PROJECT QUALITY MANAGEMENT

THE IMPACT OF ORGANIZATION READINESS & ITS STRUCTURE IN TQM IMPLEMENTATION

Term paper (CEM 515)

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Impact of Organization Set-up in TQM

INTRODUCTION:

TQM implementation leads to Nee Administrative procedures & Policies that call for New Organizational set-up.

Paper Identifies interestingly, Time difference in making changes to administrative system versus the Changes to products and process (technical systems).

Technical changes are easy to make compared to administrative changes.

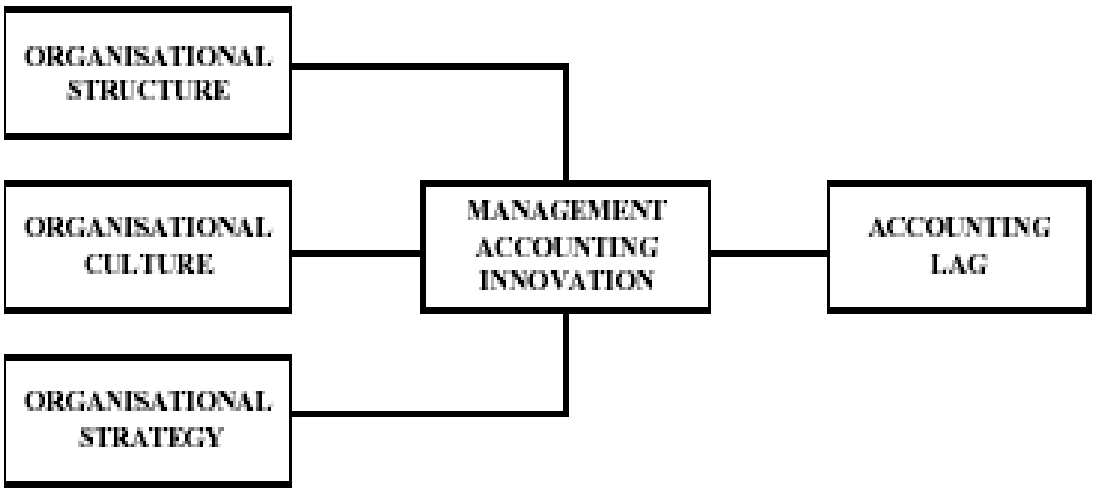
Recognition of the benefits to firms in minimizing implementation time explains four main reasons associated:

- the lack of adequate role models,
- the prevalence of computer-based accounting systems,
- the emphasis on financial accounting, and
- the low priority attributed by senior management to relevant management accounting systems.

Impact of Organization Set-up in TQM

INTRODUCTION:

A number of studies (Evan and Black, 1967; Rogers and Shoemaker, 1971; Kaplan, 1986; Bruns and Kaplan, 1987; Dixon et al., 1990 and Innes and Mitchell, 1990 among others) have looked at factors influencing the rate of adoption of technical and administrative innovations. They suggest that issues concerning organisational structure, organisational strategy and organisational culture will impact on the readiness of the firm to introduce change, and that situational factors will dictate the success of any implementation. These areas provide the framework for the conduct of this study, and are combined in Figure 1.



Impact of Organization Set-up in TQM

ORANIZATION STRUCTURE:

Various theories of organisational innovation have emerged based on the models of Burns and Stalker (1961), which distinguish between 'mechanistic' (where rules and formal procedures predominate) and 'organic' (where judgement is paramount) organisations. Damanpour (1991), among others, provides evidence to suggest that organisational structure is an influence on the successful adoption and implementation of innovation. He suggests that the initiation of innovations is easier in 'organic' organisations, but that their implementation would be facilitated by a 'mechanistic' organisation. Empirical support for this relationship is provided by Gosselin (1997) with respect to the adoption of activity analysis and then the implementation of activity based costing (ABC) in different types of organisation. Following this argument, we might expect that it is easier to initiate 'continuous improvement' programmes in 'organic' enterprises, but that total quality management (TQM) implementations would be favoured by 'mechanistic' organisations.

Impact of Organization Set-up in TQM

Three Major Dimensions of organizational structure which distinguishes "Organic" and "Mechanistic" Structures are shown below:

- centralisation - measured by the concentration of decision-making authority;
- vertical differentiation - measured by the number of hierarchical levels below CEO;
- formalisation - measured by the degree of standardisation of the jobs within an organisation.

"Organic" structures are
less
Standardized,
Vertically differentiated
Centralized

TQM implementation would be favored by Mechanistic Organization (Rules/Formal Procedures Based)

Impact of Organization Set-up in TQM

Organization Strategy:

Kaplan (1986) suggests accounting lag will be influenced by contextual factors associated with organisational strategy as well as organisational structure. Gosselin (1997) and Bjornenak (1997) both identify strategy as an important variable in empirical studies targeting accounting innovation and the diffusion process.

Gosselin suggests that innovativeness in managerial accounting systems is influenced by both propensity to innovate and implementation capability. He adopts a typology based on Miles and Snow (1978, 1994) which explores the capacity to innovate, based on the dominance of one of three characteristics:

- prospectors - dynamic; seeking market opportunities; capable of meeting consumer needs with new product developments; heavy investors in R and D.
- defenders - high volume, low diversity producers; emphasis on efficiency rather than innovation; operations within a narrow product/market domain.
- analysers - combining characteristics of both of the above extreme groups.

Impact of Organization Set-up in TQM

Prospectors entrepreneur grouping which would promote to the pursuit of innovation and include the following characteristics:

- emphasis on innovative aspects of firm activity, with a flexible response to market opportunities;
- emphasis on design and brand image and frequent change of product to offer a unique range;
- the promotion of a team-based approach to new product development, which embraces employee empowerment and delegated responsibility;
- the avoidance of hierarchical bureaucracies and rigid chains of command.

Implementation is easier for Prospectors. This is because they have the structures to facilitate diversification and numerous changes.

Impact of Organization Set-up in TQM

Organization Culture:

Becker (1993) and Westbrook (1993) suggest that wholesale cultural change is necessary before the TQM philosophy can be successfully adopted. Chang and Wiebe (1996) recognise the importance of organisational culture in TQM implementations, suggesting that successful adoption will be determined by a culture conducive to the acceptance of TQM. This culture might be expected to include:

- a leadership style associated with the clear communication of goals and strategies (Ezzamel and Hart, 1987).
- committed top management with congruent strategies (Bruns and Kaplan, 1987).
- incentives aligned with program objectives (Shank and Govindarajan, 1993).
- congruent reporting systems and organisational structures (Waytens and Bruggeman, 1994).

Impact of Organization Set-up in TQM

Each of these three processes has implications for the implementation and the implications are explained below:

1. Education and training is necessary in order that the logic and validity of any new approach is accepted, and to provide examples of how organisations have benefited from the new approaches. In this respect we might anticipate that:
   - education and training will reduce accounting lag;
   - the fear of change would otherwise increase the incidence of accounting lag, and must therefore be alleviated in the training programme, and
   - acceptance of the credibility of TQM should reduce the incidence of accounting lag.
2. Sponsorship of the change process, so that key individuals within the organisation are willing to commit to its implementation, is essential to its success. We might anticipate that:
   - the demonstration of management's understanding of, and commitment to, the change process will reduce the incidence of accounting lag.
3. Alignment of incentives, so that the systems and structures in place facilitate, reward and reinforce effective change. Empowerment, delayering, the provision of timely and relevant information and the availability of financial and non-financial rewards for successful implementation, should all have a positive impact.

Impact of Organization Set-up in TQM

3. RESEARCH METHOD

The focus of the study is on one particular management innovation (TQM) and the consequent response in changes to the corresponding accounting systems. Six firms were selected for the study, representing five industrial sectors. All of the firms were known to have implemented TQM, based on their annual report or internal management reports. The study sites were all located in metropolitan South Australia, so that the survey outcomes may lack external validity. At each site three members of senior personnel were targeted for interview: the management accountant (MA), the quality assurance manager (QA) and the operations manager (OM).

For each of the eighteen subjects, a semi-structured interview was conducted in order to give a balanced view of responses to accounting lag from the perspective of differing disciplines and responsibilities. The interviews were normally of sixty to ninety minutes duration, and copious notes were taken during the interview to avoid the potentially intrusive presence of a tape recorder. Reference to the questions used in previous studies of accounting lag, and to the framework developed in Section 2 generated questions to address the following concerns:

1. Organisational Structure
    - ownership structure and parentage
    - complexity of operations (number of locations)
    - size (number of employees)
    - market orientation (% overseas customers)

2. Organisational Culture

- leadership: management style and commitment
- motivation for change
- teamworking and empowerment
- incentives
- education and training

The questions on organisational structure are mainly contextual, and allowed the development of Figure 2; the questions on organisational culture provide the focus for this study by identifying those factors which appear to increase or reduce the incidence of accounting lag.

COMPANY	A	B	C	D	E	F
INDUSTRY	Building Materials	Automotive Components	Food Manufacture	Automotive Components	Air-Conditioning	Irrigation
NO. OF DOMESTIC SITES	3	1	4	1	1	1
HEAD OFFICE LOCATION	Adelaide	Overseas (UK)	Interstate (Sydney)	Adelaide	Adelaide	Overseas (UK)
OWNERSHIP STRUCTURE	Public	Public	Public	Private	Family Trust	Public
NO. OF EMPLOYEES AT TARGET SITE	180	700	350	480	400	300
LOCAL DOMESTIC MARKET AS % OF TOTAL	35	100	65	25	35	70

Figure 2: Characteristics of Sample Companies

Impact of Organization Set-up in TQM

4. RESULTS

The results of the interviews are summarised in Figure 3. The identities of the companies are concealed for purposes of confidentiality, so the organisations are denoted by the symbols A to F, corresponding to those used in Figure 2. A '+' sign indicates a factor associated with increases in accounting lag; a '-' sign indicates a perceived reduction in accounting lag.

COMPANY	A	B	C	D	E	F
EDUCATION						
Education and Training	-	-	-	-	-	
Fear of change	+	+	+	+	+	+
Credibility of TQM		-	-	-	-	-
Information overload	+	+		+		+
SPONSORSHIP						
Management understanding/commitment		-		-	-	-
Previously successful change implementation			-			-
Direct input from customers	-	-	-	-	-	-
ALIGNMENT						
Financial performance : successful	+			+		+
: vulnerable		-	-		-	
Participation of workforce	+			-		+
Perceived employment threats	+				+	
Short term focus	+	+	+	+	+	

Figure 3: Impact on Accounting Lag

Impact of Organization Set-up in TQM

Discussion:

There is a consistency of response across the samples companies which suggested that management commitment, strong leadership, education and training programs and customer focus will all reduce the implementation time.

Fear of changes increases the Implementation time.

A clear relationship appeared in the influence of financial performance of the company on the implementation time.

3 companies, subject to financial distress, vulnerability and survival threats as strong motivation to introduce implementation quickly reducing the time for the changes.

In case of companies well supported financially, implementation time increased because there was no urgency to respond for the changes.

Organizational culture does appear to have a significant impact. A wide study id justified to investigate further the influence of size, industrial sector and geography differences on its influences.

Organic Structure and Organizational Strategy have both been identified in this paper as providing further potentially important explanatory variable influencing the incidence of accounting lag and implementation time. Their impact shall be further examined in the future reach studies.

The Next Study is about Organization Readiness:

Assessment of Organization Readiness for TQM Implementation

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Assessment of Organization Readiness:

Abstract

Since about four years ago, total quality management (TQM) has been informally introduced into our integrated healthcare and medical education system. With the aim of getting feedback/ learning from the experiences of the universities/schools of medical sciences in setting the ground for TQM implementation, an assessment was done. The survey results show that out of 31 universities/ schools of medical sciences, 15(48%) had 50 to 59% readiness, 8 (26%) 60 to 70%, and the remaining 8 (26%) more than 70% readiness. Another finding was that, there was a discrepancy between top management teams' understanding of TQM and their actual actions in taking steps regarding its implementation. In conclusion, although the universities/ schools of medical sciences are taking steps toward setting the stage for TQM implementation, each one with its own pace, but the top management team must take more active role than the past in preparation for and implementation of TQM.

Keywords: *TQM, Organization readiness, Universities/ Schools of medical sciences, Iran*

Introduction

Islamic Republic of Iran's healthcare system is completely integrated into its medical education system. Every university/school of medical sciences (USMS) is responsible for providing both education and healthcare services, and each university/school of medical sciences is governed by a management team of 5 to 8 peoples. Since about four years ago, total quality management (TQM) has been informally introduced into the Islamic Republic of Iran's healthcare system. The long term aim was to provide the necessary conditions for implementing TQM. For this end, a national committee for quality improvement (NCQI) was established. The NCQI was supposed to provide support, training and advice regarding quality improvement initiatives. It is important to say that, although the NCQI has prepared a framework for implementation and necessary training courses and materials, but a "blueprint/roadmap" for implementation was not developed, nor a "prescriptive/compulsory" way of doing the task was imposed. NCQI has acted as a trigger of change and the universities/ schools of medical sciences were free to adopt or not adopt the TQM. In addition, they were totally independent in planning for their own quality improvement efforts, even without any input from NCQI.

Clearly, different USMS, have started their journey with different understanding of TQM philosophy, have chosen different ways for moving towards it, and have moved forward with their own pace. Nonetheless, they certainly have more or less, benefited from the framework provided by the NCQI.

According to the implementation phases proposed by NCQI (Appendix- A), the first two phases, i.e. awareness and knowledge & ex-

Assessment of Organization Readiness:

Introduction Continued.

perience, were designed for making the USMS ready for implementing TQM. The expected outputs of these two phases were:
Comprehension of quality, quality Improvement and TQM.
Top management team commitment to TQM.
Creating an organizational culture consistent with values of TQM.
Achieving organizational readiness for implementing TQM.
Based on what was told, it is expected that the current picture of readiness for TQM implementation, will be different among different USMS$_s$. As a means of feedback/learning from what has happened, and as a driving force for the USMS$_s$, it was decided to assess the readiness of the USMS$_s$ for TQM imple- mentation.

Case Study:

Materials and Methods

This was a cross- sectional study. A questionnaire containing twenty questions (Appendix-B) was developed based on TQM principles, implementation frameworks and available models (1-9), piloted and distributed among the 34 USMS$_s$. Since the top management team is responsible for organizational readiness and providing leadership and role model for TQM implementation, so they were designated for filling the questionnaires.
Microsoft Excel was used for data entry and analysis. Mean score for each question and a total score for the whole questionnaire was calculated. The latter represents the percent of readiness of the each USMS for TQM implementation (Fig. 1 and 2).

Assessment of Organization Readiness:

Results of Case Study:

Results

Out of 244 questionnaires distributed to 34 USMS$_s$, 218 questionnaires were filled and returned with response rate of about 90%. A minimum of five questionnaires for each

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USMS was considered to be sufficient for analysis. Data for 31 of them were analyzed. Fig. 1 shows that fifteen (48%) of the USMS had 50 to 59 percent of readiness, eight (26%) 60 to 70 %, and the remaining eight (26%) more than 70%. Review of Fig. 2 shows that the four questions having the highest scores, are questions 8, 14, 4 and 3, respectively; and the four questions having the lowest scores are questions number 7, 6, 12 and 13, respectively (see Appendix-B).

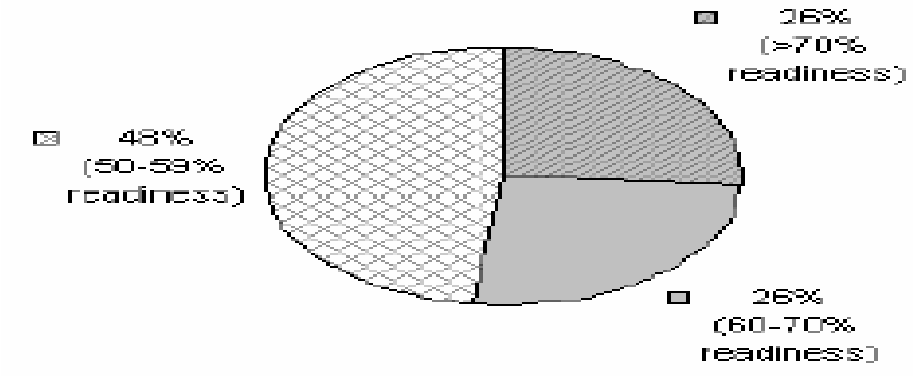

Fig. 1: Comparison of the percent of readiness of the universities/schools of medical sciences

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Assessment of Organization Readiness:

Twenty Questions Selected for Survey:

Assessment of Organizational Readiness for Total Quality Management (TQM) Implementation

For each of the 20 statements, rate your organization from 1 to 5 (strongly disagree to strongly agree), indicating how true the statement is about your organization. Please circle only one number in each column.

Question	Strongly disagree				Strongly agree
	1	2	3	4	5
I have received adequate training on TQM.					
I have invested a significant portion of my time in learning about TQM.					
I have clearly understood the span of changes brought with TQM.					
I believe that TQM is applicable in our organization. *					
I have personally selected TQM and proposed its implementation in our organization.					
I have been actively involved in the introduction of TQM into the organization.					
TQM related issues are frequently discussed in the meetings of the board of directors of our organization.					
I am committed to the implementation of TQM.					
A supportive structure such as quality council/committee is coordinating quality improvement efforts in our organization.					
I am one of the members of the above-mentioned supportive structure.					
An organization-wide training program has been planned and is being implemented in this organization.					
There is a common language about concepts, principles and methods of TQM in our organization.					
For building readiness for TQM implementation, I have devoted necessary resources.					
Being customer-focused is promoted and emphasized by the top management team of our organization					
A culture supportive of TQM is being promoted in this organization.					
Our organization culture promotes total involvement of employees in quality improvement efforts.					
Cross-functional teamwork is highly valued in this organization.					
Process improvement is widely practiced in this organization.					
Teams and individual employees are rewarded and recognized here, for their improvement efforts.					
There are obvious champions surfacing from all levels of the organization in supporting TQM.					

* Organization in this questionnaire refers to the university/school of medical sciences

Assessment of Organization Readiness:

Graphical Representation of Scores Assigned to the Questions:

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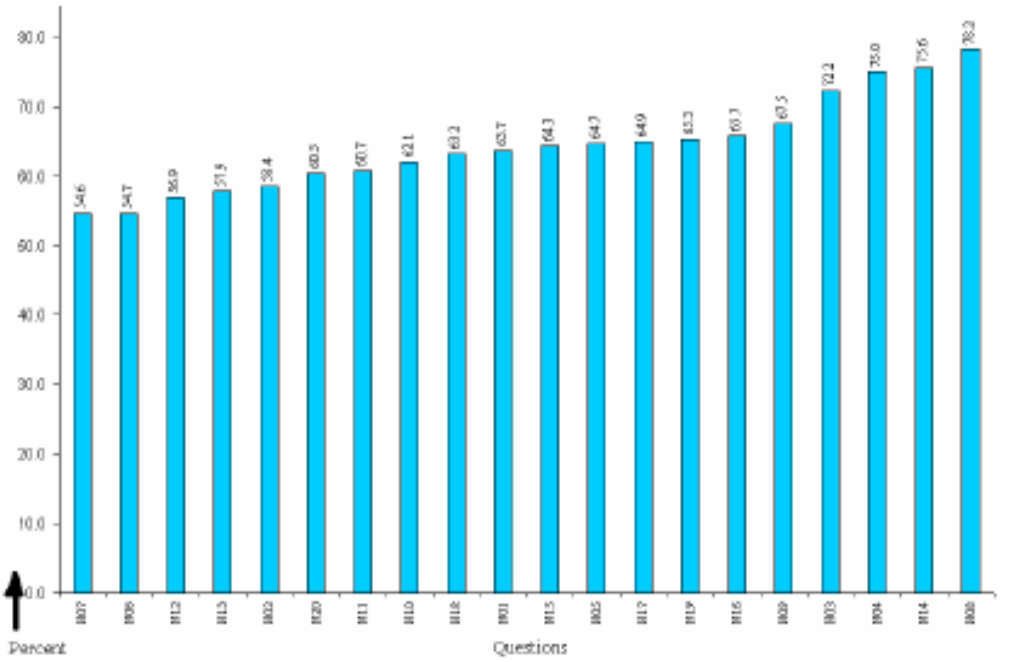

Fig. 2: Comparison of the score of each question in all of the universities/schools of medical sciences

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Top Four Highest Scores Assigned:

1. **Education and Training.**
2. **Awareness**
3. **Individual Commitment**
4. **Top Management Commitment.**

ASSESSMENT OF ORGANIZATION READINESS:

DISCUSSION

- **THE STUDY SHOWS**
- **THAT TOP MANAGEMENT TEAMS MUST TAKE MORE ACTIVE ROLE.**
- **MANGEMENT COMMITMENT AND CULTURAL CHANGINGS ARE MOST NECESSARY.**
- **UNDERSTANDING OF TQM, EDUCATION AND TRAINING IS MOST IMPACTING FACTORS.**

The Next Study is about Creating Lean Six Sigma Organization.

Creating a Lean Six Sigma Organization[1]

John Maleyeff & Edward D. Arnheiter

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[1] Published in *DFK Kvalitetsnyt* (Danish Society for Quality) Newsletter, April 2, 2001.

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Creating Lean Six Sigma Organization.

Introduction:

Currently, two of the most popular comprehensive management programs in industry are *Six Sigma* and *lean management*. In both programs, their effective implementation involves cultural changes in organizations, new approaches to production and to servicing customers, and a high degree of training and education of employees, from upper management to the shop floor. As such, both systems have come to encompass common features, such as an emphasis on customer satisfaction, high quality, and comprehensive employee training and empowerment.

Creating Lean Six Sigma Organization.

Overview of Six Sigma

The roots of *Six Sigma* can be traced to two primary sources: total quality management (TQM) and the six-sigma statistical metric originating at Motorola Corporation. From TQM, Six Sigma preserved the concept that everyone in an organization is responsible for the quality of goods and services produced by the organization. Other components of Six Sigma that can be traced to TQM include the focus on customer satisfaction when making management decisions, and a significant investment in education and training in statistics, root cause analysis, and other problem solving methodologies.

Creating Lean Six Sigma Organization.

Overview of Six Sigma Continues:

With Six Sigma, the value of an organization's output includes not just quality, but availability, reliability, delivery performance, and after-market service. Hence, the six-sigma metric is applied in a broad fashion, striving for near perfect performance at the lowest level of activity. In addition, Six Sigma programs generally create a structure under which training of employees is formalized and supported to ensure its effectiveness. All employees involved in activities that impact customer satisfaction are trained in basic problem solving skills. Other employees are provided advanced training and required to act as mentors to others in support of quality improvement projects.

Creating Lean Six Sigma Organization.

Overview of Lean Management

The concept of lean management can be traced to the Toyota production system, which has become a model of excellence for advocates of lean management (Womack and Jones, 1996). The goal of lean management is the elimination of waste, so that all activities along the value stream create value. The traditional production system is known as "batch-and-queue," which derived from economy of scale principles. Here, we encounter high production volumes, large batch sizes, and long non-value added queue times. Lean management emphasizes small batch sizes and, ultimately, *single-piece*

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flow, as well as a pull system of production control. For example, the Dell "direct sales model" quickly converts customer orders into finished personal computers ready for shipment (Sheridan, 1999).

Creating Lean Six Sigma Organization.

Integrating Lean Management & Six Sigma

Figure 1: Nature of Competitive Advantage

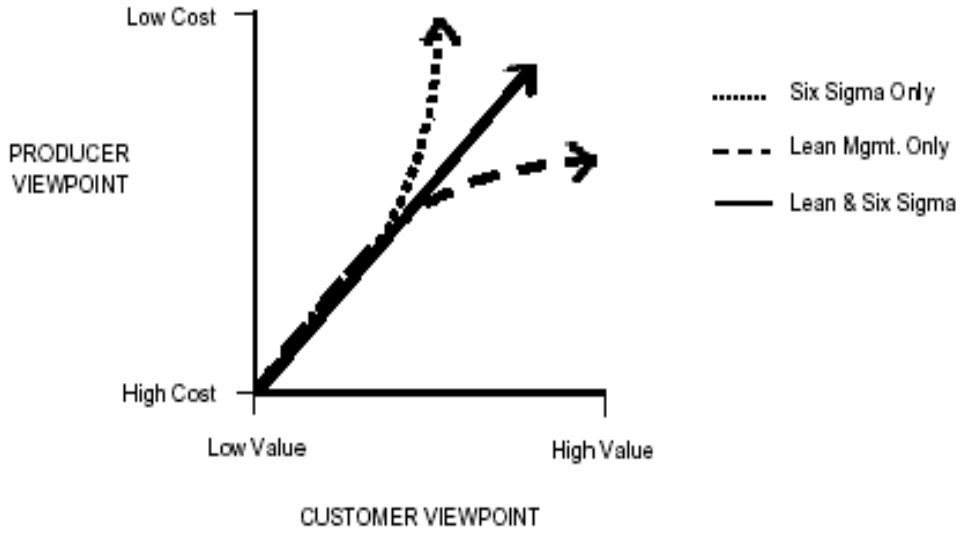

Figure 1 summarizes the nature of improvements that may occur in organizations that practice lean management or Six Sigma, and the corresponding improvements that an integrated program could offer. The horizontal axis represents the customer's perspective of value, including quality and delivery performance. The vertical axis represents the producer's cost to provide the product or service to the customer. Under either system,

Creating Lean Six Sigma Organization.

Integrating Lean Management & Six Sigma

improvements will be made, but these improvements will begin to level off at a certain point in time. With Six Sigma alone, the leveling off of improvements may be due to the emphasis on optimizing measurable quality and delivery metrics, but ignoring changes in the basic operating systems to remove wasteful activities. With lean management alone, the leveling off of improvements may be due to the emphasis on streamlining product flow, but doing so in a less than scientific manner relating to the use of data and statistical quality control methods.

Advantages of the Integration of Lean & Six Sigma Principles:

A lean, Six Sigma (LSS) organization would capitalize on the strengths of both lean management and Six Sigma. A LSS Organization would include the following three primary tenants of lean management:

1. It would incorporate an overriding philosophy that seeks to maximize the value-added content of all operations,
2. It would constantly evaluate all incentive systems in place to ensure that they result in global optimization instead of local optimization,
3. It would incorporate a management decision-making process that bases every decision on its relative impact on the customer.

Creating Lean Six Sigma Organization.

Advantages of the Integration of Lean & Six Sigma Principles:

A LSS Organization would include the following three primary tenants of Six Sigma:

1. It would stress data-driven methodologies in all decision making, so that changes are based on scientific rather than ad hoc studies,
2. It would promote methodologies that strive to minimize variation of quality characteristics, and
3. It would design and implement a company-wide and highly structured education and training regimen.

Discussion:

The performance of a business is determined by the complex interactions of people, materials, equipment, and resources in the context of the program that manages these interactions. It is fair to say that management theory regarding operating systems is still evolving. While both Six Sigma and lean management represent the state-of-the art, each system gives priority to certain facets of organizational performance. Therefore, in a highly competitive environment, the best components of both programs should be combined to form an effective LSS organization.

Impact of Organization Set-up in TQM Implementation:

Conclusions:

- **Impact on implementation process is understood related to Organizational Structure, Strategy, Culture and its readiness.**

- **To reduce the Implementation Time Importance of**

  "Top Management Commitment"
  "Education and Training"
  "Incentive Programs"
  Is well focused in all three studies.

- **Useful Case Studies have been included in the article for Organization Readiness as well as Organization Strategy to understand the details of impact on the implementation time.**

- **Recommendations are made to identify the Organizational Structure, Culture and Strategy that suits the faster implementation that could be adapted to similar type of industry.**

END