Towards a theory of quality management: an integration of strategic management, quality management and project management

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Abstract: Despite the potential benefits of TQM, its application in healthcare organisations encountered difficulties. The main purpose of this study is to develop a model of quality management for healthcare organisations. Thirty quality management experts were approached by using a Delphi method to specify the components of an appropriate quality management model. The core research led to the development of a context-specific model of quality management for healthcare organisations. It includes creating the organisation’s long-term quality goals and objectives related to employees, customers, suppliers, society and organisation, developing strategies and action plans to achieve these objectives, providing the necessary education and training, adopting cultural change, and then allocating resources to implement the action plans.

Keywords: strategic management; quality management; project management; healthcare organisations; modelling.


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1 Introduction

While TQM has been suggested in principle to be effective for improving performance, its application in practice involves many difficulties. Many organisations are experiencing dissatisfaction with their TQM efforts due to the lack of visible improvements in performance (Iaquinto, 1999; Lackritz, 1997; McCabe and Wilkinson, 1998; and Soltani et al., 2005). For instance, Jacob (1993) and Hubiak and O’Donnell (1996) have asserted that approximately two-thirds of US companies have failed to
implement TQM successfully. Several researchers reported that TQM programmes have led to improvements in productivity in only within the range of 20% to 35% of the firms that have implemented such programmes (Eskildson, 1994; Harari, 1997; Tata and Prasad, 1998).

Burrows (1992) reported a 95% failure rate for initiated TQM programmes. Kearney (1992) claimed that 80% of TQM initiatives failed to produce any tangible benefits. Some studies reported estimates of TQM failure rates as high as 60%–70% (Becker et al., 1994; Brown, 1993; Hutton, 1992). While TQM was ranked third among all techniques that were management favourites in 1993, it dropped to 15th place in 2007 (Rigby and Bilodeau, 2007). Although the findings of some of these studies might suffer from methodological weaknesses, the increasing number of studies reporting TQM failure rates at times above 70% gives cause for concern.

The difficulties of implementing TQM are even higher in the health sector in view of its special characteristics (Ennis and Harrington, 1999; Shortell et al., 1995; Zabada et al., 1998). Although some TQM projects have been shown to be effective (Counte et al., 1995; Francois et al., 2003; Jackson, 2001; Klein et al., 1998; Motwani et al., 1996), most of these have been limited to a small number of departments or a narrow aspect of departmental performance. Many studies rely on self-reports by quality consultants or senior managers with an interest in a positive finding of TQM.

While TQM implementation in healthcare requires considerable investment of time and money, its benefits are not certain (Leatherman et al., 2003; Øvretveit and Gustafson, 2002; Wagner et al., 1999). The literature provides little evidence of the effectiveness of TQM in healthcare. Bigelow and Arndt (1995), and Counte and Meurer (2001) questioned the effectiveness of TQM in the health sector. Øvretveit (2000) also concluded that there is no evidence to prove that TQM works in European healthcare institutions. Huq and Martin (2000) reported high failure rates (60%–67%) of TQM implementation.

This paper presents the process of introducing a quality management model for healthcare organisations to help managers improve processes effectively. The development of this model is based on the quality management literature review and a Delphi study on quality management experts in healthcare.

2 Literature review

There are both theoretical problems and practical difficulties in applying TQM in organisations. A clear understanding of TQM is essential for its effective implementation. However, TQM does not provide an explicit theory. While it is widely practiced, there is little agreement on what it is and what its essential features are. TQM is a diffuse concept and an abstract term, with many vague descriptions, and no generally accepted definition or agreed content. TQM has been variously defined as an ‘Approach’ (Flynn et al., 1994), a ‘Culture’ (Kanji and Yui, 1997), a ‘Philosophy’ (Joyce et al., 2006), a ‘System’ (Hellsten and Klefsjö, 2000), a ‘Strategy’ (Harvey and Brown, 2001), a ‘Programme’ (James, 1996), a ‘Process’ (Almaraz, 1994), a ‘Technology’ (Camison, 1996), and a ‘Technique’ (Wong et al., 2010). Consequently, TQM is used interchangeably with other terms such as continuous quality improvement, quality assurance and total quality control.
Singh and Smith (2006) believe that TQM was partially developed. Some complementary management theories must be integrated with TQM to achieve competitive advantage. Due knowledge of sociology, psychology and change management would have provided assistance in managing the TQM change and motivating employees to participate actively in the change process (Carman et al., 1996; Da Silva et al., 2005; Waldman and Gopalakrishnan, 1996).

Difficulties also arise when an attempt is made to implement TQM. Many of the failures of TQM are attributed to the methods of implementation (Claver et al., 2003; Hansson and Klefsjö, 2003; Lemak et al., 2002; Seetharaman et al., 2006). There is no standard method for implementing TQM core principles in an organisation. This is left to the interpretation of quality practitioners. Consequently, the same TQM programme may have different outcomes in different organisations because of the way it is implemented.

The most frequently mentioned reasons for TQM implementation failures listed in previous studies include a lack of consistent top management support, incompatible organisational structure, failure to develop and sustain a quality oriented culture, inadequate understanding of TQM, lack of a formalised plan for change, failure to integrate TQM into existing managerial systems, lack of employee involvement, insufficient education and training, lack of customer focus, inadequate resources, poor communication, inappropriate recognition and reward system, lack of partnership with suppliers, fear and resistance to change, short term thinking and unrealistic expectations (Beer, 2003; Choi and Behling, 1997; Fok et al., 2000; Huq, 2005; Mosadeghrad, 2005; Sebastianelli and Tamimi, 2003; Seetharaman et al., 2006; Sila and Ebrahimpour, 2002; Soltani, 2005; Whalen and Rahim, 1994).

In addition to general barriers to TQM implementation, the failure of TQM in healthcare is also due to the strongly departmentalised and hierarchical organisational structure, occupational subcultures, professional autonomy, and tensions and misunderstandings between management and professionals (Badrick and Preston, 2001; Counte and Meurer, 2001; Short and Rahim, 1995; Shortell et al., 1995; Zabada et al., 1998). Other obstacles to TQM success in healthcare include insufficient motivation of professionals to participate in TQM initiatives, the difficulty involved in evaluating the processes and outcomes, and a lack of market based competition (Adinolfi, 2003; Bucuniene et al., 2006; Hellstrom et al., 2010; Lim and Tang, 2000; Nembhard et al., 2009; Øvretveit, 2000).

Due to the distinctive nature of healthcare services, there are a lot of incompatibilities between the TQM philosophy and the practices on which the management of healthcare organisations is currently based. The very complexity of the healthcare system, and its bureaucratic and highly departmentalised structure can pose a significant obstacle to the implementation of TQM and decrease its effectiveness (Adinolfi, 2003; Lim and Tang, 2000; Naveh and Stern, 2005; Short and Rahim, 1995; Zabada et al., 1998).

Healthcare systems are the most complex systems serving humans. Delivery of healthcare services represents a complex collection of diagnostic, therapeutic and logistic processes, all of which must be highly coordinated to ensure the delivery of quality care. The professional dominance environment of healthcare, the complex nature of healthcare practice and ethical considerations add to the complexity (Claus, 1991; Kimberly and Minvielle, 2000).
Unlike manufacturing companies, it is difficult to define, measure and control outcomes in healthcare (Morrison and Heineke, 1992). Healthcare problems also tend to be more complex and require a high degree of customised solutions (Abd Manaf, 2005). This aspect of healthcare is in contradiction with the concept of standardisation and variation control in TQM. Furthermore, customers in health sector are powerless to alter healthcare providers’ behaviour through market transactions (Zabada et al., 1998). Cultural and socio-demographic factors, such as age and gender, severity of illness, and psychosocial factors such as patient fears and dependence on the healthcare providers prevent the expression of dissatisfaction (Arnetz and Arnetz, 1996; Satia and Dohlie, 1999; Sitzia and Wood, 1997).

McLaughlin and Kaluzny (1990) argue that the complex, bureaucratic and highly departmentalised structure, and the multiple layers of authority are the most difficult barriers to implement TQM in healthcare. The hierarchical structure of healthcare organisations exemplifies bureaucratic and authoritative cultures that are not conducive towards employee empowerment which is crucial to the successful implementation of TQM (Abd Manaf, 2005; Shortell et al., 1995; Zabada et al., 1998). Moreover, healthcare settings are structured in departments with significant autonomy of action, which further enhances their ability to resist change (Francois et al., 2003; McNulty and Ferlie, 2002). Specialised accountability combined with professional autonomy segment the work processes. As a result, efforts to improve the quality of care are stratified hierarchically. Physicians take responsibility for one aspect, nurses for another and managers for still another. No single group is held accountable for the total process (Kaluzny et al., 1992). The professional bureaucracy and paternalism (e.g., physician power), and work on human beings limit hierarchical authority and make it difficult for managers to use scientific quality management principles.

Healthcare professionals have remained divided from management (Ennis and Harrington, 1999; Moeller, 2001). They believe that TQM is used mainly for cost control and it is, therefore, applicable only to administrative and support functions (Zabada et al., 1998). As a result, they do not feel that TQM activities are part of their responsibilities. Lack of time is the main barrier for their participation in TQM activities. They perceive a conflict between allocating time for treating patients and performing TQM activities (Maguerez et al., 2001; Valenstein et al., 2004). Their relative inexperience and unwillingness to work as team members are also contributing to their indifference to TQM (Zabada et al., 1998).

There are powerful subcultures such as physicians, nurses and paramedics who have their own definition of quality and follow specific ways to achieve it. Their interests and functional orientations do not facilitate a systems approach to quality promotion and create a situation where management has little control over the most strategic areas where TQM could yield greater results (Natarajan, 2006; Piligrimiene and Buciniene, 2008; Zabada et al., 1998). This also makes it difficult to satisfy the needs of all those people who are involved in healthcare service delivery.

The paternalistic attitude among many professionals that only they can define quality attributes limits the application of customer-driven TQM programmes (Milakovich, 2005). Customer focus in TQM requires that customers are identifiable and can define and recognise quality. However, it is difficult to identify customers and satisfy their needs in health sector. Unlike in most other industries, purchasing decisions, payment and receipt of healthcare service are separate. The patient is not necessarily the ultimate ‘external’ customer in healthcare. Other external groups such as the government,
employers and third party payers affect patient expectations. This makes it difficult to anticipate patient needs. Patients, in general, lack the ability to judge the technical aspects of healthcare services. Many patients do not even know their own healthcare needs (Berwick et al., 1992).

TQM is a western management concept, which originally evolved out of Japanese management practices and came from industrial experience. Hence, it may not integrate well into a different sector (i.e., healthcare). Differences in cultures, healthcare structures, payment and incentive systems, leadership styles, inter-professional working relationships, providers’ attitudes and values, and clients’ demands and expectations, all play a significant role in TQM implementation and its outcomes.

3 Methodology

3.1 Purpose and objectives

The purpose of this study was to develop a quality management model for healthcare organisations, so that organisations aiming at using quality management to achieve excellence can follow through easily.

3.2 Method

To establish a new theory of quality management, three questions should be answered: what the new theory of quality management is and how and why the effective adoption of this theory would lead to the achievement of competitive advantage. A contributory Delphi procedure was used to identify the constructs of the quality management model. These constructs provide the ‘What?’ of the new quality management theory. To establish the ‘How?’ of the new quality management theory, the relationships among the quality management constructs were investigated. Finally, to justify the ‘Why?’ of the theory, the proposed model of quality management was juxtaposed with the existing TQM knowledge in the literature.

3.3 Participants

The first step in the execution of the Delphi method is the selection of an expert panel for the study. Powell (2003) argues that the panel of experts should include individuals that

1. reflect current knowledge
2. receive recognition and credibility based on their knowledge of the topic
3. represent diverse perspectives and include a wide range of viewpoints.

A panel of 15 to 20 experts is adequate to obtain reliable results in a Delphi study (Denzin and Lincoln, 1994; Stitt-Gohdes and Crews, 2004). To achieve this group size at the end of the procedure, 36 persons were asked to participate in the study. They were recognised healthcare quality management experts as evidenced by scientific publications and active participation in quality management efforts. A list of experts was prepared by searching their names in quality management seminars, journals and web sites. To ensure a diversity of viewpoints, the panel included members from around the world.
Thirty experts agreed to participate in the study. They all had at least five years’ experience of the implementation and evaluation of quality management initiatives such as TQM and CQI in healthcare organisations. Several had been actively involved in academic research and had published articles on quality management in the last five years. Some participants’ primary responsibility was related to quality management.

3.4 Instrument

The panel members were introduced to the nature of the task through an open questionnaire with a covering letter briefly explaining the purpose of the study and the mechanisms proposed to maintain confidentiality. The questionnaire was divided into two sections. The first section dealt with background information, such as the respondent’s nationality, age, gender, level of education, job title, and number of years’ experience of quality management. In the second part of the questionnaire, participants were asked about quality management enablers in healthcare organisations.

3.5 Delphi process rounds

Questionnaires were sent to the panel members by e-mail. Four rounds were used, each consisting of the generation and analysis of the data, followed by development of the material to be shared with the panel in the next round. Throughout the study, response rates of panel members differed (Table 1).

<table>
<thead>
<tr>
<th>Round</th>
<th>Sent</th>
<th>Received</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>30</td>
<td>30</td>
<td>100%</td>
</tr>
<tr>
<td>Two</td>
<td>30</td>
<td>26</td>
<td>86.7%</td>
</tr>
<tr>
<td>Three</td>
<td>26</td>
<td>26</td>
<td>100%</td>
</tr>
<tr>
<td>Four</td>
<td>26</td>
<td>24</td>
<td>92.3%</td>
</tr>
</tbody>
</table>

3.5.1 Round one

For round one, panel members were asked to list seven most important enablers of quality of healthcare on a response form. After the questionnaires were returned, the responses were edited for clarity and duplicate responses were eliminated.

3.5.2 Round two

Summarised results from round one then were sent anonymously to the respondent group. The panel members were given one opportunity to revise their earlier answers in light of the replies of other members of the panel and extend their responses to the question. They were then asked to list the ten most important enablers of quality of healthcare and give each a score between 1 and 10 according to their importance. The purpose of this second round was to extend responses to the question.
### 3.5.3 Round three

The responses from round two were classified into categories based upon similarity of meaning. The classification was carried out by the researcher using NVivo, a contextual analysis software programme to facilitate the analysis of the qualitative data. A definition for each category was then written using wording derived from the responses provided by the experts. Next, panel members were asked to rate the categories that emerged during round two and give them a score on a continuous scale of 1–10 according to their importance.

Experts were also encouraged to include comments about the categorisation of responses. After questionnaires were returned, the Statistical Package for the Social Sciences (SPSS) was used to calculate the median, range, mean, and standard deviation for each category based on the scores given by the panel members. The purpose of this round was to prioritise the categories, using the score assigned by each expert to each category.

### 3.5.4 Round four

In the fourth and final round — using a form that included mean, median, standard deviations, and range of each category from all panel members — each expert was given the opportunity to re-rate the categories and provide feedback on any changes made. The purpose of this concluding round was to finalise the prioritisation of topic categories and reach a consensus.

### 3.6 Data analysis

The data were analysed using the Statistical Package for the Social Sciences (SPSS 11). Descriptive statistics such as means and standard deviations were computed for each of the items. The Mann-Whitney and Kruskal-Wallis tests were used to determine if there was a difference in ranking of items between respondents. The Wilcoxon test was used to determine the differences between the experts’ ratings for rounds three and four. Multiple regression analysis was applied to test the correlations between the respondents’ demographics and their choice of means and ranks.

### 3.7 Evaluating the quality of research

The researcher has not allowed personal values to influence the conduct of the research and findings deriving from it. The researcher meticulously documented the data collection and analysis procedures. This allows data to be audited to examine the data collection and analysis procedures and make judgements about the potential for bias. Credibility was enhanced by using participants from around the world, from a mixture of academe and healthcare industry and recognised as expert as evidenced by their publications and active participation in quality management efforts. The involvement of participants from around the world helps ensure that the model resulting from this survey is, to a large degree, applicable to healthcare organisations.
4 Results

4.1 Characteristics of the respondents

The demographic characteristics of the participants are reflected in Table 2. The majority of the sample had obtained a doctoral degree (70%). More than half of the respondents were male (53.3%). Respondents ranged in age from 36 to 85 with a mean age of 50.9 years (SD 12.2). On average, they had 16.2 (SD 9.8) years of experience in quality management. Two-third of the participants had more than ten years of experience in this field.

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 39 years</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>40 to 49 years</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>50 years or older</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td>Years of experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to10 years</td>
<td>10</td>
<td>33.4</td>
</tr>
<tr>
<td>11 to 15 years</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>16 to 20 years</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>26 to 30 years</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Above 30 years</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Graduation degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Master of Science</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>Doctor of Medicine</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Doctor of Philosophy</td>
<td>21</td>
<td>70</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>Quality manager</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Quality management consultant</td>
<td>7</td>
<td>23.3</td>
</tr>
</tbody>
</table>

4.2 Quality enablers in healthcare

One hundred and sixty-one quality management success factors were extracted from participants’ responses. Table 3 shows the most frequently mentioned quality management success factors from quality management experts’ points of view. The top
five critical success factors identified were training, employee involvement, management support, leadership, and customer focus. The experts gave a great deal of consideration to the ‘soft’ aspects of quality management (e.g., education, leadership and management support, employee involvement, etc.) and less to ‘hard’ factors like quality systems, techniques and tools.

Table 3  The most important enablers of quality management in healthcare

<table>
<thead>
<tr>
<th>Quality enablers</th>
<th>Rank</th>
<th>Frequency of occurrence</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and training</td>
<td>1</td>
<td>28</td>
<td>93.3</td>
</tr>
<tr>
<td>Employee commitment and involvement</td>
<td>2</td>
<td>23</td>
<td>76.7</td>
</tr>
<tr>
<td>Top management commitment</td>
<td>3</td>
<td>22</td>
<td>73.3</td>
</tr>
<tr>
<td>Strong managerial and clinical leadership</td>
<td>4</td>
<td>21</td>
<td>70.0</td>
</tr>
<tr>
<td>Customer focus</td>
<td>5</td>
<td>21</td>
<td>70.0</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>6</td>
<td>20</td>
<td>66.7</td>
</tr>
<tr>
<td>Planning</td>
<td>7</td>
<td>18</td>
<td>60.0</td>
</tr>
<tr>
<td>Quality culture</td>
<td>8</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td>Evaluation and control</td>
<td>9</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Information management</td>
<td>10</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Resource management</td>
<td>11</td>
<td>14</td>
<td>46.7</td>
</tr>
<tr>
<td>Having a quality system</td>
<td>12</td>
<td>12</td>
<td>40.0</td>
</tr>
</tbody>
</table>

The quality management success factors generated by the panellists were classified into ten categories: leadership and management, strategic quality planning, total continuous learning, corporate quality culture, employees management, customer management, knowledge management, resource management, supplier management and process management.

The leadership and management category addresses the critical role of leadership and management in driving continuous quality improvement in an organisation. It examines how senior managers as leaders are personally involved in ensuring that the organisation’s quality management system is developed and implemented, and support a culture of continuous quality improvement.

The strategic quality planning category examines how an organisation sets strategic directions, establishes a long-term vision, develops the values required for long-term success, sets strategic goals and objectives, incorporates quality in the strategic goals and objectives, and implements these via appropriate strategies, policies and action plans.

The total continuous learning category examines how an organisation recognises and nurtures the development of abilities, skills and knowledge. This is exemplified by providing adequate education and training for employees, suppliers and clients. The corporate quality culture category examines how the organisation develops a nurturing organisational culture that supports quality.

The employee management category examines how an organisation develops and manages the full potential of its people, promotes fairness and equality, involves,
encourages and enables people to contribute to the achievement of the organisational goals and recognises their achievements. This category addresses the extent of employee competency, empowerment, commitment and involvement in continuous improvement.

The customer management category shows the extent to which the organisation is customer driven, meets customer needs and committed to customer satisfaction. It examines how the organisation builds relationships with customers, determines customers’ requirements and expectations and measures their satisfaction, and uses the feedback of customers in improving quality of services.

The resource management category examines how an organisation manages resources effectively and efficiently in order to support key processes and action plans. The knowledge management category examines how an organisation identifies, gathers, analyses and distributes data and information and creates and uses knowledge effectively and efficiently to support managers and employees decision making processes. The supplier management category examines how an organisation manages external partnerships with suppliers effectively and efficiently to ensure the quality of purchased products and services.

The process management category examines how key processes are designed, implemented, managed and improved in order to support the organisation’s strategy and action plans, fully satisfy customers and other stakeholders, and achieve better performance.

The largest number of practices (success factors) fell into the categories of process management and employee management, accounting for 35 and 24 implementation practices (success factors) respectively. Strategic quality planning accounted for 17 practices.

Experts were asked to give those ten quality management categories a score between 1 and 10 according to their level of importance. Among the enablers of quality management, leadership and management ranked first in terms of importance.

Various experts assigned different levels of importance to the quality management success factors. This could be due to the differences in their cultures, healthcare systems and government regulations. However, experts in the same country had achieved a consensus on the importance of enablers of quality. The finding supports the culturalist school that argues that it would be difficult to transfer management practices because of major cultural differences (Beechler and Yang, 1993).

Japanese quality management experts seemed to rate aspects pertaining to customer management, leadership, planning, quality culture, total continuous learning and employee management higher. American experts assigned greater importance to the role of planning, quality culture, leadership, education and process management in quality management success. In contrast, British experts placed more emphasis on training, planning and process management. Moreover, compared to US managers, European experts seemed to place a greater emphasis on the role of customer management in achieving superior quality. These findings, however, should be interpreted with caution due to the small number of experts studied in each country.

As shown in Table 4, the reduction in standard deviation for all categories in the final round represents a movement towards greater consensus among experts in terms of the relative importance of each quality enabler. The non-parametric Wilcoxon test showed statistically significant differences between the ratings for rounds three and four except
for employee management and supplier management. The greatest change among the panel members was in the ‘resource management’ topic category, while the least change occurred with ‘employee management’.

Table 4  
Rank, median, mean and standard deviations of quality enablers’ scores in rounds 3 and 4

<table>
<thead>
<tr>
<th>Quality enablers</th>
<th>Results of round three</th>
<th>Results of round four</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>Median</td>
</tr>
<tr>
<td>Leadership and management</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Process management</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Corporate quality culture</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Total continuous learning</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Customer management</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Strategic quality planning</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Employees management</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Knowledge management</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Resource management</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Supplier management</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

4.3 Developing a quality management model

A quality management model called strategic collaborative quality management (SCQM) was introduced, informed by the results of the Delphi method. SCQM provides a system of quality management with 15 constructs, of which ten are enablers and five are results. These constructs provide the ‘What?’ or building blocks of the new quality management theory. The enablers cover the structure and the processes that the organisation can use to manage quality and drive the results. The results criteria cover the aspects of performance in a broad way. Overall performance is dependent upon balancing and satisfying the needs of all relevant stakeholders. These include the people employed, customers, suppliers and society in general. The relationship among SCQM constructs is shown diagrammatically in Figure 1.

Therefore, SCQM can be defined as “an integrated system of principles, methods and best practices that provide a framework to strive for excellence by continuously improving overall organisational performance (employee results, customer results, supplier results, society results and organisation results) through leadership and management, strategic quality planning, corporate quality culture, total continuous
learning, employees management, customer management, knowledge management, resource management, supplier management and process management”.

**Figure 1** A diagrammatic representation of the SCQM model

The next step is to specify the relationships among the quality management constructs. For this purpose, the relations diagram was employed (Anderson et al., 1994) to specify the nature of the theoretical relationships among the 15 constructs in a judgemental process using unidirectional and/or bidirectional arrows. These arrows resulted from a logical thought process, essentially asking the questions: “Is this construct a cause or an effect? If this construct is a cause, is there a preceding cause? If this is an effect, does it affect other constructs?” By repetitively applying this process of logic, each possible connection between pairs of constructs was examined and was either included or excluded from the relations diagram. The relationship among SCQM constructs is shown diagrammatically in Figure 2.

The effectiveness of the quality management arises from leadership and management efforts toward defining and communicating a strategic quality plan and creating a learning organisation and a corporate quality culture to facilitate the implementation of process management practices, which, when implemented effectively, support the satisfaction of employees, customers, suppliers and finally society and organisational survival through sustained employee, customer, supplier, resource, and knowledge management.

To justify the ‘Why?’ of the new quality management theory, the proposed model of quality management (SCQM) was juxtaposed with the existing TQM knowledge in the literature. Table 5 summarises the differences between SCQM and TQM.
SCQM as a systematic quality management system advocates an integrated approach in order to support the transition from a traditional organisation to a total quality organisation. As illustrated in Figure 3, SCQM is a combination of strategic management, quality management and project management.

SCQM integrates the principles of quality management into all the three steps of strategic management. This means that quality concepts are integrated into the mission, vision and goals of the organisation, in the formulation of the strategies and actions plans and in the deployment and evaluation of the actions plans. Quality action plans can be implemented effectively and efficiently through sound project management. A project management approach is the best approach to implement such change. It helps to build a culture of quality and learning throughout the organisation through planning, implementing, monitoring and controlling timely, purposeful and well-defined quality improvement projects.
The philosophy of both TQM and SCQM is based on prevention not detection. However, in TQM, the belief is ‘Doing thing right’ (Masters and Schmele, 1991), while SCQM focuses on ‘Doing the right thing right first time’. TQM attempts to improve the existing processes, while in SCQM the emphasis is on redesigning processes in a way that make it possible to deliver high quality outcomes. Systems thinking, process mapping, and process capability analysis in SCQM model help to identify opportunities to improve outcomes by improving structures and processes.

The strategic value of TQM appears to be limited (Ferdows and De Meyer, 1990; Singh and Smith, 2006; Swink and Way, 1995). While quality may be of strategic value, organisations can also compete on other strategic dimensions such as price, efficiency, timeliness and flexibility. The emphasis of SCQM is on the strategic dimensions of an organisation and therefore a deeper consideration of environmental issues. SCQM uses strategic quality planning which helps healthcare organisations investigate their internal and external environments. It allows organisations to set clear priorities, establish long-term strategic goals and allocate resources for achieving them. Furthermore, continuous quality improvement is incorporated into the organisation’s strategies and action plans.

There are three interrelated classifications of organisational change: structural, contextual and procedural changes. Of these, TQM adequately addresses only procedural change (Cao et al., 2000). In order to improve the quality of products or services, it is necessary to change the organisational structure and culture. Procedural changes may have little effect if there are incompatibilities between organisational structure and culture and the principles and core values of the quality management initiative. SCQM involves changes in the structure, context (culture, values and political systems) and processes of an organisation. Structural and contextual changes promote and sustain quality management activities in the organisation. Furthermore, the structural and procedural changes required by the model will stimulate employees’ participation.

While in TQM, quality improvement teams choose the topics of improvement after listing and prioritising all the department’s problems (Crosby, 1992), in SCQM the emphasis is to standardise processes, determine reasonable and achievable objectives for
processes and improve them continually and continuously until achieve the objectives. The SCQM programme enables the members to achieve all the targets they set for a process. SCQM uses data analysis and other problem-solving techniques to evaluate the ability of a process to reduce variation and provide high quality defect free services.

While TQM emphasises too much on customers and fails to address the needs of other stakeholders, SCQM has a focus on effective collaboration with both internal and external customers. The goal of TQM is to delight the customer by improving the quality of product or service based on what is important to the customer. TQM’s overemphasis on customer satisfaction can negatively affect overall organisational performance. Collaboration and cooperation among employees, customers and suppliers are crucial in a system as complex as the healthcare service. SCQM emphasises a win-win relationship with not only customers but also with employees and suppliers. This reduces people’s resistance to quality management change.

Key employees receive training in TQM approach. In contrast, SCQM emphasises training all employees at all levels of the organisation to make sure they understand the way to perform their job right forever. SCQM also highlights the importance of providing education and training for customers and suppliers which is very important in healthcare organisations. An effective training and education programme secures commitment and behavioural change towards continuous quality improvement. Total continuous learning can result in a more satisfied workforce and an environment for innovation and creativity.

SCQM’s requirements are clear and well defined, unlike the vague descriptions and non-specific requirements of TQM (Carr and Littman, 1990; Godfrey et al., 1997; Flood, 1993). Clear definition of SCQM provides a common understanding of the model. Lack of understanding what is necessary in guiding organisations through a change initiative is a major reason for the failure of change programmes (Self and Schraeder, 2009). There is no standard method for TQM implementation in an organisation. A lack of knowledge of practical methods and guidelines for TQM implementation was the main reason for TQM failure in many studies (Claver et al., 2003; Hansson and Klefsjö, 2003; Lemak et al., 2002; Seetharaman et al., 2006; Young and Wilkinson, 2002). In contrast, road maps, techniques and methods for implementing SCQM are better defined. Coherent set of SCQM principles and methodology guide managers and practitioners to define, measure and control the quality of products or services.

The SCQM model is more result oriented than other TQM models. It looks at the impact of a process improvement on overall organisational performance. This includes performance related to employees, customers, suppliers, society and organisation. The SCQM model highlights the importance of supplier results, while this construct of quality management is missing in TQM models such as EFQM or MBNQA models. Furthermore, unlike MBNQA model, SCQM does include financial performance of the organisation.

5 Discussion

Contributory Delphi method was used in this study to identify the constructs of an appropriate quality management model for healthcare organisations. It allowed many individuals to contribute information to a problem area that is much broader in scope than the knowledge that any one of the individuals possesses (Mitroff and Turoff, 2002). Panel
experts identified 161 quality management practices (success factors) in the first two rounds of the Delphi study. These quality management success factors were then categorised into ten groups that constitute the constructs of a quality management model for healthcare organisations. This study indicated that quality management experts emphasised more soft critical success factors for quality management implementation in healthcare sector. This finding is consistent with those of Woon (2000) who found that the ‘soft’ elements of TQM (e.g., leadership and customer focus) are more applicable in service companies than its hard elements (e.g., process control techniques).

5.1 Leadership and management

Among the enablers of quality management, leadership and management ranked first in terms of importance. It is important that top management takes a leadership role, exhibits role model behaviour, shows a strong commitment to quality management, creates a supportive environment and manages change strategically. Managers should create an inspiring vision, establish shared values, set clear goals and objectives, provide direction, motivate employees and empower them to participate actively in quality improvement, monitor progress, provide appropriate feedback and give tangible rewards.

Top management must be totally committed to quality management in both words and actions to sustain a long-term effort to improve performance. Acceptance of quality management by employees depends on the attitudes of management towards quality (Taylor and Wright, 2003). Management commitment can lead to an increased employee commitment to quality improvement (Beer, 2003; Waldman et al., 1998). Organisations experience low employee involvement and interest in their quality management programmes when management commitment is missing at any level.

Deming (1986) believed that leadership has a crucial role in the success of quality management initiatives. Effective leadership creates a quality environment and provides support for the staff through encouraging education and self-development, removing barriers, and driving out fear. Using transformational and participative leadership has been shown to have more synergistic effects on quality management success (Sosik and Dionne, 1997; Yang, 2003). Transformational leadership style empowers employees to take necessary actions to ensure customer satisfaction. Shortell et al. (1995) argued that leadership styles that are based on command and control were a major obstacle to the application of quality management in healthcare organisations.

5.2 Strategic quality planning

Quality is a strategic issue and requires a strategic plan (Russel and Taylor, 2006). A successful quality management implementation needs a long-term strategic plan based on total quality to ensure superior efficiency. In Japan, the successful application of quality management principles was closely related to the application of Hoshin Kanri or strategic quality planning (Tennant and Roberts, 2001).

Quality should be recognised as an organisation’s strategic goal and should be reflected in the organisation’s corporate vision and mission. Including quality management principles (e.g., continuous quality improvement) into organisational goals, policies, strategies, and action plans is associated with the degree of quality management success (Lawrence and Early, 1992). A strategic quality plan ensures the availability of resources for quality management implementation. It helps identify customers’ and other
stakeholders’ requirements and then design strategies and action plans to achieve the goals and objectives. Without the integration of quality management with strategic and operational plans, it becomes yet another initiative.

5.3 Total continuous learning

Quality management, through its focus on continuous improvement, requires a commitment to learning (Love et al., 2000). Training and education are key components in a quality management programme, and have an important role in establishing a common language of quality, and securing commitment and behaviour change toward continuous quality improvement. Education and training enhance employees’ job related skills, communication and teamwork and help overcome employees’ resistance to quality management change (Kaynak and Hartley, 2008).

Healthcare managers should develop the technical capabilities of employees and enable them to improve the quality of services continuously. Education and training provide the necessary knowledge, skills and abilities for employees to do the right job effectively. Increased training in job skills results in improved processes which improve product quality (Russel and Taylor, 2006).

Everyone in the organisation must be provided with the necessary training on the theory, practice and tools of quality management. Top management must be the first to attend training. Training in quality management tools and skills such as statistical process control enable employees to diagnose and correct day-to-day problems related to their job (Russel and Taylor, 2006).

5.4 Corporate quality culture

Organisational culture is a shared set of dominant values, beliefs, norms, assumptions, and interpretations that characterise an organisation (Cameron and Quinn, 1999), guide behaviour in the organisation (Reed et al., 2000), and which are taught to new members as the correct way to perceive, think and feel (Schein, 1992). An organisation’s culture determines the way the organisation conducts its business, and as a result also influences its processes (Sempane et al., 2002).

Organisational culture acts as a force for cohesion in an organisation and therefore can support or inhibit the process of change towards the application of quality management (Sinclair and Collins, 1994; Tata and Prasad, 1998). Quality management programmes are more likely to succeed if the prevailing organisational culture is compatible with quality management values and basic principles (Kujala and Lillrank, 2004). By contrast, cultures that emphasise formal structures, regulations and reporting relationships appear to be negatively associated with quality improvement activity (Ferlie and Shortell, 2001).

The overall requirement of a quality management programme is to develop a quality culture. Quality should be part of the culture of healthcare organisations. Developing a genuine culture to sustain and nurture quality management is crucial to the success of quality management within an organisation. To transform the corporate culture to become a quality culture, a significant change in strategic priorities, beliefs, attitudes, behaviours and basic assumptions guiding an organisation is needed (Mosadeghrad, 2006).
An organisational culture emphasising transparency, honesty, trust, respect, effective communication, empowerment, learning, teamwork, coordination, risk-taking, innovation, research, customer focus and continuous improvement provides an important foundation for implementing a quality management programme (Lighter and Fair, 2004; Moeller, 2001; Scott et al., 2003; Wardhani et al., 2009). Teamwork and collaboration have a strong influence in institutionalising quality management efforts (Gallear and Ghobadian, 2004). Team’s attitude toward quality management and skills and understanding of quality improvement are associated with effective quality management implementation (Routhieaux and Gutek, 1998).

5.5 Employee management

People are the drivers of any organisational change. The effectiveness of an organisation depends on the extent to which people perform their roles and move towards the corporate goals and objectives (Oakland, 2003). The effective management of human resources is an important component for the success of quality management. Human resource systems, including job design, employee selection processes, training and development, performance appraisal, and compensation and rewards must support the corporate quality culture. This also involves employees’ belief in and willingness to change. Jobs must be redesigned to give employees more flexibility, autonomy and authority and encourage creativity. Performance appraisal and reward systems must be modified to focus more on rewarding teamwork and long-term performance.

Quality management demands employee’s expertise, passion, motivation, persistence, responsibility, accountability and a quality-oriented attitude and mentality (Huq, 1996; Schalk and Van Dijk, 2005). The delivery of quality services is dependent upon motivated, qualified and committed employees. Employees who feel emotionally attached to an organisation will have a greater motivation to make a meaningful contribution to that organisation (Meyer and Allen, 1997). Therefore, leaders need to shift their approach from managing change to managing people (Moran and Brightman, 2000). They should pay attention to the morale and wellbeing of employees.

The effective participation of all employees, including physicians, is a critical factor in successful quality management implementation (Huq, 2006; Wardhani et al., 2009). Effective employee involvement in quality management activities contribute to the establishment of a corporate quality culture through improving employees’ behaviour, attitude and personal capabilities, and developing a sense of ownership, commitment and effective participation in solving workplace problems (Juran and Gryna, 1993; Hamzah and Zairi, 1996; Wilkinson, 2004).

A very important principle of quality management is the empowerment of employees. Empowerment gives employees the ability, confidence and commitment to take responsibility and ownership to improve the quality of their work (Besterfield et al., 2003). Empowerment enables employees to take control of their work operations in a manner that encourages continuous learning as well as personal responsibility (Huq and Martin, 2000). However, employees should be willing to be empowered and ready to take responsibility for quality (Golhar et al., 1997). Education and training, supportive management, self-confidence and recognition enhance employee empowerment (Scott et al., 2003). The implementation of quality management should increase the level of trust amongst the employees which inspires a sense of ownership and shared responsibility, and nurtures a willingness to change (Ghobadian and Gallear, 2001).
Employee participation in quality improvement must be recognised, supported and acknowledged (Milakovich, 1990). Without a change in management evaluation and reward policy to emphasise the achievement of quality objectives, quality management cannot be taken seriously (Glover, 1993). The benefits of quality management must be visible to employees in order for it to succeed and become sustainable. A formal reward and recognition system that supports teamwork and links quality and higher performance with pay, encourages and motivates employees to achieve the desired performance (Wilkinson, 2004). Recognition and expressions of appreciation by managers to employees to acknowledge achievement of quality improvement goals enhance employees’ involvement in quality management activities and commitment to quality improvement (Kassicieh and Yourstone, 1998). Recognition also reinforces desired behaviours, builds self-esteem, nurtures trust and respect, and renews enthusiasm.

5.6 Customer management

Customer focus is the foundation of the quality management philosophy. In fact, quality management cannot exist without a strong customer focus. Customer management refers to an organisation’s commitment to identify and meet customer needs, preferences and expectations. Systems and processes must be in place to identify customer needs, translate these needs into appropriate organisational requirements and satisfy them. Quality function deployment (QFD) technique can be applied for translating customer demands – ‘what’ - into quality characteristics – ‘how’ (Akao, 1990).

The ultimate measure of an organisation’s performance is customer satisfaction, (Kanji and Asher, 1993). For organisation to remain in business it is important to keep customers satisfied all the time. While satisfied customers may tell only four or five people about their experience, dissatisfied customers will tell 20 people (Gemme, 1997). Therefore, it is very important to find customer satisfaction and customer perception of quality. The insights gained can clearly help the organisation improve quality.

5.7 Supplier management

Organisations depend on their suppliers providing the material and services required for producing products and services (Hoyle, 2006). Suppliers can make a significant contribution to the achievement of quality through supplying high quality and defect free materials. It is important to emphasise quality when selecting suppliers. Managers must find methods of enhancing the ability of suppliers to continually improve the quality of their materials and products (Lighter and Fair, 2004). They should encourage their suppliers to initiate total quality by providing training services. Supplier quality management emphasises quality rather than price, reliance on supplier process control, and a strong interdependence between purchaser and provider (Benson et al., 1991; Flynn et al., 1995; Ahire and Golhar, 1996). Effective supplier management reduces inventory and waste in the supply chain (Kaynak, 2003).

Collaboration with suppliers is a key quality management practice (Kaynak and Hartley, 2008). Organisations should develop a long term cooperative partnership with their suppliers (Thornber, 1992). Long-term partnerships with suppliers help both parties to solve quality problems. Regular supplier evaluations help organisations to share...
information and improve mutual understanding. Measuring supplier performance and providing feedback improves supplier performance (Krause, 1997).

5.8 Resource management

Allocation of resources (i.e., human, equipment, and material) is necessary for delivering desired healthcare services to meet customer needs. Managers are responsible to provide appropriate resources to make the implementation of quality management successful. An effective management of resources has major effects on the success of quality improvement initiatives. Good resource management programmes enhance efficiencies, improve safety, and reduce errors.

The effectiveness of quality management arises from top management efforts towards the creation of supportive organisational structures and systems to manage the organisation’s quality journey and facilitate the implementation of quality management strategy across departments (Baidoun, 2003; Shea and Howell, 1998; Waldman and Gopalakrishnan, 1996).

5.9 Knowledge management

Today’s business environment is characterised by change. In this climate, actions must be anticipatory, adaptive and based on a faster cycle of knowledge creation. Quality information is a critical success factor in the quality of management. The collection, analysis and use of accurate, timely, and relevant data are necessary to support decision-making at all levels of the organisation. Effective information sharing among suppliers, partners, employees, and customers improves the coordination and cooperation among various stakeholders.

Information technology can provide strong support for quality management implementation (Rivers and Bae, 1999). An effective information system promotes quality through identifying problem areas, highlighting basic causes and establishing monitoring procedures (Griffith et al., 1994; Joss and Kogan, 1995). It allows the sharing of best practices among departments and across organisations and enables the widespread automated collection of data to support quality improvement efforts (Dewhurst et al., 2003; Ransom et al., 2005).

5.10 Process management

Emphasis should be placed on improving the processes rather than on blaming employees (Deming, 1986). Therefore, quality must be designed into the processes. A process is a collection of activities that transforms inputs into an output (product or service) that is of value to the customer [Hammer and Champy, (2001), p.38]. A variety of techniques can be utilised to execute process design, process control and process improvement. Processes should be defined and designed with the aim of meeting functional requirements and customer expectations. Organisational operations should be standardised to ensure the reliability of outcomes. The standardisation of operations helps an organisation to control its systems and processes (Shea and Howell, 1998).

Process control monitors processes to maintain stability and consistent performance. Statistical process control tools help to maintain consistency of process activities and
output, and help control processes. In implementing quality management, the development of procedures and documentation are vital for control and improvement (Francois et al., 1997). Precisely defining and documenting procedures, guidelines and protocols minimise the likelihood of operator error.

Continually improving processes as a strategic priority needs to be part of all operations and of all employees’ activities in an organisation. Continuous improvement requires the commitment of all employees with an emphasis on teamwork and management by facts (Dale et al., 2001; McAdam and Kelly, 2002). Quality improvement teams are necessary for accomplishing continuous quality improvement.

There must be an emphasis on measurement and evaluation to continually monitor the progress of the quality management implementation to assure that it is fully institutionalised throughout the organisation. Defining performance indicators, management reviews, quality audits and corrective actions are the major factors sustaining a quality management system. Regular feedback will help to stimulate further improvement and improve communication (Dale, 2003).

Systematic self-assessment of an organisation’s activities and results against an excellence model such as SCQM as a reference provides information on its strengths and areas for further improvement, and facilitates the organisational learning process.

5.11 Employee results

The employee results category examines what the organisation is achieving in relation to internal customers (employees). Employee results category includes employee quality of working life, employee satisfaction, and employee commitment.

Employees’ quality of working life directly affects their satisfaction and their ability to serve customers. The sustained profitability of an organisation depends on its workforce satisfaction. Working on quality management should lead to an increase in employee satisfaction and morale. Satisfied employees are related to desirable organisational performance. Employee commitment is a valuable asset in an organisation. Research has shown that increased commitment improves employee job satisfaction, motivation, performance and creativeness, and reduces absenteeism and turnover (Karsh et al., 2005; Xiong Chen and Francesco, 2003).

5.12 Customer results

The customer results category examines what the organisation is achieving in relation to its external customers. Customer results category includes service quality, customer satisfaction and customer loyalty.

Service quality involves a comparison of what customers feel the service should be (expectation) with their judgement of the service that they received (perception). Service quality can be used in evaluating organisational performance. Customer satisfaction assessment is important as a mechanism for quality assurance to ensure standards of healthcare are achieved and maintained. Customer loyalty shows the tendency of a customer to choose one company or product/service over another for a particular need. To build a loyal customer, SCQM emphasises improving services quality and customer satisfaction.
5.13 Organisation results

The organisation results category examines what the organisation is achieving in relation to its planned clinical, operational and financial performances. Clinical performance appraisal refers to measuring organisational performance against clinical standards or indicators such as mortality, medication errors, blood infections and complications rates. Operational performance appraisal measures the performance of the organisation against productivity indicators such as bed turnover rate in a hospital. Financial performance appraisal measures the performance of an organisation in monetary terms such as profit and loss, and return on capital employed.

5.14 Supplier results

The supplier results category examines what the organisation is achieving in relation to its suppliers. Supplier results category includes cooperative long-term partnership, supplier satisfaction and supplier commitment.

A good win-win relationship between an organisation and its supplier can result in a long-term cooperative partnership. Improving relationship between an organisation and its supplier can result in a better supplier satisfaction. Cooperative long-term partnership and supplier satisfaction result in supplier commitment to maintaining stable relationships with the organisation. Consequently, the organisation will have high quality resources or services required for providing healthcare services.

5.15 Society results

The society results category examines what the organisation is achieving in relation to local, national and international societies. Society results category includes corporate social responsibility, society satisfaction and enhancement of the organisation’s image.

The society results category examines what the organisation is achieving in relation to local, national and international societies. Corporate social responsibility (CSR) shows the responsibilities of an organisation towards its societies (local, national and international societies). Social and environmental concerns should be incorporated in an organisations’ mission, goals, objectives and actions. Organisations should satisfy the needs and the expectations of their community at large. Improving organisational CSR results in better society satisfaction. Improving the quality of products and services promotes the image and reputation of the organisation and enhances its competitive edge.

6 Conclusions and implications for management

This study sets out to introduce and develop a model of quality management for healthcare organisations. A Delphi method was used to identify the constructs of quality management for healthcare organisations. This study supports the appropriateness of the Delphi method in developing a theory. The findings of this study can help researchers to identify important components to include in a quality management system.

A quality management model called SCQM was introduced, informed by the results of the Delphi method. SCQM combines the principles of the quality management with strategic management and project management. It includes creating the organisation’s
long-range quality goals and objectives related to employees, customers, suppliers, society and organisation, developing strategies and action plans to achieve these objectives, adopting cultural change, and then allocating resources to implement the action plans. The ultimate goal of a SCQM programme is to satisfy not only the customers but also the employees, partners and suppliers.

From a practical point of view, the findings provide healthcare managers with a practical understanding in the area of quality management. Researchers will be able to use these research results for developing quality management theory.

7 Limitations and implications for further research

The study developed a conceptual framework of quality management that contributes to the healthcare context, particularly with the absence of any implementation framework. The model presented in this paper requires further validation to confirm its applicability and effectiveness.

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References


Towards a theory of quality management


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