Is Total Quality Management Enough For Competitive Advantage?
Realities in Organizations Implementing Change Initiatives:
with Examples from the United States and the Developing World

by
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بسم الله الرحمن الرحيم

Is Total Quality Management Enough For Competitive Advantage?

Realities of Implementing Change Initiatives in Organizations:

With Examples from the United States and the Developing World

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It is hard to include everyone that contributed to this, but to all of those that gave me ideas, and helped me in preparing this dissertation - and there are many - I say thank you very much.

Finally, to the reader of this dissertation, although it may have shortcomings and areas that could be improved, I hope that it will provide some ideas that will contribute to your learning. I believe that our souls die once we stop learning. Enjoy!

Abstract

"And say (unto them): Act! Allah will behold your actions, and (so will) His messenger and the believers." (Qur'an IX:105)

"The goal is to try to imagine a future that is plausible – the future that you can create." (Gary Hamel - 1997)

Throughout the different MBA modules, I thought a lot about the factors that give companies a competitive advantage. Since TQM was presented as one of the theories that lead to competitive advantage, I wanted to further investigate the validity of such a proposal. This dissertation presents the results of such investigation.

The aim of this dissertation is to intellectually evaluate the successes and failures of TQM efforts, drawing on examples in the United States and suggesting that contrary to what the consultants propagate:

1.   It is not a panacea for all problems in organisations and that it fits all types of organisations, and

2.   It is not the only way to give organisations a competitive advantage.

Presented in the dissertation is a discussion about realities in organisations when it comes to implementing major change initiatives. TQM's fit for the services sector is discussed with emphasis on customer satisfaction. Also covered are some limitations of TQM including empowerment, times of paradigm shifts, major process changes, and reward systems.

The dissertation reflects on the developing world with a concentration on Saudi Arabia and how to learn from the mistakes of previous implementations. The current economic situation of the Saudi industry is not favourable, therefore cost-cutting initiatives will be emphasised. Another dramatic impact would be Saudi Arabia's entry into the World Trade Organisation in the year 2000. What is key is a change initiative that fits the cultural readiness of Saudi organisations, rather than importing one developed in a different cultural context and taking it as is, unchallenged.

I give a recommendation to Saudi organisations that a full assessment is always needed of applicability of new change initiatives originating in the West to the Saudi cultural context. I conclude this dissertation with reflections on the lessons I learned.

Introduction

"We fail more often not because we fail to solve the problem we face, but because we fail to face the right problem." (Russell L. Ackoff)

TQM gurus and consultants market it as the best change initiative that provides organisations with a competitive advantage. They also say that it is a cure for all problems that companies face. This dissertation provides intellectual and factual data showing that this is not always the case. There are areas where TQM provides a needed change initiative along with others. In addition, once most companies treat improving their processes as a priority, TQM ceases to give a competitive advantage since it becomes a basic entry point into the competition.

The sources of data for this dissertation came from many books and articles published in the last 20 years about the subject. I tried to cover the subject by balancing my reading of both success and failure reasons and implementations. This has been a subject I have wanted to explore throughout the MBA program, so part of my research, during the different modules of the program, have been on my mind. In addition to this, my experience in Information Technology, and my visits to the different companies that implemented TQM, in addition to my company's implementation, helped a lot. One of the greatest resources for the research of this dissertation has been the Internet. I spent long hours investigating the different areas of the subject through this amazing medium which helped minimise long trips to different libraries.

This dissertation is divided into six chapters, and a number of appendices. Chapter 1 gives an overview of TQM theory including its various definitions, principles, and evolution. I move on to discuss the differences between the manufacturing and services industries. The chapter finishes with an overall critique of TQM theory when it comes to implementation. The critique includes some of the major components of TQM: empowerment, teamwork, customer satisfaction, continuous improvement, and trust.

In Chapter 2, I give examples from the Saudi industry where TQM has been tried and the results that have been realised. I suggest that management, especially in the developing countries, should not take management ideas that are generated elsewhere as a given, and a best fit for their environment.

I move on to Chapter 3, where I present examples of TQM implementations in Western organisations. The examples include both where TQM was a success and where it was a failure. In Chapter 4, I discuss the areas in organisations where TQM is applicable, and other areas where it is not, contrasting the gurus views that it is applicable everywhere. Chapter 5 talks about parts of TQM that still follow the command and control model of Taylor, where others follow the systems approach. I then cover the future of TQM and its best fit in the 21st century organisation. I then finish with the conclusions, including lessons learned from the dissertation and future research areas.

I hope you find this dissertation as interesting and useful as I found researching and writing about the subject.

Chapter 1. A Critical Overview of TQM Theory

"God loves that when any of you does anything, he should do it in the best way." (Prophet Mohammed PBUH)

"The U.S. quality movement faces a new set of challenges. We need to overcome the confusion of terms and apparently competing approaches (TQM, ISO 9000, reengineering)." (Malcolm Baldrige Award – 1995)

The main philosophy of TQM is prevention rather than eliminating problems after they happen. Total Quality Management is a way of doing business that creates an environment that responds quickly to clients' changing requirements. In TQM, all members of an organisation need to understand their value and role, both as customers and as suppliers to every customer and supplier with whom they interact, inside and outside the organisation. Work regarding quality improvement is continuing. TQM focuses on continuous improvement of processes in order to improve every facet of an organisation. "Each process, whether it is operational, administrative, interdepartmental, or interpersonal, is continually refined and improved" (Bates, 1993). Since TQM focuses on improving the process, output from these processes usually meet or exceed a client's expectations. This differs from quality control, which depends on inspecting for mistakes and defects at the end of the process rather than building quality into the process during design and implementation. Thus, TQM is process-focused rather than outcome-focused as (AbulHassan, 1996) outlines. Dean and Evans (1994) say that "Total quality - a

comprehensive, organisation-wide effort to improve the quality of products and services - applies not only to large manufacturers such as Xerox. All organisations - large and small, manufacturing and service, profit and not-for-profit - can benefit from applying the principles of total quality."

The application of these concepts to service industries is resulting in new concepts based on Philip Kotler's marketing approach and a strong customer focus. Deming, Juran, and Crosby, who initiated the TQM process, share a common theme of participatory management. Management participation and attitude, professional quality management, employee participation, and recognition reflect a philosophy making internal and external customer satisfaction as the organisation's primary goal. (AbulHassan, 1996)

1.1 What Does TQM Mean?

Peter Senge quoted in Gibson (Eds. -1997) mentions three major driving forces in organisations. These are the great advancement in technology, globalisation, and the increasing complexity and interdependence. These already have dramatic impact on the way we live as we approach the 21st century. For paradigms to have lasting effect, they have to address these forces. A major paradigm in the last quarter of the 20th century has been the impact of TQM on organisations. TQM means different things to different people. What one guru considers part of TQM, the next guru disagrees. Over the past six weeks, I have read tens of articles talking about its success in organisations that implemented it; and more of places where it failed. TQM has

moved from being what some believed to be the only way for competitive advantage in the early 1980s to what others call fashion and fad at the end of the 1990s. University professors, like Flood (1993), Reshef (1997), and Anderson et al. (1994), feel that part of the confusion has been its lack of enough academic theory. Watson et al. (1995) say it is "proceeding purely on the basis of success stories, and a hodgepodge of methods, exhortations, and rhetoric." A lot of managers attribute scepticism about TQM to the length of implementation.

One question is always asked: Is there an **agreeable definition** of the term **TQM**. The answer is a resounding **NO**. Flood (1993) discusses at length that the confusion created within TQM is its lack of enough theory behind it. In reality, it is one of the few management thoughts that did not generate from a university in the West, and then the implementation took place in the industry. This has been a thought developed through implementation, first in Japan, then in the West, then moved to universities for more thought, articulation, and research.

Here are some definitions by the quality gurus, taken from Flood (1993).

- A predictable degree of uniformity and dependability, at low cost and suited the market. - Deming

- Fitness for use. - Juran

- The minimum loss imparted by the product to society from the time the product is shipped. - Taguchi

- In its essence a way of managing the organisation. - Feigenbaum

- Correcting and preventing loss, not living with loss. - Hoshin

- Conformance to requirements. - Crosby

- Quality means meeting customers' (agreed) requirements, formal and informal, at lower cost, first time, every time. - Flood

The development of TQM can be traced to several consultants including Deming, Juran and Crosby. TQM is a process and strategy that in certain situations can improve an organisation's effectiveness and efficiency. TQM places responsibility for quality problems with management rather than on the workers. A principal concept of TQM is the management of process variation, which seeks to identify special and common needs. The objective of TQM is the continual improvement of processes, achieved through a shift in focus from outcomes (or products) to the processes that produce them. TQM achieves its objective through data collection and analysis, flow charts, cause and effect diagrams, and other tools, which are used to understand and improve processes.

1.2 The Evolution of the TQM Theory

During most of the 20th century, organisations used a style of management that was based on the work of Frederick W. Taylor. In his system, engineers determined the best way to do a job and managers tried to convince

employees with a carrot or a stick to do the job the way the engineers had set it up. This approach produced a moderately high quality at a relatively high cost.

Taylor's application of science to complex human endeavours was built upon by Walter A. Shewhart, a statistician who developed work sampling and control charts that attracted the interest of another statistician, Edwards Deming. Joseph M. Juran, an investigator at the Hawthorne Works experiments, like Deming, drew from Shewhart's work and recognised that system problems could be addressed through three fundamental managerial processes (planning, control and improvement). The majority of researchers agree that Total Quality Management has it roots in the application of statistical process control to manufacturing prior to and during World War II. During the war, statisticians participated in the war effort by applying statistical quality control to the mass production of weapons and related systems. After the war, however, due to the ever-increasing consumer demand for more goods and the seemingly unlimited supply of raw materials and labour, the United States did not apply the techniques learned to other industries. It was not until the early eighties, when U.S. industries began to realise that they were being overtaken, in many fields, by their Japanese counterparts, that people began to take notice of statistical process control and Total Quality Management. The following chart depicts the evolving quality movement before the birth of TQM. (AbulHassan, 1996). It shows the stages the quality movement went through, adopted from Muhtasseb (1998).

Quality		
Inspection	**Control**	**Assurance**
"Salvaging, sorting, instating corrective actions, identifying sources of non-conformance and dealing with them" (Flood, 1994. P.10)	"Relating to inspection, detection and correction which is someone inspects the work of another and reports accordingly". (TQM Manual 1995. P. 26)	Employees working in manufacturing should assure quality production of products

According to the American Society for Quality, Total Quality Management (TQM) is a term initially coined by the Naval Air Systems Command to describe its Japanese-style management approach to quality improvement. Since then, TQM has taken on many meanings. Simply put, TQM is a management approach to long-term success through customer satisfaction. TQM is based on the participation of all members of an organisation in improving processes, products, services, and the culture they work in. TQM benefits all organisation members and society. The methods for implementing this approach are found in the teachings of such quality leaders as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa, and J. M. Juran.

Total Quality Management (TQM) is a participative management style that stresses total staff commitment to "customer" satisfaction. It is a holistic approach to managing complex organisations and replaces top-down management with decentralised customer-driven decision making. Total Quality Management is an integrated management system for creating and implementing a continuous improvement process – eventually producing

results that exceed customer expectations. It is based on the assumption that 90 percent of problems are a result of process, not employees.

A widely known element of TQM is W. Edwards Deming's Plan-Do-Study-Act (PDSA) problem-solving cycle, which according to Marta Mooney, has become the cornerstone of the TQM movement. Mooney asserts that Deming's formula is "firmly grounded in proven management principles that trace their roots to Frederick Taylor." The following figure depicts the PDSA model, originally called PDCA by Shewhart.

11. **Establish new procedures and policies** 12. **Standardize change** 13. **Manage change**	**ACT PLAN** **CHECK DO**	1. **Select process** 2. **Create purpose statement** 3. **Define the process** 4. **Gather data** 5. **Chart data** 6. **Analyze data**
9. **Measure and verify performance** 10. **Validate benefit**		7. **Develop and approve plan** 8. **Implement pilot program**
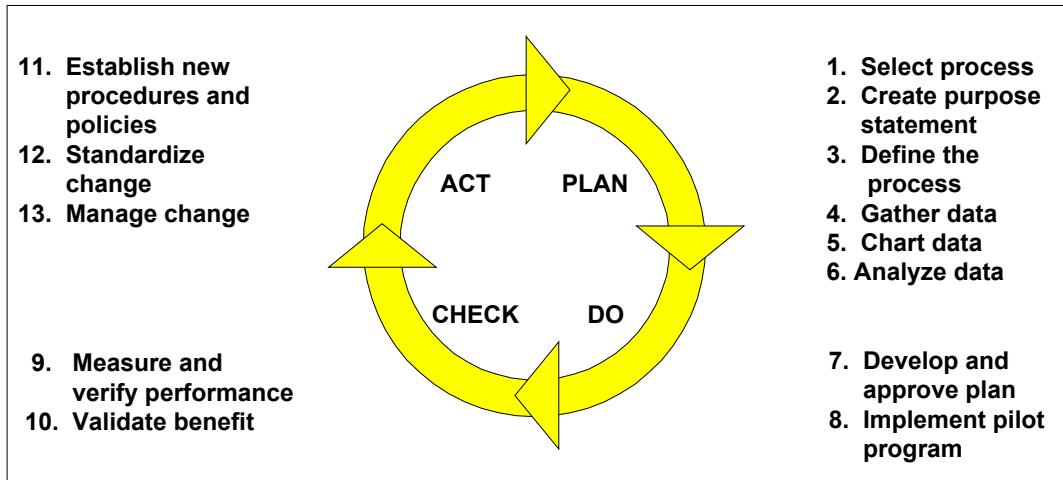
Whereas SPC is a precise set of quality improvement techniques, TQM extends quality improvement methods to all functions and all management levels; TQM is a company-wide philosophy of quality improvement. This philosophy contends that the firm's primary goal is to better meet customer requirements by improving the quality of products and processes. Because of

its importance to the TQM theory, I will now briefly discuss process variation before covering, in some detail, the main principles of TQM.

Process Variation

Continuous improvement is built on the goal of first developing a process that is reliable. A reliable process is one that produces the desired output each time without variation. Please see the following figure.

Daily defect percentages: with computed limits

Once this goal has been met, the next goal is to redesign the process to produce output that is even better able to meet customer requirements. To meet the second goal, management should recognise that variations in production or quality within manufacturing or service processes can be viewed as "special cause" variations. These are best removed by team members operating the process. Attention then shifts to "common cause" variations, which require management action to change some inherent features of the process.

Uncontrolled variation leads to low productivity, poor quality, and increased need for capital equipment to obtain high rates of production. If management

is to control the variation, there is no escape from learning how to use statistics. Furthermore, if the co-operation of workers is sought, they too must learn the language of statistics. The gist is, management should not take the system as given, trying to make the most out of it as it is. Rather, managers should make any effort to improve the system with the resources at hand.

1.3 Key Principles of TQM

Since, as we mentioned, there is no agreed definition of TQM, principles will expectedly vary. One view represented by Zeitz, et. al. (1997) combines all the principles that the quality gurus talk about into 13 principles. Please see the following 2 figures. The first is the areas they found applicable from a survey of about 900 respondents. The second figure is what is covered as part of quality by all the gurus.

Index Scores by Level of Total Quality Management (TQM) Program

Index	None	Beginning	Middle/ Advanced	Eta[a]	Probability[b]	Deviation From Linearity[c]
TQM						
Management support	2.93	3.11	3.40	.19	.000	ns
Employee suggestions	2.52	2.93	2.82	.19	.000	.003
Use of data	2.15	2.40	2.46	.14	.001	ns
Supplier relationships	3.09	3.42	3.65	.23	.000	ns
Supervision	3.01	3.28	3.48	.17	.000	ns
Improvement	2.90	2.95	3.22	.11	.004	ns
Customers	3.12	3.39	3.72	.24	.000	ns
Culture						
Communications	2.49	2.68	2.96	.18	.000	ns
Job challenge	3.28	3.49	3.70	.15	.000	ns
Social cohesion	3.15	3.17	3.25	.04	.523 (ns)	ns
Innovation	2.96	3.15	3.48	.20	.000	ns
Trust	3.13	3.15	3.28	.06	.253 (ns)	ns
Number[d]						
	579	134	120			

NOTE: *ns* means "not significant," that is, a probability greater than .05.

a. Eta is a measure of association between a continuous variable and a categorical (group) variable and can have a value of –01 to –1. It is similar to a Pearson correlation coefficient, indeed, nearly identical, when the interval is linear.
b. Probability that between group differences are present by chance. Significance level - .05.
c. The probability that a non-linear relationship occurred by chance.
d. Fifty three people did not respond to the question.

Total Quality Management Dimensions and Authors

Author	Quality Philosophy	Quality Planning	Management Leadership	Quality Supervision	Continuous Improvement	Use of Data	Quality Procedures	Equipment Adequacy	Supplier Relationship	Teamwork	Quality Training	Employee Suggestions	Customer Orientation
Anderson, Rungtusanatham, and Schroeder (1994)			X		X	X			X	X			X
Berry (1991)	X	X	X		X	X				X	X		X
Crosby (1979)	X	X	X	X	X	X				X			
Dean and Bowen (1986)		X	X		X	X	X		X	X	X		X
Deming (1986)	X	X	X	X	X	X	X		X	X	X	X	X
Grandzol (1996)		X	X		X		X			X	X		X
Hackman and Wageman (1995)	X	X	X		X	X	X	X	X	X	X		X
Hunt (1992)	X	X	X	X	X	X		X	X	X	X		
Imai (1996)					X	X		X	X	X		X	X
Juran and Gryna (1988)	X	X	X		X	X	X	X	X	X	X		X
Juran (1995)		X	X		X	X	X			X	X	X	X
Lawler, Mohrman and Ledford (1995)		X				X	X		X	X			X
Saraph, Benson and Schroeder (1989)	X		X			X	X	X	X		X		
Scholtes (1988)	X				X	X				X	X		X

The following model contains the key principles extracted from Total Quality Engineering, Inc.

TQM Model
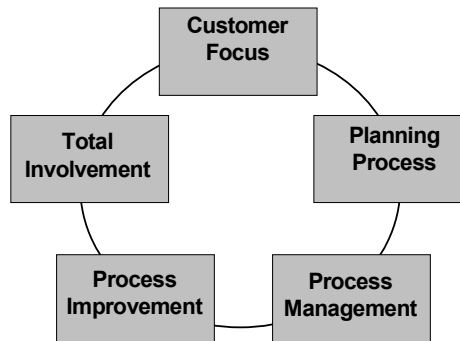
1. Customer Focus: The first key element of TQM is Customer Focus. World-class companies have developed processes that identify today's customer needs and try to anticipate customer needs in the future. In addition, they quantify their competitive situation with respect to satisfying customer needs. One method to gain a better understanding of a company's customers is by conducting a customer satisfaction survey. After the survey, summary reports need to be created that can be used to gain an "imaginative" understanding of customer needs. There are two sets of customers - external and internal. The external customer is the end user of a product or service. The internal customer is the person or work unit that receives the product or the service of another within the same company. The notion of internal customers lends relevance to each employee's job and is absolutely critical to a quality transformation. Internal customers, unlike employees, are not taken for granted. They

should be won over into a long-term collaborative relationship with a supplier.

2. Planning Process: The second element of TQM is the Planning Process. At a strategic level, failure of management to plan for the future and to foresee problems has brought about waste of manpower, materials, and machine-time, all of which raise the manufacturer's cost and price that purchaser must pay. Business planning translates customer needs into action that is essential for success. World-class companies have mature planning processes that clearly identify key success factors and deploy them throughout the organisation. Hoshin Kanri has been demonstrated to be a planning best practice. There are Handbooks available to guide in the planning process. Also, available software allows the experienced Hoshin practitioner to automate the planning process and reduce the amount of required paperwork.

3. Process Management & Improvement: The third and fourth elements of TQM are Process Management and Process Improvement. World-class companies manage their core processes to consistently deliver high quality products and services, at a price the customer is willing to pay, delivered when the customer wants it, and at a cost that allows the company to remain profitable. Many techniques are employed, but the concepts of Plan-Do-Study-Act (PDSA), Statistical Process Control (SPC), and Design of Experiments (DOE) are frequently used. A key factor in process improvement is to reduce functional divisions and emotional pitfalls that set barriers to synergies. As Deming states, Management