Quality Management System: A 90-day innovation cycle

First literature review

Supporting better quality health and social care for everyone in Scotland
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Questions informing the first literature review

- What are the frameworks out there? How do they work and what are their components?
- How do the frameworks compare? Are there any gaps in understanding?
- What can be learned from these frameworks about an effective approach to strategic quality management in health and social care?

Key findings

- There are three major quality management frameworks or approaches that relate to the process of adopting the core principles of total quality management, namely: the ISO 9001 quality standard, the Malcolm Baldrige National Quality Award (MBNQA), and the European Quality Award (EQA).
- There are also a number of individual models proposed in the literature to enhance the application of total quality management principles such as the “deep quality concept” model. However, these models have not been validated in practice.
- There is no holistic or integrated framework for quality management and no standard approach for successful implementation.
- The dominant approaches or models overlap, however the MBNQA and EQA criteria are farther-reaching and broader than the ISO 9001 requirements.
- The ISO 9001 quality standard is viewed as falling short of total or strategic quality management in terms of delivering continuous improvement in value to customers and overall performance.
- The emphasis of ISO 9001 in addressing process control issues is much stronger than the award criteria, while the MBNQA and EQA emphasise that inspection and testing be replaced by prevention in demonstrating excellence in quality.
- A number of models have been proposed for addressing gaps in implementation strategy for quality management; these relate to issues such as achieving knowledge formalisation for transparency, and developing capability for implementation particularly in relation to leadership.
- A lack of development of quality management is suggested in relation to broadening considerations to other relevant research and concepts such as knowledge management.
Defining quality management and the core components

There are a number of terms used interchangeably to describe quality management, including Continuous Quality Improvement (CQI), Strategic Quality Management (SQM) or Total Quality Management (TQM). The term TQM is considered to encapsulate the broadest principles of quality management. TQM is frequently described in the literature as a diffuse concept, with 73 different definitions being identified.

TQM is an integrated system of principles, methods and best practices that provide a framework for organisations. The TQM core concepts are based on the teachings of Drucker, Juran, Deming, Ishikawa, Crosby, Feigenbaum and other experts who have studied, practiced and tried to refine the process of quality management:

- customer focus
- leadership
- continuous improvement
- strategic quality planning
- design quality
- speed and prevention
- people participation and partnership,
- fact-based management.

Major frameworks and their principles/components

There are also a number of frameworks or models relating to the process of achieving quality management. Three major types are described in the literature:

- standards-based approaches
- quality award approaches, and
- individual developed models.

Standards-based frameworks

The perspective from a review of the ISO standard is that implementing this alone does not allow companies to gain competitive advantages. ISO could be the starting point for TQM implementation but is not the whole solution. The latest version named ISO 9001 standardises processes and develops procedures by examining processes and identifying discrepancies between what is actually done and what should be done. An article by Ozturk and Swiss considers how the standard was implemented in Turkish hospitals. It compares nine hospitals with ISO 9001 certification with nine similar hospitals without. Other articles have considered the use of ISO 9001 in other settings. Curkovic and Pagell, 1999, is an article about the different views on ISO 9000: a tool to give competitive advantage or a paper-driven process of limited value. An article by Martínez-Costa et al compares ISO 9000: 1994 with ISO 9000: 2000 certified Spanish industrial companies to see differences in performance. They found ISO 9000: 2000 certified companies did not perform any better than 1994 or non-certified companies but they applied TQM at a higher level.

Singels et al, 2001, also investigated if ISO 9000 certification improves performance and they looked to see if other factors could explain performance not just ISO 9000. The article by Corbett et al is about financial performance of manufacturing companies that gained ISO 9000 certification compared to firms that did not. They found ISO 9000 certified companies performed better. Najmi and Kehoe, 2000, developed a framework, based on surveys of over 200 industrial companies (including 18 detailed case studies), of how to move beyond ISO 9000 to deliver quality.
Poksinska et al, 2006, reports on three case studies about small organisations that implemented ISO 9000. They found that a Quality Management System (QMS) is determined by organisational context and how it’s implemented not by the requirements of ISO 9000. An article by Sun et al investigates trends over a 10-year period in how European companies planned to implement ISO 9000 and TQM. They found that more companies gained ISO 9000 certificates than progressed to TQM. Terziovski et al, 2003, investigates how manager’s motives to get ISO 9000 certification affect the performance of the organisation. They found a positive relationship between organisations that willingly and positively pursue certification with improved performance. Being customer focused was found to contribute the most to improved performance.

Award-based frameworks

A number of quality award approaches to quality management have been developed. The following are the main awards:

- **Malcolm Baldrige Award** – a national award which is used as a basis for a number of regional awards in the USA (described by Foster et al, 2007), and
- **European Quality Management Award** – an international award (described by Nabitz et al, 2000, and Verno et al, 2007).

**Malcolm Baldrige National Quality Award (MBNQA)**

The MBNQA was established in the USA in 1988 following the introduction of the Malcolm Baldrige National Improvement Act of 1987. The award is designed to improve the quality and productivity of organisations in the USA by establishing guidelines and criteria against which organisations can measure themselves. Healthcare organisations were included in 1999 and the first healthcare award given in 2002. By the end of 2005, 116 healthcare organisations had applied for the award and five had received an award. Table 1 of the article summarises the award criteria for healthcare.

Organisations that apply are judged on seven criteria:

- leadership
- strategic planning
- customer and market focus
- measurement, analysis and knowledge management
- human resource focus
- process management, and
- results.

**European Quality Award (EQA)**

The EFQM approach was initiated in 1988 by the European Commission and 14 European organisations (such as BT, Volkswagen and Philips). The EFQM model has parallels to the Baldrige Award as well as other national awards (like the Australian and the South African Quality Award as well as the Deming Award in Japan). Whereas the Baldrige award has seven criteria, the EQA award has nine:

- leadership
- policy and strategy
- people (employee) management
- resources
- processes
- customer satisfaction
- people (employee) satisfaction
- impact on society, and
- business results.
Vernero et al, 2007\textsuperscript{13} reports on the experience of managers experience of using EFQM in an Italian hospital. The nine criteria for EQA can be split into two groups, five of the criteria are enablers and four are results. The enabler criteria describe how things are done in an organisation whilst results criteria describe what is achieved by the enablers. The enabler criteria are leadership, policy and strategy, people, partnerships and resources, and processes. The results criteria are customers, people, society, and key performance.\textsuperscript{13} Vernero et al, 2007\textsuperscript{13} describe that healthcare organisations in the Netherlands, Germany, UK and Spain were the first in Europe to use EQA on a wide scale.

Comparison of frameworks: ISO standard, MBNQA and EQA

Thus, the MBNQA and EQA criteria are farther reaching and broader than the ISO 9001 requirements according to a comparative analysis by Tummala and Tang (1996)\textsuperscript{14}. Also, the ISO 9001 quality standard is viewed as falling short of total or strategic quality management in terms of delivering continuous improvement in value to customers and overall performance. However, the emphasis of ISO 9001 in addressing process control issues is much stronger than the award criteria, while the MBNQA and EQA emphasise that inspection and testing be replaced by prevention in demonstrating excellence in quality.

The president of the Registrar Accreditation Board (RAB), has explained that neither set of criteria alone will assure total quality and that the requirements of each should be seen as complementary. The key differences in emphasis and strength are described as follows.

- The ISO standards are generic contractual quality assurance standards representing the minimum requirements for an effective quality system to ensure that the product or service consistently meets customer requirements. Consequently, they are thought of as being the lowest standard of an effective quality system. From the perspective of Juran, they do not require any evidence of a satisfactory track record of performance – for example in product quality or delivery. Similarly, human resource development and management, and strategic quality planning are not covered at all in ISO 9001 requirements.

- Both the MBNQA and EQA emphasise competitiveness in relation to delivery of ever improving value to customers and improvement of the company’s overall operational performance. Whereas, the ISO focuses on establishing a documented quality system.

- ISO 9001 gives considerable importance to the role of inspection and testing. On the other hand, the MBNQA and EQA emphasise that inspection and testing be replaced by prevention in demonstrating excellence in quality.

- People participation and partnership, and strategic quality planning are not considered at all in ISO 9001 requirements, whereas they are crucial to implementing quality improvement strategies to satisfy the MBNQA and EQA criteria.

- Continuous improvement, plays a central role in planning and implementing quality improvement efforts to satisfy the MBNQA and EQA criteria, whereas it is not an explicit requirement of ISO 9001.

Individual developed frameworks

A number of individually developed models are outlined in the literature that relate to considerations of transferability or addressing particular gaps in relation to how quality management can be achieved. There are a number of articles considering how quality management should be adopted in developing countries where there is little history of application such as in the Palestinian context\textsuperscript{15} and Malaysian Industry\textsuperscript{16}. There have also been efforts to develop a framework for transferring TQM to the context of education\textsuperscript{17}. There is also consideration in the literature in relation to how TQM translates to managing quality in service organisations\textsuperscript{18}.

From a review of the quality management literature, this study proposes a conceptual model relevant to service organisations consisting of 12 dimensions:
The rationale for developing this model relates to the unaddressed issues of transferability of quality management dimensions from manufacturing to services and the absence of a holistic framework.

Furthermore, the author has considered how these dimensions relate to those that have been identified as relevant to quality management as it was originally conceived from the perspective of manufacturing. These dimensions can be broadly grouped under three categories: dimensions seen to be generic to both sectors; those that are common to both but not addressed in relation to manufacturing such as social responsibility and union intervention recognised; and factors unique to a service context such as service culture.

A quality management model based on a “deep quality concept” has been developed to address the perceived gap in relation to the role of knowledge. The rationale for this being that tacit knowledge has a key role in determining quality performance. The framework considers dimensions of quality management in relation to knowledge availability and reliability, instead of only data and information reliability. Situations in which knowledge that is related to people is not available, sufficient or reliable. The authors believe that a lack of consideration of knowledge related to people that may not be available or reliable is a consequence of the models or frameworks being based predominately on Taylorian philosophy of manufacturing. According to Peklenik (1995), the basic presumptions of the Taylorian philosophy of manufacturing were:

- determinism of operations
- predictable behaviour of the system, and
- a priori information which is reliable, complete and accurate.

The authors also outline how there is lack of a generalised model that incorporates an integrated perspective of quality management dimensions and which includes consideration of the role of knowledge formalisation. They propose a deep quality management (DWM) model with the following core concepts:

- standardisation of domain concepts
- processes specifications
- knowledge specifications related to processes
- data on individual educational history, knowledge and background
- expertly designed databases and Management Information System (MIS)
- systematic recording of relevant data and information
- knowledge synthesis and representation
- knowledge bases and repositories
- involvement of people and teamwork, and
- fair and motivating managerial mechanisms.
Implementation of quality management frameworks

Despite there being a number of frameworks, there is no standard approach for how they can be successfully implemented. Furthermore, implementation of quality management in the healthcare...
context is viewed as having limited success. Successful quality management projects tend to be limited to individual organisations or departments or in a specific area of organisational performance. Øvretveit (2000) analysed all European TQM implementations in the healthcare sector concluding that only few small-scale efforts have had great success. Mosadeghrad (2013) found three categories of failures from a review of implementation-related literature relevant to healthcare that included inappropriate environment for TQM implementation. According to Mosadeghrad (2013), the most inappropriate environment is where there is a lack of supportive leadership. The author suggest that “complementary management theories” are needed to guide TQM implementation. The application of hard factors of TQM without addressing structural issues and soft factors is also described as a cause of implementation failure.

A review of leadership difficulties in relation to implementing quality management in healthcare suggests that TQM implementation needs “monolithic” visionary leadership, as described by Deming. One recognised category of a lack of leadership is a lack of senior management involvement and commitment. The authors propose two other categories of causes, namely “combined leadership” and “political leadership”. The former is described as being typical of large healthcare organisations with many departments and senior managers who need to be aligned and aware of a sole TQM leadership. The second category is the effect of political influence which is particular to public healthcare. This political influence can hinder leadership required for the successful implementation of TQM.

Nasim et al, 2014 propose a conceptual framework for quality management implementation that addresses the gap of implementation capability. Their work attempts to answer a number of questions in relation to developing implementation capability: the role of (i) human resource practices, (ii) management commitment and (iii) organisational support. Their resulting integrated framework for TQM implementation capability, shown in Figure 2, focusses on the soft aspects of TQM and how these are interrelated.

Figure 2. TQM implementation capability model (Nasim et al 2014, p.1400)

The framework includes integrated relationships based on several constituent models, that is, management commitment, effective communication, person–environment fit and organisational support.
In relation to management commitment, this is viewed as being achieved through leadership to ensure product and process conformance, management by process, face-based management, training and team work. Furthermore, the achievement of management commitment is then seen as being able to influence job satisfaction, a learning culture and behavioural change. If teams and managers communicate with each other on different issues, the capability to successfully implement TQM should be enhanced. The participation of employees has been reported as being proportionate with the level of commitment shown by the top management. Some soft factors such as team climate and team diversity can also affect team performance. Similarly, team autonomy can also play a crucial role in minimising complexity in team formation. All these factors are viewed as capable of being optimised for results through the active involvement and commitment of top management.
References
