr. Soliman Gliwan, my Libyan colleague in the PhD journey; they offered their endorsement.

Talking about research is one thing, actually doing it is another. As a student who was fond of quality management work in the nineties of the past century, the road is far from straight. I realized the impact of the dual people-process concepts on the perceived quality model, and that this simple structure was too pretty to be dismissed. In the end, all should be left to practical applications.

Osama Kamal

E-mail: OKamalabd@hotmail.com

LIST OF ABBREVIATIONS

BSC	Balanced Score Cards
BPR	Business Process Reengineering
CSI	Satisfied Customer Index
EIO	Egyptian Industrial Organization
EMS	Environmental Management System
EQMA	Egyptian Quality Management Approach
EFQM	European Foundation of Quality Management
ISO	International Organization for Standardization
JIT	Just in time
MBNQA	Malcolm Baldridge National Quality Award
MPI	Measuring Performance Improvements
NQI	National Quality Institute
OHSAS	Occupational Health and Safety Assessment Series
OJT	On Job Training
P&QI	Productivity and Quality Inst
QMS	Quality Management Systems
RADAR	Review-Assess-Deploy-Approach-Results

CHAPTER ONE

INTRODUCTION

Industrial organizations in developed countries have passed many quality progress phases. There was quality control, Q.C., passing to quality assurance, QA, and reaching TQM. Egyptian Industrial Organizations, EIO, bypassed or jumped over the Q.C. phase in many cases, to practice Quality Management Systems, QMS, without verifying product quality first.

From a historical stand point, the EIO was compelled to apply different QMS in the last decades, although they belong to the sixties of the last century.

On the other hand, there are increasing concerns of improving organizations' performance levels in the developing industries, and the recognition of the influence of human factors on performance.

So, during the last decades, many quality management entries have been coined to include in an excellent organization's characteristics: the Human Resource capital.

The quality is as important as either a system or characters. Problems in the Egyptian Industrial Organizations (EIO), such as quality control problems, have led to moderate product quality and management problems. So there is a need to concentrate on quality management models that take care of Q.C. principles in order not to miss an important component of global quality constituents.

As good remedy efforts for a Quality Management project, it is necessary for the Egyptian organization's top management to be fully aware of the concepts and requirements of excellence management. Top management should realize the importance of international applications and initiatives of specialized agencies in Measuring Performance Improvements (MPI) models for superior quality.

Those management initiatives are also useful in the self-assessment process. This research focuses on those concepts later.

The EIO needs, in this respect, to experiment with a Quality Management logic which is close to its industrial business culture in the

current phase, instead of applying scattered and diversified Quality models which can waste time and effort.

On the other hand, it cannot be ignored that many organizations have rightly been guided to searching solutions for a new organizational formula to rise with and reach the status of a "high performance" organization.

1-1 Research Problem

1 - Why is the implementation of QM models not achieving targeted results?

2 - Can we find a model that is derived from TQM, which is ever fertile and promising; to explore new integrative management ideas that suit Egyptian industrial culture?

3 - What are the methods for measuring performance improvement in EIO?

4 - With the validity of the new TQM approach as a national one, can the profit of EIO market and the field of QM be improved?

The absence of the domestic high technology for upgrading the quality of our products, along with cultural dimensions, can call for a cultural scale.

According to the Hofstede scale, the Egyptian characteristics in particular of the Arab world have the predominant characteristics of "Large power distance" and "Uncertainty avoidance", he also pointed out that the loyalty in a "collectivist society culture" is paramount; (such as obedience, group spirit, social relations, etc.).

Other characteristics he uses are long term orientation and masculinity (geert-hofstede.com.3/2009).

The above scale will be considered in the formulation of the proposed model. For example, Leadership is an opponent to the concept "Large power distance".

In historical order, Egypt had many charismatic leaders many decades ago, such as Talaat Harb Basha, Aboud Basha, and Farghaly Basha who fought for national belongingness and vision. The appearance of such role models is encouraging for grouping team work and agreement on conjoined goals.

The importance of role models is to enhance the leadership for the application of a good QM model.

The problem is that no one has previously engaged boldly to intervene and tackle the situation of developing new approaches for "HOW" to improve performance.

1–1–1 Pilot study

The pilot study was done to document that there is a problem with the existing TQM models being applied successfully in the Egyptian business arena. Content validity of the research is achieved through this pilot study.

There is a relationship between optimal Quality Management Systems and the creation of domestic high technology; the study also looks at this aspect.

The study was done through a review with three academic members from the Arab Academy for Science and Technology and Maritime Transport AASTMT and Alexandria University to adjust the focus group theme and problem. At the same time, there were initial interviews with a group of top management of Petromaint, Projects GM, Proposals and contracts GM, and the financial GM, who is a board member as well. Interviews were also held with the chairman (PHD holder) and his assistant (MBA holder) as "key informants". This has been very helpful in developing and designing HEQMA focus group dimensions and questions, as they have professional expertise consolidated by academic background.

A focus group is a new analytical method which uses a lower number of samples than a mail questionnaire, but with much greater depth in the information collected and in reliability, as it depends on face to face interviews. As Aoki (2007) declared, the divergence between canonical and non-canonical practices suggests that actual practice cannot be controlled completely through formal procedures.

The field study helped to enhance the knowledge and ideas of the researcher toward the research subject and its results. It also guided the rephrasing of the subtitles, management ideas, and concepts used in EIO. Interviews helped with the procedures of the consequent focus group and on getting the proper communication channels with relevant authorities.

The problems with EIO call for reaching a quality management model suiting its circumstances, sourced from ground experience, and verified by Egyptian industrial expertise.

It is concluded then that there is a gap between what Egyptian manufacturers' demands are, and what they get regarding international quality management models.

Another broad problem area was expanded through literature reviews, which revealed the need to develop a new national model. The researcher also expanded the broader problem area through practice.

1-2 Research Hypothesis

Among the existing quality management concepts that have relations between salient constructs, the main TQM variables presented in the proposed model are gathered in 4 bundles containing the ten main items of the model.

- Independent Variables are: Top Management Commitment and Corporate Ethics
- Dependent Variables are: Outcome factors: Marketing Results and Satisfied Customer Index CSI
- Moderate variable is: Human capital: Motivation, Team performance, training and development
- Intervening variable: Internal capabilities (Improving productivity, Cost of Quality, Safety and positive Impact on Society)

Research hypothesis are:

H1: Egyptian Top management commitment has a direct and positive impact on their Customer satisfaction.

H2: Egyptian Corporate Ethics have a direct and positive impact on the HR capital.

H3: Top management commitment has a direct and positive impact on their organization's internal capabilities.

H4: HR Capital has a direct and positive impact on the organization’s marketing results.

1–3 The links between variables

To illustrate the philosophy of building up this Egyptian model, it is fundamental to say that the key role of top management is to create corporate values and vision, and inspire people by active positive attitudes and behaviours; those are rooted in ethics.

This will lead to envisioning and establishing cooperative teams and a learning organization spirit through training and people development. Thus managers can manifest the internal capabilities of the organization, which will stimulate and interact with quality marketing, and project them in a clear and consistent manner to raise the satisfied customer index (CSI).

It can be seen then that the model is dynamic and has consecutive relations between inputs and outputs, with intermediate and intervening factors working as catalysts.

1-4 Research Objectives

1 - Finding the best modules that fit for Egyptian Industry, thus improving the competitiveness of the EIO in particular and eventually the Arabic practice of TQM in general.

As Evans (2005) expressed:

> "Measuring organizational success and implementing effective strategies for the future represent continuous challenges for managers, researchers and consultants".

2 - Formulating a Holistic Egyptian Quality Management Approach **HEQMA**.

3 - This will eventually strengthen the progressive industrial quality, moving it one step up, eventually supporting the integration of the Egyptian economy into developed industrial alliances.

4 - Another aspect of importance for this study is the development of an applicable quality management model which can be used by the research community, or practical applications in other dimensions. In the academic paradigm, this research would unfold the subject of developing new quality management models for specific sectors in the EIO. The topic is expected to unleash the horizons for introducing practical but scientific solutions that the Egyptian businesses are thirsty for.

5 - In essence, the results of this research can help EIO management in making crucial decisions and in resource allocations that are required to make the HEQMA implementation a success for a group of them.

1-5 Research methodology

It is important to highlight that the research area should develop many questions on management culture for the benefit of the Egyptian industry; this research used many methods to achieve its objectives:

1 - Reviewing the literature on the current TQM status and success factors for implementation, worldwide and in Egypt.

2 - Capturing the advantages of each major international quality management model over the others, and using their harvested benefits.

3 - Evaluating how HEQMA can be successful in terms of EIO cultural dimensions. Moreover, the study gets closer to the Egyptian industrial experts, academics, and representatives of international QM models to grasp and use their knowledge on HOW to improve EIO.

4 - Using descriptive analysis to capture the relationship between TQM concepts and successful implementation.

5 - Developing a model and scoring system for a TQM approach suitable forlidation by a Focus Group technique amongst Egyptian industrial managers, representatives of International QM models, and academic scholars; qualitative data is collected to assure a salient "HEQMA", which accords the Egyptian business domain.

For the first model of variance, for the 10 proposed model items, Cronbach Alpha was found to be -0.756.

For the second model of variance is for questions and interview, Cronbach Alpha = 0.7514.

This shows that the two models of variance are stable and the interview questions are reliable.

It can be seen that the conclusion of the research is in accumulative portions; not necessarily to be a sudden shock or fundamental change in concepts.

1-5-1 Literature review

Different maturity of Quality forms have been reviewed; philosophies, models, and tools. Their current application in Egypt was then reviewed.

Many Quality models are discussed in the following chapters. However, to sustain reliability of the research, a clear definition and methods of each quality model is demonstrated, including reasons for application, success, and potential obstacles.

Quality models are then judged and compared, including models developed by other researchers. Links and gaps between those models are pointed out.

During the construction of this model, an explicit relationship between the various TQM tools and concepts is established. There is value in looking at customizing some requirements of the international quality standards as a dependable source for quality sub-items. Also, quality dimensions that are not necessarily a requirement of a standard, but work as a cultural catalyst, are integrated in the proposed model, such as cost of quality and some entries of training and corporate ethics. This approach can then be a model for how to measure the performance improvement (MPI).

A vision for the future is gathered then, out of the literature reviews to form the imposed model.

1–6 Research Outcomes

- Identifying HOW TO MEASURE and the "mechanisms" to improve different quality elements in detailed attributes.

The model takes care of the quality control elements in Egypt, where they have been ignored for decades; the model is not ignoring the Human Resource capital of the Egyptian people. The model linked goals, measures, and improvement activities all together. For this, the model elements have to run simultaneously.

- Defining the main quality elements needed for Egypt in four bundles, while integrating them in a unique way.

- Calling for other business attributes to be included into quality concepts, such as financial, safety, and marketing perceptions.

HEQMA specifies where the organization should consider correcting its path, and then improve its results, as well as the result indicators for excellence to be achieved.

- The goal of this research is to strengthen the Egyptian industrial quality, moving it one step up, and eventually supporting the integration of the Egyptian economy into developed industrial alliances.

1-6-1 How the model will benefit Egypt and the Arab world

The HEQMA model helps top management to reach business excellence without the need for a management consultant, or at least it saves half of the consultancy service.

Theory and application: Theory and application were linked in HEQMA by numbers of ways: through the stages of the research project, many industry leaders and consultants were investigated. Also, linking demonstrated quality entries with HEQMA while discussing them.

Also, looking for quality management models as a certification or award only will not be a good business model, or an academic research project.

In HEQMA, there has to be human leverage, training on different soft skills, and systematic experiences devising, through succession, plans for example.

CHAPTER TWO

LITERATURE REVIEW

Using different quality management approaches benefits organizations differently. In this chapter, each quality management model or technique will be discussed to create constructive points for their understanding and use. The demonstrated concepts here represent a base for the QM model formulated later in this research study.

2-1 International QM Philosophies, models and tools:

To be specific, it is intended to review the different quality maturity levels:

1 - There are integrative quality gurus such as Deming, Crosby, Juran, Feigenbaum, and others; there are also the generic approaches which can be classified as a Philosophy, such as TQM, Business Process Reengineering BPR, and World Class Manufacturing WCM.
2 - On the other hand, there are models like Balanced Score Cards BSC, Malcolm Baldridge National Quality Award (MBNQA), European Foundation of Quality Management (EFQM), ISO9000, and others, which can be considered as the quality management system models.
3 - The remaining tools and techniques include Kaizen, Just in time JIT, Lean Production, Six Sigma, and Bench marking.
The following is a demonstration of the above. To sustain reliability in discussing the above, a clear identification is demonstrated during its presentation, and distinctive edges and any obstacles will be highlighted. Also, the operating conditions and actuation circumstances will be investigated where possible.

2-1-1 Edwards Deming

As a major quality guru in recent decades, the following are a condensed list of the 14 points regarding Deming's management:

1. Create constancy of purpose toward improvement of product and service.
2. Adopt the new philosophy.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve the system of production and service constantly and forever.
6. Institute training on the job.
7. Institute leadership; the aim of supervision should be to help, and use machines and gadgets to do a better job.
8. Drive out fear so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design sales, and production, must work as a team.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels for productivity.
11. Eliminate work standards (quotas) on the factory floor. Substitute Leadership. Eliminate management by objective. Eliminate management by numbers or numerical goals.
12. Remove barriers that rob the hourly worker of his right to pride of workmanship.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation.

The above principles are a mix of Q.C., assurance, and TQM concepts.

2-1-2 Feigenbaum principles

1 - Total Quality System.
2 - Design Quality in.
3 - Customer Orientation.
4 - Total quality Control.
5 - Quality is a company-wide process.
6 - Quality is what the customer says it is.
7 - Quality and cost are a sum, not a difference.
8 - Quality requires both individual and team zealotry.

9 - Quality is a way of managing.
10 - Quality and innovation are mutually dependent.
11 - Quality is an ethic.
12 - Quality requires continuous improvement.
13 - Quality is the most cost-effective, least capital-intensive route to productivity.
14 - Quality is implemented with a total system connected with customers and suppliers.

These quality awareness principles are a good prerequisite for any quality movement.

2-1-3 Crosby principles

Crosby (1979) mentioned that a quality vaccine is: Determination, Education and Implementation. His fourteen steps to quality improvement are:

1 - Evolve from the need to define, understand and communicate the "absolutes" throughout all levels of an organization. This is a methodology for implementing the quality improvement process (disliking the word "program", as it implies temporary) in an organization.
2 - Ensure that clearly visible signals that management is committed to quality permeate throughout the organization.
3 - Setup quality improvement teams with a senior representative to demonstrate high-level commitment.
4 - Measure and identify current and potential quality problem areas.
5 - Evaluate "cost of quality" and ensure its potential as a management tool is understood at the appropriate levels.
6 - Raise the level of quality awareness and encourage it as a personal concern of everyone.
7 - Ensure corrective actions are placed, the importance is accepted and they are adequately addressed.
8 - Establish a monitoring system for the improvement process.
9 - Educate and train supervisors on their role and responsibilities in the quality improvement process.
10 - Program "Zero defect days" to communicate progress to all levels, taking the opportunity to reaffirm management's commitment to quality.
11 - Encourage that which allows individual and team goals to be set.

12 - Encourage two-way quality communication and highlight obstacles to achieving individual and team goals.
13 - Recognize and appreciate individual and team efforts.
14 - Establish quality councils to discuss quality matters on a regular basis.

Visibly repeat steps 1 to 13 to demonstrate that the improvement process is continuous.

This is another wave of inculcating quality awareness in the organization.

2-1-4 Juran principles

As mentioned in Juran (1993), are:

1 - Management involvement.
2 - Quality planning.
3 - Quality control.
4 - Quality improvement; let Quality becomes a part of each upper management agenda.
5 - Quality goals enter the business plan - Goals are deployed to the action levels.
6 - Measurement is established throughout the organization. Upper managers regularly review progress against goals.
7 - Recognition is given for superior performance.
8 - The reward system is revised.
9 - Benchmarking.
10 - Training is done at all levels.

Top management's commitment is clearer in Juran principles; MPI is now a mature concept. Juran also claims that Philip Crosby's Zero Defects approach does not help, since it is mistakenly based on the idea that the bulk of quality problems arise because workers are careless and not properly motivated.

Benchmarking cannot be utilized properly by EIO.

Further to this, it may be beneficial to mention the philosophy of the Productivity and Quality Institute P&QI and Ishikawa in the same context.

2-1-5 Ishikawa principles

Ishikawa sees the Company-wide Quality control movement as implying that quality does not only mean the quality of product, but also of after sales service, quality of management, the company itself, and the human being. This has the effect that:

1 - Product quality is improved and becomes uniform.
2 - Defects are reduced.
3 - Reliability of goods is improved.
4 - Cost is reduced.
5 - Quality of production is increased, and it becomes possible to make national production schedules.
6 - Wasteful work and rework are reduced.
7 - Technique is established and improved.
8 - Expenses for inspection and testing are reduced.
9 - Contracts between vendors are rationalized.
10 - The sales market is enlarged.
11 - Better relationships are established between departments.
12 - False data and reports are reduced.
13 - Discussions are carried out more freely and democratically.
14 - Meetings are operated more smoothly.
15 - Repairs and installation of equipment and facilities are done more rationally.
16 - Human relations are improved.

The Ishikawa principles are also focused towards Q.C. in a clear manner.

2-1-6 The philosophy of the Productivity and Quality Institute

As one of the Arab Academy for Science and Technology's units, the P&QI has a strategy of:

1 – Understanding, documenting and reviewing customer requirements and responding accordingly;
2 – Adopting a philosophy of continuous improvement;
3 – Attaining the most recent international standards in different fields;
4 – Updating scientific and study courses to the most developed worldwide;
5 – Utilizing the most competent and qualified human resources and continuing to develop their skills;

6 – Conducting peer service agreements with big expertise houses worldwide.

The above are the main Gurus' principles which are integrative and cover almost all quality concepts, with more details. The first four quality gurus were consulted regarding the integration of their principles into the proposed model, where applicable:

2-1-7 Juran principles

The first principles were stressed in this model: management involvement is achieved through many indicators of the model regarding management commitment. Also many items reflect quality improvements in the form of percentage improvements, as is clear in the model. Long term planning and benchmarking may be difficult to achieve in Egypt due to the varying industrial circumstances.

2-1-8 Deming principles

The essence of his principles where adopted.

2-1-9 Crosby principles

They are taken into consideration when establishing the model sub-items. All principles are included in the model items except for the zero defects principles, which may be far away, but can be a future strategy eventually.

2-1-10 Feigenbaum

The model is a system for total quality; it reflects not only quality for customers, but profit for all stakeholders and good income for employees. The customer orientation is clear in the system in many ways of the satisfied customer index.

The Leadership, which is a fundamental component of TQM, is transformed in the model in the form of "Top management commitment" and "corporate Ethics" to suit the collectivistic culture of Egypt.

2–2 Quality Approaches

From the above, many quality approaches and business processes are generated; amongst them are:

2-2-1 Business Process Reengineering (BPR)

BPR philosophy is a major or root change of the organization and is based on radical rethinking. It should not be looked at as a mending or repair process, but as a new arrangement or disposition to overcome redundancy. Since its spread through the literature in 1993, the BPR concept became one of the modern theories through which the specialists found a way to confront organizational collapse and market share loss. BPR advocates the customer-driven mechanism.

Stebbins et al (1998), explains the mechanism established within the organization for organizing and conducting the BPR change program, and that it determines to a large extent the capacity to carry it out and its success. The nature of the mechanism's structural configuration, its creation, key processes, and linkages to the formal organization, also determine employee commitment to change.

Management experts on BPR have proposed that BPR consider the integration of all aspects of the system while focusing on the reengineering of key processes. Paradoxically, the focused energy and effort on reengineering key business processes results, in many cases, in a lack of attention to integration. At issue is whether BPR change initiatives are narrowly focused versus comprehensive system-wide change programs.

Tennant and Wu (2005) pointed out that the concept of business process improvement encouraged businesses to consider company-wide processes rather than focus on production processes only. This led to the conception of business process reengineering (BPR) to promote "the fundamental rethinking and radical redesign of business processes to bring about dramatic improvements in performance". BPR remains the quest for improvement through quick and substantial gains in organizational performance by starting from scratch in designing the core business process. This has led to BPR being promoted as one of the major modern techniques of changing management within organizations.

However, O'Neill and Sohal's (1998) study showed that *the Organizational benefits from BPR*, at least to a moderate extent, were:

- Productivity, decreased cycle time, inventory or cost;
- Profitability, increased economic growth; and

• Quality, improved products or services and related information.

The same study showed that the most severe problems in BPR implementation were in the minor to moderate level BPR problems. Problems were then classified broadly into the groupings of planning, operational, up-front costs, side effects, organization environment, and problems due to a lack of results from BPR projects.

Al-Mashari et al (2001) declared in their study findings that the six change management elements in BPR were: Roles and responsibilities, organizational structure, management systems, skill requirements, shared values and beliefs, and reward and recognition systems.

The proposed model in this research supports the measurable and gradual corrections and improvements rather than radical changes the BPR brings.

2-2-2 World class manufacturing (WCM)

The phrase "world-class manufacturing" is one of the most overworked terms in management glossaries at present. However, one of the most comprehensive definitions of WCM is provided by Salheldin and Eid (2007), which refers to many techniques and technologies designed to enable a company to match its best competitors. These techniques include for example, JIT, quality circles (QC), Kanban, material requirements planning (MRP), flexible manufacturing system (FMS), computer aided design (CAD), computer aided manufacturing (CAM), computer integrated manufacturing (CIM), manufacturing resource planning (MRPII), total quality control (TQC), total productive maintenance (TPM)/Preventive Maintenance, TQM, simultaneous engineering, benchmarking, intelligent manufacturing, electronic commerce, business process re-engineering (BPR), enterprise resource planning (ERP), electronic data interchange (EDI), and supply chain management.

The same reference added that WCM has emerged as a result of many business drivers. Firstly, the changes in the driving forces for manufacturing strategy, from an initial push to improve current business processes to achieve savings and improve efficiency, the companies have come to be driven by a desire for greater supplier involvement and customer service in later implementation which lead to the adoption of a mass customization production philosophy. Secondly, competitors' use of the WCM techniques and response to customers also has a strong effect on the adoption of the most advanced WCM techniques for the production purposes. Thirdly, as a result of its growing ability to bring new

opportunities and to facilitate the development of the new organizational forms and structures needed to meet the continuously emerging changes in business imperatives, the WCM importance increases as it becomes involved in each task in today's business. Finally, IT developments are also forcing organizations to be up-to-date in their use of advanced technologies regarding delivery of speedy and high quality information, as well as facilitating greater degrees of communication and integration across business units and external partners.

Drivers and barriers to WCM implementation in general have been classified in various ways; for example, regarding external drivers: global competition, international customers' needs, developments in IT. Internal drivers include changes in the organizational strategies and savings. WCM barriers can be the need for cost justification, resistance to change, lack of management support, lack of knowledge, lack of appropriate monitoring, and lack of employee education and training.

It is clear from the researcher's point of view that WCM is a class that is a long way from being adopted in Egypt for the time being.

2-2-3 Total Quality Management (TQM)

When conducting a study on TQM, it is recommended to highlight the ambiguity associated with the term, it is also important to clarify what TQM refers to. If we go back to the origin of TQM, the definition given by the British standard BS7850 is as follows:

TQM is a Management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization (BS7850, Part1, 1992).

Some fundamental concepts for TQM, as per the same reference, are:

1 - Commitment
2 – Customer satisfaction (Internal & External)
3 – Quality losses
4 – Participation by all
5 – Process measurements
6 – Continuous improvements
7 – Problem identification
8 – Alignment of corporate objectives and individual attitudes
9 – Personal accountability
10 – Personal development.

TQM considers that applying a quality system is an essential supporting technique for TQM.

Nevertheless, El-Araby and Abdel Ghany (2007) have carried out a literature survey which provides guidance on the most authoritative reading on the subject. They noted that:

> TQM has been defined as an approach, framework, methodology, philosophy, process, system…etc. by various researchers. While a number of empirical studies reached the conclusion that its implementation improves organizations' operational and financial performance, other studies claimed a negative relationship among same, whereas still others denied any effects.

In the researcher's view, those who denied the effects of TQM may need to apply BPR instead.

The same reference also pointed out the most significant factors that have contributed to the persistence and strength of TQM, which are:

The recognition and demonstration of the importance of quality as a source of superior competitiveness;

The success of Japanese firms in taking and retaining a market share from their Western counterparts;

The Influence of the teaching and writings of the so called quality gurus, and the introduction of recognized quality awards.

In the personal interview with Dr. El-Araby, in the pilot study phase, he explained that Deming has lately reached the theory of knowledge; that the CEO of the organization provided a crew of specialized experts in every branch he dominates. Dr El-Araby added that TQM is inculcated in all the other quality entries: JIT, 6 sigma, kaizen, lean, etc., and that the TQM relation with HR is diversified, for example empowerment has about 70 dimensions; concerning involvement and participation, a subsidiary of it is to study types of teams at work.

It is not sufficient to inspect, control, or assure quality in order to achieve customer satisfaction. TQM requires the application of quality management rules and principles to every component and at every level of the organization. Everyone should be committed to continuous improvement in their part of the operation. Through this participation and commitment, with the use of different tools and techniques that the TQM concept has adopted or developed, quality can be managed effectively (Eraqi 2006).

However, Raisinghani et al (2005) found that for TQM implementation, in many cases, it is followed by disappointment because implementation was not comprehensive enough to allow all the changes to take place.