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A proposed model of TQM implementation in the Palestinian context

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ABSTRACT *This paper is based on an empirical study of TQM implementation in the Palestinian industrial context. The main focus of the study was to identify critical quality factors for effective TQM implementation and to understand how these critical quality factors are deployed and implemented by Palestinian organizations. The paper presents the outcomes from this research in the form of an implementation framework, constructed through the use of practical guidelines, the key steps of which have been validated and supported empirically.*

Introduction

Quality is an important consideration for executive thinking. The increased awareness of senior executives, who have recognized that quality is an important strategic issue is reflected as an important focus for all levels of the organization (Crosby, 1979; Oakland, 2000). This requires defining and implementing several factors (identified as quality factors in this research project). These quality factors include top management commitment and involvement, employee empowerment and culture. These factors are known by some writers as the soft aspects of management, while the hard aspects include factors such as improvement tools and techniques and systems (Wilkinson, 1992; Oakland, 1993, 2000). However, these quality factors for successful implementation of TQM cited in the literature are not formulated on the basis of empirical research (Black, 1993; Black & Porter, 1996). Various quality factors are identified by various writers based on their own experiences in working as consultants, managers or researchers (Thiagarajan *et al.*, 2001).

This reflects the gap in the literature. This gap is hardly surprising given that research and theory in TQM implementation are at a very early stage in the West (Dale *et al.*, 2001). According to Thiagarajan *et al.* (2001), while total quality management (TQM) in the West lacks theoretical basis, knowledge of TQM in developing economics is almost totally lacking. The scant attention given to research in the developed nations, confused by the acknowledged limitations of most of the research findings across national boundaries, has made any efforts to readily learn and transfer empirically sound knowledge to developing economies all the more difficult. This is evident as, to date, there are few empirical studies reported in the literature that have attempted to identify the essentials of TQM implementation (Garvin, 1983; Saraph *et al.*, 1989; Baker & Starbird, 1992; Boltes, 1992; Black, 1993; Badri *et al.*,

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1995; Motwani *et al.*, 1994; Tamimi & Gershon, 1995; Black & Porter, 1996; Flyn *et al.*, 1994; Ahire *et al.*, 1996; Thiagarajan, 1996; Thiagarajan *et al.*, 2001; Ali, 1997; Tamimi, 1998; Rao *et al.*, 1999; Zhang *et al.*, 2000). All but four (Motwani *et al.*, 1994; Ali, 1997; Badri *et al.*, 1995; Thiagarajan, 1996) are studies done in developed countries.

Problem definition

Lack of empirical research

The bulk of the total quality management literature is based on personal experiences and anecdotal evidence (Black & Porter, 1996; Rao *et al.*, 1999). The lack of empirical research can be attributed to the following reasons: the existing theoretical base of TQM to support research on total quality is not sufficient; TQM is a relatively recent philosophy outside Japan and the origin of TQM lies outside the academic world (Thiagarajan *et al.*, 2001).

Lack of empirically sound TQM implementation models

In a Japanese survey (Yui, 1995), 57 out of 138 respondents agreed that they do not understand what is required to introduce and implement TQM, even though they understood its concepts. This reflects the total quality paralysis described by Oakland (2000) and Kanji (1990), where organizations attempting to implement TQM are confused where to start. This is because they are overwhelmed by so many concepts, principles, models and prescriptions (see Juran, 1993; Deming, 1986; Oakland, 2000; Crosby, 1979).

Organizations' top management is questioning the lack of empirically sound models to assist in effective quality management. They recognize that currently available approaches to implementation are organizationally and politically naïve (Dean & Bowen, 1994). Therefore, a model development to explain effective quality management implementation by organizing, synthesizing, and empirically validating the various key quality factors should serve the needs of practitioners (Thiagarajan, 1996).

Lack of empirical research in the developing economies

The growing interest in quality has reached, due to globalization, several developing countries in the Middle East region (Ali, 1997). It is appropriate, therefore, for studies in TQM implementation to be conducted for the benefit of the managers in these developing countries, where the need is confounded by a dire lack of total quality management information (Thiagarajan *et al.*, 2001; Ali, 1997). Generally, there seems to be acknowledged limitations of the findings of some of the earlier studies in their applicability across national boundaries (Dawson, 1994; Rao *et al.*, 1999). Therefore, the findings of such systematic studies will generate a new way of thinking concerning total quality management in the various culture contexts.

This research addresses a major gap in the literature by empirically investigating TQM implementation in a developing country, namely, Palestine. There is a dearth of theories and generic models of TQM implementation that are empirically based and validated (Thiagarajan *et al.*, 2001).

Purpose of the study

The previous discussion suggests that expanding the current available knowledge of TQM implementation is a valid topic for research. This is important for creating knowledge for the benefits of developing economies' business organizations (Thiagarajan *et al.*, 2001).

The main purpose of this study was to construct a generic framework for TQM, implementation to assist Palestinian organizations to implement effectively their TQM initiatives. The intention is to provide non-prescriptive implementation guidelines. Constructing a framework for TQM implementation as a research topic can best be investigated by studying the experiences of organizations advanced in their use of TQM (Black, 1993; Black & Porter, 1996; Ahire *et al.*, 1996; Thiagarajan, 1996; Tamimi & Gershon, 1995; Tamimi, 1998; Thiagarajan *et al.*, 2001). The aim is to know what is essential to the success of these organizations' TQM initiatives. This is, therefore, the general approach adopted for this study and is essential in the construction of the generic framework.

This required the achievement of four specific objectives. The first objective was to identify the quality factors that are critical to effective implementation of TQM based on the up-to-date existing knowledge of implementation in the developed countries. This requires a thorough and in-depth review of the available literature. The second objective was to identify the quality factors that are critical for effective TQM implementation in Palestinian organizations. The effort involves Palestinian organizations that are advanced in their use of TQM agreeing on a set of quality factors based on their implementation experiences. The third objective was to understand how the critical, quality factors are deployed and implemented. The investigation involves identifying the tactics and techniques used by Palestinian organizations in implementing the quality factors. The final objective was to identify the critical issues in the pre-launch stage of TQM. This involves identifying the foundation elements for TQM implementation in the Palestinian organizations. Specifically, this required:

- Identifying the critical quality factors of successful implementation based on the experience of Palestinian organizations advanced in their use of TQM.
- Identifying the tactics and techniques used by those organizations in implementing the critical quality factors.
- Identifying the foundation elements for effective TQM implementation.

Methodology

There were three methods of data collection for this study—questionnaire survey, semi-structured interviews and open interviews. Different data analysis was used depending on the methodology and objectives of the research. An overview of data collection and analysis is presented.

Level 1. Questionnaire Survey

The aim of the survey was to identify quality factors that are perceived by Palestinian organizations to be critical to the success of their implementation of the quality initiative. The whole population (78 organizations) of ISO-9000 accredited organizations were targeted to obtain a large database of information.

The data analysis aimed to identify and interpret a majority consensus amongst respondents in their ratings of the quality factors. Statistical analysis of frequency distribution, computing the central tendency and measure of variability of response distributions were employed as the major statistical techniques.

Level 2. Case studies using semi-structured interviews

The primary effort in this level of investigation was to understand the process of TQM implementation. The investigation involves how the identified quality factors in the level 1 inquiry are addressed and implemented.

Using semi-structured interviews, respondents were asked to describe how the quality factors are implemented and deployed. A smaller number of companies were selected for this purpose. Cross-case comparative analysis of the results was used to identify the tactics and techniques of the quality factors implementation, and to identify the similarities and differences of tactics and techniques.

Level 3. Case studies using open interviews

The aim of the open interviews was to explore the critical stages each company went through from the early stages of deciding to implement TQM to when TQM was launched. A smaller number of companies were selected for this purpose.

Findings

The quantitative research involved gathering information from the total population of the Palestinian ISO 9000 certified organizations. The survey questionnaire aimed at identifying and stratifying the critical quality factors as perceived by respondents from various organizations of different size, maturity level of TQM implementation, and business category. The results of this survey questionnaire were analysed. The analysis revealed that 19 quality factors are perceived as critical and absolutely essential for the successful implementation of TQM. These factors were identified and stratified into three tiers of criticality, where nine of them are found fundamental to be addressed in the early stages of the implementation process (see the Appendix).

The qualitative research involved two levels of investigations. Using semi-structured interviews, more insights concerning the tactics and techniques to implement the critical quality factors were presented based on discussing the experiences of 18 case study organizations. The discussion identified the important prerequisites to successful implementation of the critical quality factors. These formed the important tactics and techniques to effective implementation of the critical quality factors.

The second level of qualitative research involved identifying the foundation elements of TQM implementation using the case study approach. The discussion of the finding of five case study companies revealed that, in the pre-launch of TQM implementation, the companies' top management realized the tangible benefits of TQM implementation, invested time and effort in training and education, demonstrated active commitment and involvement, and gained internal stakeholders (company-wide) commitment and involvement.

From these cases, the foundation elements of TQM implementation support addressing tier 1 critical quality factors as fundamental factors in the TQM model of implementation. These factors are:

- Top management commitment and involvement.
- Middle managers and employee commitment and involvement.
- Communication.
- Training and education.
- Quality infrastructure.
- Formal documented quality management system.

Development of the proposed TQM model

The knowledge of total quality management is still very limited. This means that it is improper and unscientific to provide a complex model for TQM implementation. Therefore,

a logical and simple model closely based on the empirical evidence derived from the analysis of the three levels of investigations is provided, including the major top management actions, the organizational activities and the guidelines for effective implementation.

Major top management actions

Major top management actions are the actual quality levers that top management need to perform and deploy to implement the critical quality factors and the foundation elements. Therefore, the findings of the survey questionnaire presented earlier comprise the fundamentals of the major top management actions.

These findings offer a practical, logical and simple framework that is based on arranging the critical factors from the most critical to the least critical in deriving the major top management actions of effective implementation.

The findings from the case studies presented earlier revealed that there are two main stages that require different major top management actions, namely, the pre-launch stage and the implementation stage. Therefore, the two-stage approach representing two categories of major top management actions is adopted whenever appropriate.

(1) *Pre-launch stage*. The major top management actions that must be taken pre-launch of the TQM programme. The foundation elements and some of the Tier 1 critical quality factors define the major management actions appropriate for this stage.
(2) *Implementation stage*. The major top management actions in the implementation process. The major top management actions needed in the implementation of TQM. This stage is defined by most critical quality factors stratified in Tiers 1, 2 and 3.

Organizational activities

These activities identify the tactics and techniques employed to perform the major top management actions. These activities are defined primarily by the findings of the semi-structured interviews.

Structure of the framework

The relationships between the critical quality factors require finding a constellation of underlying constructs to represent variables to provide a user-friendly structure of the framework (Black, 1993; Thiagarajan, 1996). The constructs are used by many writers and researchers (Kanji, 1990; Kano, 1993; Oakland, 1993, 2000; Black & Porter, 1996; Saraph *et al.*, 1989; Mann, 1992; Ahire *et al.*, 1996; Rao *et al.*, 1996, 1999; Zhang *et al.*, 2000; Flyn *et al.*, 1994) to identify central factors that an organization planning to implement TQM should consider.

Thiagarajan (1996) used judgemental processes grounded in the literature to group variables into four underlying factors. By doing this he followed the approach used by Mann (1992), who grouped variables into five underlying factors and accorded them recognizable labels, whereas other researchers used statistical procedures of factor analysis to explore and identify the constructs (Black, 1993; Ahire *et al.*, 1996; Rao *et al.*, 1999; Zhang, 2000; Tamimi, 1998).

A methodology of a judgemental process grounded in the literature to group the variables of this study to distil constructs that have empirical validity and practical value within the implementation framework is adopted.

Referring to the identified critical quality factors from the analysis of the survey questionnaire, four separate but interrelated constructs can be identified:

(1) Demonstrate top management commitment and involvement.
(2) Ensure employee commitment and involvement.
(3) Manage by customer-driven system and processes.
(4) Create continuous improvement culture.

The constructs represent what Palestinian organizations must do to delight the customer by consistently meeting customer requirements, and then achieve a reputation of excellence. This is supported by the findings of this study, as continuous customer satisfaction is a value that most Palestinian organizations strive for.

TQM must be truly organization-wide to be successful in achieving business efficiency and effectiveness. It must start at the top. The most senior directors and management must all demonstrate that they are serious about quality (Dayton, 2001; Buch & Rivers, 2002). This requires involving everyone in the organization in quality improvement. Therefore, management must enable all employees to participate in the preparation, implementation and evaluation of improvement activities (Pun, 2001; Lau & Idris, 2001; Leiter & Maslach, 2002).

This is important as middle management have a major role to play, since they must not only grasp the principles of TQM, but they must also go on to explain them to the people for whom they are responsible, and ensure that their commitment is communicated (Oakland, 2000; Thiagarajan & Zairi, 1997).

For an organization to be successful in the marketplace, each part of it must work properly together towards the same goals, recognizing that each person and each activity affects, and in turn is affected by, others (Oakland, 2000). This means focusing on business processes that add value to customer satisfaction (Feigenbaum, 2002; Zairi, 2000). The continuous improvement of existing products, services and processes is fundamental for continuous customer satisfaction (McAdam & Kelly, 2002).

The interrelationships between the various constructs are presented in Fig. 1. The figure reflects the soft-hard aspects of the model of TQM implementation.

A more detailed description of the constructs and the critical quality factors (the components of the constructs) is presented in Fig. 2.

Guidelines for TQM implementation

Construct 1. Demonstrate top management commitment and involvement

Top management must accept the responsibility for commitment to a quality policy that deals with the organization for quality and the satisfaction of customer needs. This commitment to quality and leadership must be demonstrated by developing and communicating the vision organization-wide. As evident from the findings from the in-depth interviews, in the pre-launch stage, commitment of top management is achieved when the rewards of implementing TQM are realized. That is, the tangible business and operating benefits of TQM must be realized by top management as a prerequisite for their serious commitment.

To manage the organization's quality journey, a quality council led by the General Manager is set-up and a full time quality related manager is hired to provide support for the quality council. Whenever needed, an external consultant can be appointed to assist in the implementation process.

Senior managers who are members of the quality council are responsible for developing

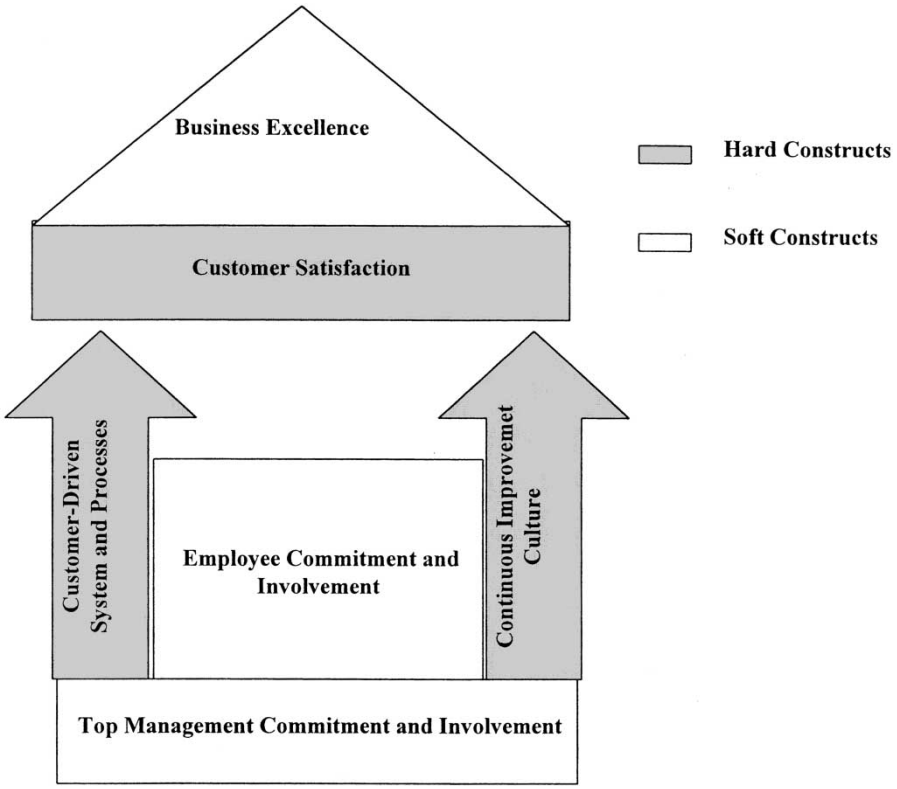

Figure 1. *Constructs of TQM implementation framework.*

a comprehensive policy based on clear vision and mission statements, including the quality goals deployed effectively at all levels of the organization. This unites the efforts of all employees and determines the corporate expectations. This comprehensive quality policy should be communicated effectively to ensure common understanding of the organization's expectations and direction to achieve organization-wide commitment.

At the departmental level, quality committees headed by the department heads are established to implement the quality policy to achieve the organization's goals. These committees have a direct reporting relationship with the quality council through committees' heads.

Implementation guidelines

Pre-launch stage

(1) Develop a clear belief in the benefits that TQM can bring in to the organization. This requires investing time and effort learning about TQM through:

- Reading about TQM.
- Attending training courses.
- Attending conferences.
- Consulting experts.
- Visiting other organizations for benchmarking purposes.

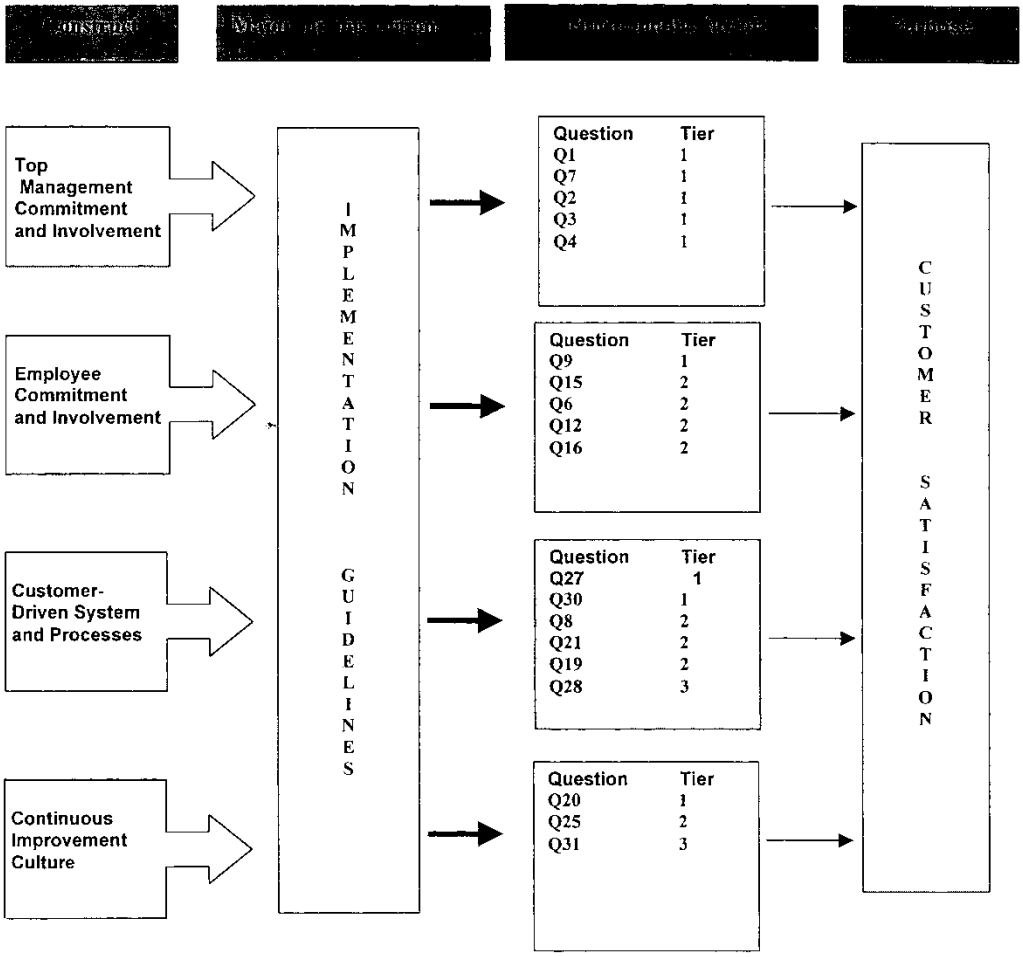

Figure 2. *Components of the TQM implementation framework.*

(2) Ensure consensus agreement of all senior managers. This involves all senior managers having belief in the tangible benefits that TQM can bring to the organization. This leads to gaining consensus agreement among senior managers concerning planning to implement TQM. This requires:

- All senior managers serve at the quality council as members.
- Attending training courses.
- Attending conferences.
- Reading about TQM.
- Visiting other organizations for benchmarking purposes.

The implementation stage

(1) Establish a quality council. The objectives of establishing the quality council are to:

- Provide strategic direction on TQM for the organization.
- Establish plans for TQM implementation.
- Review and revise quality plans for implementation.

Make sure that the council is headed by the general manager with all senior managers being members. Whenever possible, include some middle managers as members in the council.

(2) Recruit a quality-related manager to provide support in the planning and implementation of TQM.

(3) Demonstrate visibility of senior managers' commitment to quality and customer satisfaction. This requires:

- Serving at the quality council.
- Participating in developing a comprehensive quality policy.
- Attending training courses with staff.
- Delivering training courses to staff.
- Conducting face-to-face regular meetings with staff.
- Communicating the vision and mission to staff.
- Conducting benchmarking visits to other organizations.
- Participating in celebrating successful quality achievements.
- Participating in social gatherings and events.
- Rewarding and recognizing team successes.
- Keeping regular contacts with customers.
- Reviewing quality issues at management meetings.
- Using quality techniques and tools in their daily activities.

(4) Communicate the mission statement consistently. Communicate the mission statement and the objectives defining the quality values, expectations and focus to all employees. An early implementation step must be the clear widespread communication of the mission. This requires:

- Demonstrating top management commitment and acceptance of the mission.
- Using face-to-face communication by conducting meetings with all employees. If not possible, meet with groups of 50–60 each time. If not possible, use a cascade approach.
- Conduct question/answer sessions with employees.
- Encourage open discussions.
- Reinforce face-to-face communication of the mission by other communication modes such as Posters.

(5) Develop a comprehensive quality policy and effective deployment of goals. Develop a quality policy that reflects the organization's mission, including corporate values, expectations and focus. This requires:

- Considering the various sources of information in developing the quality policy. This includes the information from customers, employees, suppliers, competitors, society and shareholders.
- Developing the mission into its critical success factors to coerce and move it forward. That is, to develop goals and the methods for achieving them.
- Defining the key performance indicators as being the quantifiable indicators of success.

- Defining targets associated with the key performance indicators.
- Ensuring that appropriate data are collected and recorded.
- Monitoring progress towards achieving the critical success factors (key performance indicators and targets) on a regular basis.
- Reviewing and modifying the key performance indicators and targets where appropriate.

For effective goal deployment, set goals and targets at individual and process level. Empower employees by participating them in the process whenever possible; provide appropriate training and necessary resources for effective implementation.

(6) Establish departmental quality committees. Establish quality committees at departmental or divisional levels to implement and manage the quality processes at these levels. The department/division head, who reports directly to the quality council, heads these committees.

Construct 2. Ensure employee commitment and involvement

In order to ensure the commitment and involvement of everyone in the organization in the quality improvement, top management must enable all employees in the preparation, implementation and evaluation of improvement activities.

Practical assistance, training, recognition and participation should be given to ensure that all employees, in order to attain the quality goals of the organization, acquire the relevant knowledge and experience. The issue of employee commitment and involvement as a critical quality factor for successful TQM implementation is unanimously addressed by writers (see for example Zairi, 1999; Kanji, 1990, 1995, 1996, 1998; Oakland, 1993, 2000; Rao *et al.*, 1996, 1999; Zhang *et al.*, 2000; Mak, 2000; Sun, 2000; Dale *et al.*, 2001; Claver *et al.*, 2001; Buck & Rivers, 2002; McAdam & Kelly, 2002).

As employees become committed and involved and the entire workforce understands, and is committed to, the vision, values and quality goals of the organization, empowerment becomes a necessity. Employees need to be aware of the TQM concepts, trained to improve interactive skills, problem identification and solving skills, and technical skills. Employees need to be informed about the quality initiative and participate in the improvement activities and through top-down and bottom-up communication. Teamwork skills are needed to have employees work together, and a review of the reward and recognition schemes is another important factor to ensure and reinforce employee commitment and involvement.

Implementation guidelines

At the pre-launch stage

At this stage, as senior managers become committed and involved in preparing the plan for TQM implementation, they start to:

(1) point out the benefits of TQM for the organization in their meetings with middle managers and in their memos to them,
(2) nominate key middle managers to attend seminars, conferences and workshops addressing quality issues.

At the implementation stage

(1) Ensure that the entire workforce understands and is committed to the vision, values and quality goals of the organization. Communicate the visions, values and quality goals to all employees emphasizing the need for a management system that is based on total quality management. This requires:

- Gathering all employees to attend a face-to-face meeting to announce the need for the quality management system. If it is not possible to gather all employees, meet employees in groups of 50–60; if this is not possible, use the cascade approach.
- Gather all employees to attend a face-to-face meeting to communicate the vision, mission, values, expectations and the quality goals of the organization. This, of course, can be done in the same meeting to announce the need for the quality system. If it is not possible to meet with all employees, meet with employees in groups of 50–60; if this is not possible, use the cascade approach.
- Provide TQM awareness workshops on the concepts and philosophies of TQM.

(2) Provide training for employees in interactive skills. Manage the training programme to provide systematic training for employees to improve their communication skills, effective meeting skills and empowerment and leading skills.

(3) Keep employees informed and get their feedback. Establish top-down and bottom-up communication modes to keep employees informed (about the progress being made and successes of quality initiatives achieved by individuals and teams), and to get feedback (using employee survey, face-to-face meetings, workshops or suggestion schemes). This requires the use of a variety of communication modes emphasizing face-to-face communication.

- Briefings made by the general manager and senior managers.
- Face-to-face meetings.
- Question–answer sessions.
- Posters.
- In-house news bulletin.
- Training and workshops.
- Memos.
- Employee surveys.
- Suggestion schemes.

This might require establishing a committee to review the communication modes and strategies and accordingly make recommendations for improvements.

(4) Ensure middle management buy-in. Ensure that supervisors, unit heads and divisional managers assume active roles as facilitators of continuous improvement, coaches of new methods, mentors and leaders of empowered employees. Middle managers may see TQM as another burden without any benefits, and may perceive a vested interest in the status quo. This requires:

- increasing direct interaction between senior managers and middle managers to provide guidance and support, particularly in the early years of implementation,
- organizing benchmarking visits to other organizations to feel the benefits that TQM can bring to the organization,
- providing comprehensive training in the philosophy and concepts of teamwork

and the techniques and applications of statistical process control in order to assume new roles as facilitators of continuous improvement, coaches of new methods and mentors and leaders of empowered employees,
- participating, whenever possible, in the quality council as members,
- reinforcing the behaviours of middle managers needed for their new roles by rewards and recognition.

(5) Provide training for employees in problem identification and solving skills, quality improvement skills and other technical skills. Provide training in problem identification and solving skills, teamwork and decision making to foster continuous improvement. This requires the establishment of a systematic approach to quality training which ensures that training for quality should have an appreciation of the personal responsibility for meeting customer requirements by everyone from the most senior manager to the most junior employee. This demands reviewing the effectiveness of quality training programmes on a continuous basis and to establish and maintain procedures for the identification of the training needs and the provision of the actual training itself.

Construct 3. Manage by a customer-driver system and processes

Managing by a quality management system will enable the objectives set out in the quality policy to be achieved. In this regard, the ISO 9000:2000 series set out methods by which a system can be implemented to ensure that the specified customer requirements are met. The quality management system should apply to, and interact with, processes in the organization. Therefore, managing by customer-driven systems and processes requires deploying the human and other resources along the processes to add values for customer satisfaction.

This approach of managing by customer-driven systems and processes is associated with the concept of the internal customer–supplier relationship. Throughout all organizations there are a series of internal suppliers and customers. These form the quality chain, which is considered as the core of company-wide improvement (Oakland, 2000). The internal customer–supplier relationships must be managed to add value to customer satisfaction, which makes measurement of capability vital.

Many TQM writers have pointed out the importance of focusing on system processes and internal customer–supplier relationships and their management. They emphasized that TQM is centred on the effective management of processes and continuous customer satisfaction (Kanji, 1995; Zairi, 1994; Oakland, 2000; Braganza & Mayers, 1997; Beskese & Cebeci, 2001; Kolka, 2002; Stahan, 2002).

An early stage in the implementation process is to seek certification of a formal documented quality system to determine the assembly of components, such as the organizational structure, responsibilities, processes and resources for implementing total quality management. This also requires a comprehensive identification of customers and customer needs and the alignment of processes to satisfy the needs. The effort involves promoting internal customer–supplier relationships in the quality chain, recognizing that each person and each activity affects, and in turn is affected by, others to deliver values for the customer. In this regard, it is very important to understand the core processes and gain process sponsorship to ensure that appropriate resources are made available to map, investigate and improve the process. Moreover, it is important to break down the core processes into subprocesses, activities and tasks. This requires understanding customer needs at each level.

Quality has to be managed—it will not just happen (Oakland, 2000). This means that it

must involve everyone in the process and be applied throughout the organization. Many people in the support functions of organizations never see, experience or touch the products or services that their organizations buy or provide, but they do handle or produce things such as purchase orders or invoices. If every fourth invoice carries at least one error, what image of quality is transmitted? (Oakland, 2000). This makes the application of total quality approach to the management of support services and business processes important.

The setting up of performance measurement procedures to track the performance of the processes and for their continuous improvement is a vital component of this construct. Clearly, suppliers need to be evaluated and selected on their ability to supply the product or service in accordance with the organization's requirement.

Implementation guidelines

Pre-launch stage

Seek certification of a formal documented quality management system to ensure that specified customer requirements are met. Ensure that the quality management system applies to, and interacts with, all processes in the organization. Ensure that the quality management is determined by the nature of the process carried out to add value to the customer satisfaction.

Implementation stage

(1) Identify customer and customer needs. Identify customers in terms of internal and external customers. This requires that everyone understands the concept of the internal customer. Ensure that the requirements of the external customer are identified. This requires using various sources of information.

- Sales people and marketing personnel provide inputs.
- Customer surveys.
- Customer complaints.
- Focus groups.

Ensure that everyone in the organization knows his or her internal customer. This requires each person to interrogate every interface as follows:

- Who are my immediate customers?
- What are their true requirements?
- Do I have the necessary capability to meet the requirements? (If not, then what must change to improve the capability?)
- Who are my immediate suppliers?
- What are my true requirements?
- Do my suppliers have the capability to meet my requirements?

(2) Ensure that everyone understands the concept of quality chain of internal customer–supplier relationship. Introduce the concept of internal customer–supplier at the early stages of implementation so that the entire organization understands that each individual and each process has internal customers and suppliers. Ensure that this concept is used to add value to customer satisfaction.

(3) Apply the total quality approach to the management of support services and business processes. Ensure that everyone understands that quality management requires the involvement of everyone in the process and is applied throughout the organization.

Emphasize that failure to meet customer requirements in one part of the system creates multiple problems elsewhere.

(4) Identify the core processes and the subprocesses. Understand the core processes and break down the core processes into subprocesses. This requires top management to:

- Define the most critical processes that impact the ability of the organization to meet customer requirements. This requires providing training in process mapping for senior managers and middle managers, involvement of employees performing the process; process documentation including internal customers and suppliers and their requirements.
- Assign a sponsor for each core process, preferably a member of the management team. The task of the process sponsor is to:

  (1) Ensure that appropriate resources are made available to map, investigate and improve the process.
  (2) Assist in selecting the process improvement team leader and members.
  (3) Create an appropriate work environment for the teams' progress.
  (4) Report progress to top management.

- Break down the core processes into subprocesses, activities and tasks. Develop the skills of people so that they can understand how the new process structure will be analysed and made to work.
- Establish performance measurement of the processes and subprocesses.
- Establish performance measurement to monitor the performance of processes and to identify opportunities for continuous improvement. Ensure that measuring performance is meaningful in terms of inputs and outputs of the processes, and in terms of the customers and suppliers to the process. This should reflect the needs and wants of customers and the process capability.

(5) Rely on reasonable suppliers. Evaluate and select suppliers on their ability to supply the product or service in accordance with the organization's requirements. Consider supplier audit records and evidence of previously demonstrated ability. Determine the type and extent of supervision applicable to the purchased materials/services.

Construct 4: Create a continuous improvement culture

Continuous, or never-ending, improvement is a powerful concept related to the pursuit of never-ending improvement in meeting external and internal customer needs. This concept must be firmly tied to a continuous assessment of customer needs and depends on a flow of ideas on how to make improvements, reduce variation and generate greater customer satisfaction. It also requires a high level of commitment and a sense of personal responsibility in those operating the processes (Oakland, 2000).

Continuous improvement requires management by facts (Kanji, 1995, 1998), and commitment of all employees with an emphasis on teamwork to promote a bottom-up thrust for quality improvement (Oakland, 2000; Hoffman & Mehra, 1999; Dale *et al.*, 2001; McAdam & Kelly, 2002; Cebeci & Beskese, 2002). Tools and techniques such as cost of quality should be used to identify continuous improvement opportunities (Hiezer & Render, 2001).

Implementation guidelines

No major top management actions are needed at the pre-launch stage.

At implementation stage

(1) Ensure that continuous improvement and problem solving are based on facts and systematic review. Rely on facts in making decisions concerning continuous process improvement. Review documentation to identify improvement opportunities. Provide necessary training for problem identification and solving skills based on the use of facts.

(2) Promote teamwork as one of the organization's guiding values. Form various types of teams to work on continuous improvement projects. Reinforce teamwork by rewarding and recognizing successes.

(3) Measure customer satisfaction. Use various tools to get feedback from customers to measure their satisfaction. Collect data using customer surveys, and review internal data related to sales records, delivery time and customer complaints to measure customer satisfaction. Use these data sources to identify gaps for improvement.

(4) Use tools and techniques. Use tools and techniques to identify performance gaps for continuous improvement. Use the cost of quality and self-assessment tools developed in this study to identify opportunities for continuous improvement. Analyse the costs of quality and classify them using the PAF model. Conduct self-assessment exercise in the early years of implementation using the tool developed in this study.

At later stages, use National Quality Awards Criteria to conduct self-assessment. Use benchmarking whenever possible. Provide training for key personnel on how to use the various tools and techniques.

Implementation guidelines checklist

Table 1 provides a checklist of the critical quality factors associated with each quality construct.

Conclusions

A framework for TQM implementation in the Palestinian context has been derived based on the discussion of the findings of the investigations of the practices of Palestinian TQM organizations and knowledge of the literature. The framework illustrates the relative criticality of the critical quality factors and their interrelationships, and the framework is constructed using inputs from the TQM Palestinian organizations, in order to offer Palestinian management relevant guidelines for decision making for TQM implementation.

The literature is clear that models and frameworks cannot take responsibility from management as to how to implement TQM. Therefore, the framework represents a guide for organizations starting their TQM journey. The framework can be applied to organizations from the various sectors as it is constructed based on findings from heterogeneous organizations.

Most of the critical quality factors identified and used in the construction of this

Table 1. *Critical quality factors checklist*

Construct	Critical Quality Factor	Tier	In place
Construct 1. Demonstrate top management commitment and involvement	☐ Senior executives assume active responsibility for evaluation and improvement of management system, and leading quality drive.	1	
	☐ Elements of quality management structure in place to manage the organization's quality journey.	1	
	☐ Visibility of senior executives commitment to quality and customer satisfaction.	1	
	☐ Clear and consistent communication of mission statement and objectives defining quality values, expectations and focus.	1	
	☐ Comprehensive policy development and effective deployment of goals.	1	
Construct 2. Ensure employee commitment and involvement	☐ The entire workforce understands, and is committed to the vision, values and quality goals of the organization.	1	
	☐ Training for employees to improve interactive skills (such as communication skills, effective meeting skills, empowerment and leading skills).	2	
	☐ Effective top-down and bottom-up communication.	2	
	☐ Supervisors, unit heads and divisional managers assume active roles as facilitators of continuous improvement, coaches of new methods and leaders of empowered employees.	2	
	☐ Training for employees in problem identification and solving skills, quality improvement skills and other technical skills.	2	
Construct 3. Manage by customer-driven system and processes	☐ A formal documented quality management system in place.	1	
	☐ Comprehensive identification of customers and customer needs and alignment of processes to satisfy the needs.	1	
	☐ The entire organization understands that each individual and each process has internal customers and suppliers.	2	
	☐ Application of total quality approach to the management of support services and business processes.	2	
	☐ Systematic review and analysis of key process measures that have a direct and indirect impact on value-addition to customer satisfaction.	2	
	☐ Reliance on reasonable suppliers who are evaluated and selected based on their capability and commitment to product and service quality, and value for money.	3	
Construct 4. Create continuous improvement culture	☐ Problem solving and continuous improvement process based on facts and systematic analysis.	1	
	☐ The use of the customer surveys and feedback process, and tracking of other key measures to assess customer satisfaction.	2	
	☐ Cost of quality process to track rework, waste rejects and for continuous improvement.	3	

framework are used in other current frameworks of implementation provided by researchers, experts and consultants, and national quality awards such as MBNQA and EQA. It is, however, quite possible that a single model of TQM is not possible. The changes that occur in organizations' TQM programmes over time and in different circumstances (company culture, size, etc) may prevent a single model from adequately explaining the phenomena that arise (Black, 1993). It is, therefore, recommended that organizations complement the implementation guidelines by continually seeking out and studying the best implementation practices to understand how others are achieving success in implementing and sustaining TQM (Thiagarajan *et al.*, 2001). This is evident in the continuous evolution of implementation approaches such as MBNQA and EFQM.

The framework is applicable to organizations in various sectors, emphasizing top-down deployment and bottom-up participation as an implementation approach to achieve continuous customer satisfaction.

A framework of TQM implementation has been derived from the findings of the fieldwork and the knowledge of the literature. Such a framework contributes a lot to the Palestinian context, particularly with the absence of any implementation framework and any national quality award model. Moreover, this study adds to the available literature an empirical research that considers the TQM system as a whole. Finally, it is evident that TQM organizations aim to excel in certain areas, regardless of their place of incorporation. This supports Juran (1993) when he says that the culture does not influence the approaches to TQM implementation.

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Appendix. Three-tier critical quality factors

Question Number	Quality factor
	Tier I critical quality factors
Q1	Senior executives assume active responsibility for evaluation and improvement of management system, and leading quality drive.
Q7	Elements of quality management structure in place to manage the organization's quality journey.
Q2	Visibility of senior executive commitment to quality and customer satisfaction.
Q27	A formal documented quality management system in place.
Q3	Clear, consistent communication of mission statement and objectives defining quality values, expectations and focus.
Q4	Comprehensive policy development and effective deployment of goals.
Q20	Problem solving and continuous improvement processes based on facts and systematic analysis.
Q30	Comprehensive identification of customers and customer needs and alignment of process to satisfy the needs.
Q9	The entire workforce understands, and is committed to, the vision, values, and quality goals of the organization.
	Tier II critical quality factors
Q15	Training for employees to improve interactive skills (such as communication skills, effective meeting skills, empowerment and leadership skills).
Q6	Effective top-down and bottom-up communication.
Q12	Supervisors, unit heads and divisional managers assume active roles as facilitators of continuous improvement, coaches of new methods and leaders of empowered employees.
Q16	Training for employees in problem identification and solving skills, quality improvement skills and other technical skills.
Q8	The entire organization understands that each individual and each process has internal customers and suppliers.
Q19	Systematic review and analysis of key process measures that have a direct or indirect impact on value-addition to customer satisfaction.
Q21	Application of total quality approach to the management of support service and business process.
Q25	Cost of quality process to track rework, waste, rejects and for continuous improvement.
	Tier III critical quality factors
Q31	The use of customer surveys and feedback process, and tracking of other key measures to assess customer satisfaction.
Q28	Reliance on reasonably few dependable suppliers who are evaluated and selected based on their capability and commitment to product and service quality, and value for money.