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Total quality management in strategy and operations: dynamic grounded models

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Keywords

Total quality management, Corporate strategy, Operations management, Research methods

Abstract

The aim of this paper is to explore and represent the dynamic relationship between total quality management (TQM), corporate strategy and resultant business operations. In particular, the paper seeks to determine the impact of TQM at the strategic level and how business operations are consequently developed and deployed. These issues are of interest to managers in organisations who want to move their TQM programmes beyond incremental operational improvements and to use TQM to influence, first, the strategy process and, second, business operations. Using an inductive grounded theory research methodology, the paper describes the development of a series of grounded models, which show the dynamic interaction between TQM, strategy and operations. It is concluded that the models represent a suitable framework for further in-depth case-based research in the area of TQM, strategy and business operations.

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Introduction

Strategic quality management (SQM) is not new; the term and concept discussed by Garvin (1988) led to the strategic approach to quality as the fourth era of quality after: inspection, statistical quality control, and quality assurance. However, research (Mehra *et al.*, 2001; Brown, 1998) into the relationship of total quality management (TQM) and strategy has shown that the relationship between TQM, strategy and resultant operations is not well documented in the literature and confusing to many managers involved in organisational improvement. Kaye and Dyson (1995) found that continuous improvement did not permeate the strategic process in the majority of cases in their research. There was a lack of focus on strategic goals and, where there were signs of data collection, these were not systematically linked to improvement strategies. Wilcox (1994) found that TQM was perceived as a second- or third-order strategy. Although SQM has existed for some time, companies are still missing the full potential of TQM by failing to link it directly to the corporate strategy and the development of resultant operational plans as opposed to viewing TQM solely from an operational perspective (Lau and Anderson, 1998; Kanji *et al.*, 1992).

Thus many questions and issues remain. For example, as shown by Ghobadian and Woo (1996), existing TQM models, such as the business excellence model (BEM) and Baldrige model, do not adequately represent the dynamics of TQM, being more suited to "static" audits. How can models be developed which show both the dynamics and complexity of TQM applications in organisations? Furthermore, how can the potential of TQM as both a strategic and operational influence be realised, rather than being restricted to that of a low-level improvement tool?

The aim of this paper is to explore and represent the dynamic relationship between total quality management (TQM), corporate strategy and resultant business operations. In particular, the paper seeks to determine the

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impact of TQM at the strategic level and how business operations are consequently developed and deployed. The objectives are:

- to determine the nature and extent of the application of TQM at the strategic level and its impact; and
- to gain an understanding of the dynamics and complexity of the relationship between TQM, strategy and resultant business operations.

Following a short literature review, an inductive research methodology is described, followed by results and discussion. Finally there are some conclusions and suggestions for further research.

Development of strategic quality management

The strategic importance and role of TQM have been the subject of a series of conceptual studies, for example, Kanji *et al.* (1992) and Moreno-Luzon and Peris (1998). TQM provides the characteristics to respond to key economic trends and impacts and hence to form strategy (Tan *et al.*, 2000). Furthermore, TQM can be integrated with both traditional strategic planning and design and that of new strategic architecture such as emergent strategy (Hamel and Prahalad, 1994). In addition, McKechnie and Arnold (1994) and Harrington *et al.* (1999) point to the systems theory approach of TQM, which makes it inherently integrative and strategic. Thus, TQM philosophy, and its many in-company derivatives, have been placed at the centre of business decision making and influence as one or "the", strategic corporate issue (Voss, 1994).

The strategic integration of TQM, its focus and impact, has moved TQM beyond being an important element that needed to be co-ordinated solely at operational level, across all aspects and disciplines of an organisation (Harber *et al.*, 1993). Thus, TQM is referred to as "the single most important management tool" (Bergstrom, 1995), "a necessity for corporate survival" (Hongern and Xianwei, 1996) and "the main focus of corporate decision making" (Cook and Dave, 1997). This can be used to systematically influence an organisation at both strategic and operational levels in an integrated manner (Calingo, 1996). However, the inter-relationship of the complex issues and dynamics involved in TQM, strategy and the resultant development of business operations has not been examined empirically. As shown by Srinidhi (1998), the organisational complexity of these issues needs to be explained beyond that of broad philosophical studies.

TQM, strategy and resultant business operations

The majority of TQM literature and applications have been at an operational level (Moreno-Luzon and Peris, 1998). TQM at this organisational level, when properly implemented, has been shown to lead to improved operational performance and associated cultural change. Moreover, Lau and Anderson (1998) have shown that successful TQM programmes have led to many other related change initiatives being successfully implemented at operational level in organisations (for example, Six Sigma, empowered teams and Investors in People). However, Mehra *et al.* (2001) contend that these operational improvement efforts are often limited by a failure to recognise TQM as a strategic methodology; hence there is a lack of strategic drive and intent to focus and sustain the operational improvement efforts. Furthermore, the TQM-based operational improvements can become misaligned with the business strategy, creating an impression that the TQM efforts are misusing vital resources, when in reality TQM has not been applied and understood at both strategic and operational levels (Gundogan *et al.*, 1996). Many boards in organisations do not involve themselves in the strategic direction of quality. In many cases senior management have not yet been convinced of the success of TQM (Boaden, 1996). Even in the situation where there is a "strong strategic intent to promote quality" (Barclay, 1993), this intent is not realised at operational level due to poor communication and policy infrastructure. The underlying problems have been lack of TQM strategies to act as a foundation, and the continuing misperceptions of TQM solely as an operational

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tool by company leaders (Aravindan *et al.*, 1996).

Thus, there is evidence of a lack of in-depth study on the relationship between TQM and corporate strategy and subsequent business operations, beyond financially based impact measures (LaHay and Noble, 1998). Some go further by stating that due to a lack of conceptual understanding there is a need for construct development in the relationship between TQM, corporate strategy and resultant business operations.

Research methodology

A well developed inductive research method is that of grounded theory (Glaser and Strauss, 1967). In this methodology the researcher starts with minimalist a priori constructs and enquires deeply into organisational behaviour and events, gradually testing and forming theoretical constructs and grounded models (i.e. models that are based on theory and practice). Sitter *et al.* (1997) show that grounded theory uses abstract concepts to describe and analyse a series of general phenomena but based on practical experience. It is this link to practical experience that makes the method attractive to theory forming within the practice of TQM.

Carr and Littman (1990) refer to TQM's lack of theory and definition. To avoid TQM being perceived as an "atheoretical black box", a systematic and rigorous approach to TQM theory building must be adopted; hence the use of grounded theory. The approach focuses on the rich practitioner-based knowledge base of TQM. Sources of data can include TQM team meetings, interviews with TQM managers and TQM case studies (Perry and Coote, 1994). Strauss and Corbin (1990) show how such data can be gathered from "streams of research" (Carson and Coviello, 1996) and that data interpretation can then be guided by existing literature and theory. This is a highly recursive theory-building process (Wolfgramm *et al.*, 1998). Thus an opportunity exists for coherent TQM theories to be developed. In turn this theoretical development should lead to more informed organisational applications.

Van de Ven (1992) and Yin (1994) state that longitudinal case studies are especially appropriate within grounded theory methodology, where real life contexts are being investigated over a period of time. Glaser and Strauss' original work (1967) was a longitudinal or processual study. Carson and Coviello (1996) point out that longitudinal case studies have much to offer as part of grounded theory. The longitudinal case study must be highly recursive to ensure that theory is continuously tested as well as built (Wilson and Durant, 1994).

The research was broken down into three phases consistent with a processual approach to grounded theory (Strauss and Corbin, 1990). The first two phases were what Glaser and Strauss (1967) referred to as "identifying the key constructs" or issues. These provided a learning experience and developed a greater understanding of the key issues involved, which progressed into the third (refinement phase) and final phase, which was the longitudinal case study. Each phase flows into the other, the data and analysis becoming more detailed at each level through participant observation, semi-structured interviews and taped and coded transcripts. The data analysis followed a grounded theory approach (Glaser and Strauss, 1967) of continuously returning to the raw data, as the research progressed to review, and analyses the patterns that emerged and developed consistent with grounded theory. The methodology for these phases was as follows.

Phase 1

The first step was to become knowledgeable regarding the relationship between TQM, corporate strategy and operations in practice. To gain this perspective a sample of 19 companies, most recognised at a national or international level for their application of TQM, through the national quality award process using the business excellence model (EFQM, 2001), was selected. Semi-structured in-depth interviews were conducted with the quality managers (or those with responsibility for quality). Over a period of six months each manager was interviewed at least three times for two to three hours at a time. There were also many follow-up telephone and e-mail calls to

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the company. The managers were promised feedback reports for each company and overall feedback through the National Quality Centre. The researchers also have access to the BEM self-assessment documents of the organisations. This phase provided an exploratory study providing details of why and how TQM is used in a cross-section of manufacturing and service companies.

Phase 2

The second step in the methodology involved focusing on the complex dynamics uncovered in phase one with a more in-depth study, as suggested by Strauss and Corbin (1990). This was carried out by selecting four companies from phase one, which demonstrated the most developed use of TQM in relation to both strategy and operations. The managing directors (MDs) of the companies were interviewed to gain an accurate knowledge of the relationship between TQM, strategy and operations in practice and the dynamics involved in their inter-relationships. Once again, the organisations received detailed feedback from this phase.

Phase 3

The longitudinal case study

This third phase involved the case study of "Servcom", a large utility company. The early stages of this phase ran in parallel with Phases 1 and 2 of the research. The case study company had been researched for a period of three years (through a university/organisation learning partnership), as it introduced and implemented TQM. The university team involved two PhD students and three members of staff with expertise in TQM. The corresponding organisational team, called the "quality programmes group", had a senior manager and eight full-time TQM implementation staff. The grounded theory approach enabled both the university and the organisational teams to develop an action learning style in their working relationships. Data were gathered by participant observation, semi-structured interviews at all levels, focus groups, BEM self-assessments and analysis of organisational documentation.

It must be emphasised that all three phases of the research methodology contributed to building and refinement of the grounded theory models. All the cases contributed to the model-building process; however, no one organisation embodied all the elements of a given model, consistent with Strauss and Corbin (1990). Also, the longitudinal case study, in particular, added clarity and depth to the process but did not embody all elements of all the models. This is consistent with inductive grounded theory model building, where a summative conclusion is reached by comparing different sources of data (Carson and Coviello, (1996).

Results and discussion

The findings of the research are discussed first in relation to the initial model-building Phases 1 and 2, using the grounded theory methodology. The further refinement of these models is discussed in relation to the Phase 3 longitudinal case analysis, as suggested by Carson and Coviello (1996).

Grounded theory model building

In dynamic modeling of TQM the dynamics of TQM across the different levels of the organisation's activities should be represented, as pointed out by Gunasekaran (1998). These levels are strategic, tactical and operational. Existing quality models mainly focus on improvement at an operational level or a tactical level (strategy implementation), but not at a strategic level or on strategy-led operations (Ghobadian and Woo, 1996).

Forrester (1965) developed the concept of system dynamics in organisations. In this approach organisational actions are considered as a series of flows, for example, money, order, material, personnel and capital equipment. The organisational flow of information is seen as an integrating mechanism. These flows are defined as the dynamics of an organisation. Arbnor and Bjerke (1997) have widened the idea of systems dynamics in organisations by simply referring to dynamic models of organisations, which are characterised by having a time dimension and as being applicable to structures, processes or change initiatives within the organisation and its environs. Bauer *et al.* (2001) conclude that the use of dynamic models for TQM, which borrows from the systems approach in

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organisations, is essential for an "appreciation of a complex, dynamic system", which "enables managers in turbulent days to manage in a comprehensive way and to decide and act for long-lasting success". Bauer *et al.* (2001) conclude that Forrester's (1965) broad concept of linking concepts from the development of the human relations movement with dynamic enterprise models is consistent with developing dynamic models of TQM in organisations.

The main elements of dynamic modeling are time, recursive behaviour and complex changes relating to all aspects of an organisation (Bauer *et al.*, 2001). The time factor includes longitudinal development, current changes and anticipated future direction. Recursive behaviour includes non-sequential behaviour with either forward- or backward-facing linkages. Complex change goes beyond cause and effect polarisation and includes phenomena that do not follow anticipated development with time (McCabe, 2000).

In summary, current quality models have beneficial applications in organisations. However, they do not adequately address the strategic dynamic issues present (or are "sketchy" at best). Thus, there is a need for evaluative models of TQM, which address the dynamic effects of TQM at strategic, tactical and operational levels.

The strategic impact and operational impact of TQM – Phases 1 and 2

The findings are discussed in relation to each of the five grounded theory models constructed, which together constitute a framework for analysing TQM dynamics and complexity at strategic and operational levels:

1 TQM key points of application model

The key points of TQM application within the organisations were represented in the model shown in Figure 1. The model was developed over a period of time consistent with grounded theory. It begins with the corporate vision and mission and then progresses into corporate objectives. These were found to be the key starting-points for TQM being applied in a top-down organisational approach, consistent with Boaden (1996). It was found that TQM can have an organisational impact by creating a focus on the customer at a strategic level, which also influenced and shaped the strategic formulation (Figure 1). The strategic formulation may then be influenced, as shown, by proactive change. In this form TQM can act as a catalyst, rather than as a direct driver, to transform the direction of the strategy and its emphasis. Other philosophies and techniques were used and adapted to develop new ideas and approaches and to boost enthusiasm for change in the organisations, all of which were under the TQM umbrella, as stated earlier. Thus, TQM programmes in the organisations were found to be in a state of recycling or the constant rejuvenation to renew interest and keep momentum going. Therefore, TQM application as a "catalyst" (Figure 1) was found to be a constant element with new developments needed over time. Furthermore, TQM had a dynamic cyclical life, constantly changing within the cases. The next element in Figure 1 is that of strategic formulation. Within this element all the necessary information and strategic analysis were gathered and the optimum corporate strategy was determined. Within this wide range of issues was TQM ("TQM one issue" – Figure 1). However, it was only one amongst many which are given consideration and assisted in data gathering during the process of strategic formulation. This leads naturally in the fashion of delegation to the operational aspect. The operational strategic divide, which had emerged, is located at this interface (Figure 1).

The operational element of TQM in the organisations (Figure 1) achieves the strategic vision and objectives by fulfilling the strategy through actionable plans and objectives, disseminated through various departments and strategic business units (SBUs). It is at this level that the various tools and techniques of TQM were used (Figure 1).

Certain key issues reappeared in each interview, building up a consistent picture and trend. The issue of the strategic-operational divide appeared and was referred to as a "disjoint". This characteristic divide became a recurring theme during the remaining research and was represented in Figure 1 as the "tactical" divider.

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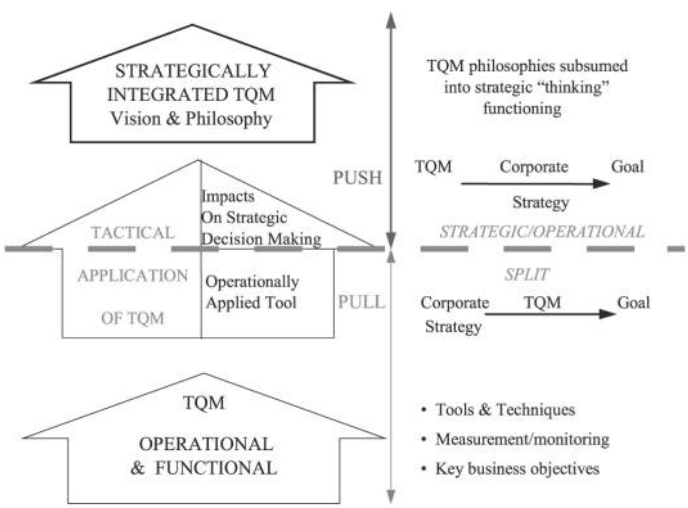
Figure 1 Key points of TQM application

2 The strategic application of TQM model

By using a hierarchical structure, which is supported by the bureaucratic approach evidenced by the grounded theory analysis, a model was developed that places the strategic level at the top and extends down to the operational/functional level at the bottom, as shown in Figure 2. The highest level of TQM application was at the strategic level. In this situation senior management commitment in the organisation was given and TQM was fully understood by the management teams in its philosophical role as opposed to solely that of an operational tool. Thus, it has a major impact on strategic thinking, with resultant operations consistently applied throughout the organisation. This scenario is represented in the top third of the model (Figure 2).

The model is divided horizontally by a line representing the strategic-operational split or "fuzzy line", as stated by one MD participating in the research. This divide was found to separate the "push" or catalytical (pre-strategic) TQM influence from the "pull" (post-strategic) TQM influence, as indicated in the diagram. Below this divide are found the tools, techniques, measurement, and monitoring applications of TQM at the operational level. This divide represented the tactical interface between the strategic and operational functions of TQM in the organisations.

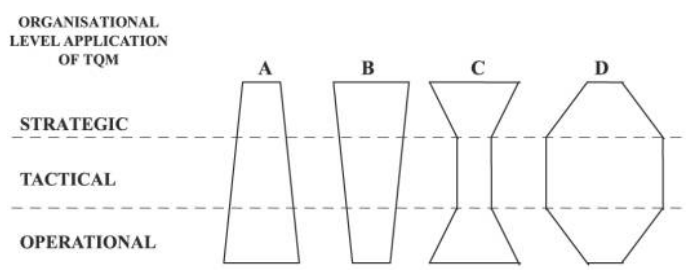
Figure 2 The strategic application of TQM



3 TQM organisational profiles model

Four TQM organisational profiles were developed from the grounded theory analysis to complement the perspectives of the research shown in Figures 1 and 2. Thus Figure 3 shows TQM with regard to organisational profiles

Figure 3 TQM organisational profiles



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rather than to how TQM is applied. The profiles are listed as A, B, C and D, as shown.

These profiles reflect the importance that was assigned to TQM at each organisational level (from senior management to employee). The four distinct profiles were as follows:

(A) *Lack of senior management involvement*. In this profile TQM is not considered as a strategic issue, rather it is delegated to middle management at the tactical level and has its greatest application and impact at the operational level (compare Figure 2).

(B) *Lack of operational impact*. In this profile, senior managers were aware of TQM's strategic impact. However, there was a lack of resultant operational programmes and measures.

(C) *Ineffective tactical translation of strategic and operational goals*. In this profile senior management and employees were committed to TQM-based change and have benefited from its impact. However, there were difficulties, which limited the change programmes. These included poor communications and middle management's negative reaction to change.

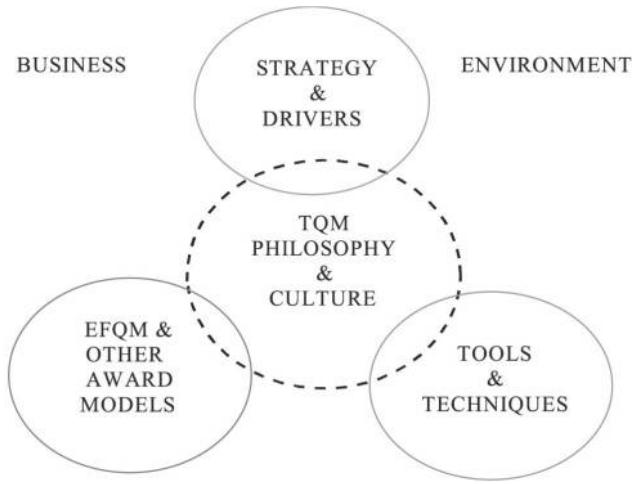
(D) *Middle management isolation in driving TQM*. In this profile, motivated middle management were hampered in their efforts to create impacts from TQM by non-committed senior managers. This lack of commitment resulted in a lack of resources (time and finance for improvement projects), which ultimately limited operational and strategic impacts.

4 The TQM organisational environment model

The TQM environment model (Figure 4) shows four key TQM elements involved in relating TQM to an organisational setting. The findings from this model can be related to Models 1-3 to show the missing elements of TQM in organisational applications, which hinder TQM dynamics.

The grounded theory analysis revealed that the "tools and techniques" (Figure 4) element of the model was mainly applied at operational level, including the BEM model. This reflected the earlier discussion on the marked strategic-operational divide (Figure 2). However, some aspects of the BEM were used in the "EFQM and other awards models" element of Figure 4. In this situation the BEM was used in line with "strategic formulation", as discussed in Figure 1 in relation to the initial application of TQM. The "strategy and drivers" element reflected the incorporation of TQM as a methodology for influencing and developing vision, mission and customer focus (Figure 1). In this environment strategy-led operations were developed, leading to a more effective use of resources (e.g. internal benchmarking across the business units to establish linked strategic and operational performance measures).

Figure 4 The TQM environment



The "TQM philosophy and culture" element of Figure 4 relates to the founding principles and philosophical issues underpinning TQM approaches and the organisational culture to be engendered. Essentially these reflect the key principles used to base strategic decisions, such as employee welfare or customer loyalty. The research using grounded theory revealed that this element was affected by the strategic-operational divide. The TQM programmes in some cases reinforced this issue due to a lack of training and communications in TQM. Those organisations, which systematically used mixed management-employee quality improvement teams, company-wide TQM training, TQM-based appraisals and reward and recognition schemes, managed to create a TQM culture, which transcended this divide. This led to increased two-way communication

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and a more in-depth understanding of TQM beyond that of an operational tool.

5 The TQM lifecycle model

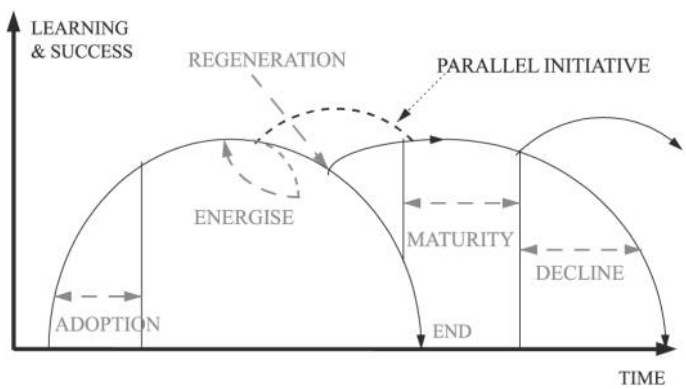
The "TQM lifecycle" model that has emerged from the grounded theory analysis, as shown in Figure 5, reveals a more dynamic and complex picture than the formulaic route to TQM, where, for example, ISO 9000 success would lead to TQM in a building-block approach (Dale and Lascelles, 1997).

It was found that the organisations in this research each have their own customised route to success and that they use various TQM-related tools, techniques and philosophies along the "quality journey" (Dale and Lascelles, 1997). Thus the sequence of implementation and the relative importance placed on them depend mainly on organisational circumstance and leadership. Therefore, there are many variations in this journey. Figure 5 shows the key stages that were found in the research. "Adoption" is a learning curve, beginning at the initial awareness of TQM and progressing through the structured learning and training about the particular method of achieving the organisation's quality-related goals. "Maturity" is the implementation and the improvement in knowledge and technique in its application.

The difference of the lifecycle model, compared with the Dale and Lascelles (1997) "levels of TQM adoption" model, is in its complexity. More than the current overall maturity of TQM can be considered. In addition, a range of initiatives that make up TQM can be simultaneously represented, which allows their co-ordination, impact on one another and individual level of maturity to be considered. In addition it articulates the lifecycle nature of all initiatives within the broad philosophy of TQM and can be used to provide multi-layered historical data on the progress of each initiative. With the lifecycle the learning curve drops off, as do interest and the ultimate bottom line impact of each tool and technique at some stage ("decline"). It is an inherent part of human nature and in particular due to the nature of TQM that retraining is necessary, as is interest in its implementation ("energise"). Here the initiatives needed to be continually "re-energised" through improvement, updating and retraining.

In some cases there was a need to "regenerate". This took the form of an aspect of TQM, not previously used, being adopted, which provided a new drive and perspective (e.g. a focus on measurement and Six Sigma or empowered teams). A number of the companies interviewed either considered TQM to have acted as a catalyst or had, over the years, a number of generations, under different names and focus. In this way TQM acted as a strategic catalyst on a number of occasions to impact both on culture and strategy in addition to operational aspects. New methods or tools were adopted and the learning curve began again. However, the "regeneration" stage was not always introduced after a successful application. In some cases the lack of success or indeed failure of an initiative necessitated a new approach (e.g. a move from functional quality improvement teams to that of cross-functional, process-based teams). The shape of the curve (Figure 5), with regard to the degree and speed of learning and the length of the periods of adoption, maturity and decline and the point of regeneration and re-energising, is company-specific. The "lifecycle" allows a range of the TQM-related initiatives being used in an organisation to be mapped longitudinally and in relation to one another.

Figure 5 The TQM lifecycle



Results and discussion – Phase 3

The Servcom case study

Servcom is a large, long established premier UK company that provides a product and service to approximately 650,000 domestic, commercial

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and industrial customers. The company has been through major changes in past years, including privatisation in the early 1990s. Since that time it has outsourced essential work to contractors and downsized; between 1992 and 1996 manpower levels fell by 34 per cent. In 2000 Servcom employed over 1,800 employees. In 2001 the organisation won the National Quality Award which is based on the BEM. This represented a key milestone on the organisation's quality journey (Dale and Lascelles, 1997) and for the university/organisation partnership team. Thus, the organisation was viewed as reaching a best practice status at the end of the formal learning partnership.

Although Servcom currently has the majority market share in its sector, in recent years there has been an increase in competition due to new entrants to the marketplace, the threat of substitutes and greater bargaining power on the part of the buyer (Porter, 1996). Servcom is being increasingly exposed to competition and potential buy-outs. The organisation has also encountered increased pressure through market forces to reduce its product/services costs to the customer.

The strategic dynamics of TQM within Servcom

The five models are used to collectively analyse the strategic dynamics of TQM with regard to the case of Servcom and to further refine the models. What follows is a discussion of the dynamics of each element of the models in the situation of Servcom. The order of the discussion of the models is the suggested order in systematically applying the five grounded theory models as a TQM dynamics framework in applying TQM within organisations.

Model 1: the TQM environment

It had been pre-determined by senior management that TQM philosophy and practice would be adopted to ensure that Servcom portrayed the correct corporate image to shareholders and "the city" and to its corporate peers. The views of shareholders and "the city" were inextricably linked to the share value of the company and, therefore, financial considerations; this was the primary basis for the instigation of TQM. Another reason for applying TQM was to create improvement through a supporting role at an operational level, which was primarily driven by comparisons with best practice. Therefore, TQM's adoption in the organisation, in relation to Figure 4, the environment model, was based on "strategic drivers".

None of the other elements of the TQM environment model was found to directly influence the initial acceptance of TQM. Other essential issues, such as philosophy and cultural aspects (Figure 4), were not considered by the organisation at this stage. Two decisions were made at this point, one that the most important factor was financial and second that a full knowledge and understanding of TQM was not needed for its introduction; external comparisons at a strategic level were considered sufficient. However, as the philosophical basis of TQM and company culture (Figure 4) was not considered at this initial stage, the fundamental strategic importance of TQM was marginalised. A failure to review this issue led to fundamental difficulties and a lack of consistency that appeared time and again within Servcom with regard to TQM. Thus, there is a need for organisations initially applying TQM to consider all the aspects shown in Figure 4 to avoid problems of understanding and acceptance later in the programme of change.

Model 2: the TQM lifecycle

The various initiatives in existence when TQM was adopted and the initiatives resulting from, and as part of, TQM were mapped on to the lifecycle model (Figure 5). The initiatives superimposed on the lifecycle model were placed on the labelled section which represents its "stage of life"; for example, business process reengineering (BPR) was in the "decline" stage, while ISO 9000 (and more latterly ISO 9000 : 2000) is in the "adoption" stage.

There was a direct correlation between the number and type of TQM activities under way and the necessity to use such activities to attain scores on the BEM model. This created an atmosphere of moving from one project to another, attaining certification or an award and then moving to the next, building up scores. This situation detracted from achieving a sound understanding, acceptance and appropriate use of the tools and techniques of TQM.

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BPR is used as an example. BPR in the organisation had reached the "decline" stage. The choice of regeneration or to energise has not been taken for BPR, primarily because evaluation of the effectiveness of BPR was never undertaken to determine its impact and level of success at a strategic and operational level. BPR in its current form has mainly been replaced by TQM and is reaching its conclusion in that the re-structuring and process changes are in place, although a re-assessment of those new structures and processes may be necessary in the future, leading to a possible "regeneration" of BPR. The preparation to submit for a quality award pulled together all the scores for practice experiences, strengths and areas for improvement within each of the organisation's business units, which had been using the BEM model in their own tailored form. Other examples are where TQM measurements have been "energised" by introducing Six Sigma measuring methods and for ISO 9000, where the ISO 9000 : 2000 standard has been applied.

Models 3 and 4: key points of TQM application and the TQM profile

The ultimate strategic driver, which was determined during the assessment of "the TQM environment", was financial (Figure 4). The securing of a corporate image that reflects Servcom's corporate peers and, therefore, a comparable share value is of key importance. Once this had been determined, the application of TQM was limited to supporting and improving the activities of operational units. The key point of TQM application (Figure 1) was as an "operational tool", resulting in a lack of strategically linked operational improvement. The level of corporate commitment was therefore limited. The bulk of work to apply TQM and related tools and techniques fell to lower level management and the employees. The "key strategic driver" that had the most influence was that of creating operational improvements and it was at this level that the most activity and commitment occurred, as reflected in the TQM Profile (Figure 3, profile A). With regard to the other "key points" (Figure 1), neither the "customer" nor "proactive change" were initially taken into consideration as a factor.

Model 5: the strategic application of TQM

The application of TQM was found to be an operational one, falling below the "tactical" level (Figure 2). TQM has not been led by any vision or philosophy. Thus, in the organisation, there was a lack of association with the corporate strategy with regard to TQM beyond determining that it should be introduced. It was initially applied as an operational ploy.

There was a clear strategic-operational divide (Figure 2), which expresses the extent of application of TQM, its strategic importance and the commitment given by senior management. Thus, a goal of the partnership was to change the current thinking of TQM and its strategic associations and resultant operations.

Conclusions and recommendations

The lessons that have been learned from this inductive grounded theory research provide impact for both managers and researchers. For managers and business leaders the new models provide a "real world" articulation of the strategic and operational dynamics of TQM. Critically, the models provide a method by which TQM can be strategically "mapped" on to the organisation's current strategic and operational activity. It also creates a mechanism through which TQM can be systematically considered from philosophical, strategic, tactical and operational perspectives. The grounded theory models also allow the historical, current and projected strategies of TQM to be "mapped". This approach results in scenarios being developed for alternative strategic, tactical and operational actions, providing powerful proactive and dynamic reactive strategies to be prepared. For researchers this research provides a new perspective and modelling for TQM, which questions the relatively static and linear nature of many of the established TQM models.

Adopting TQM is seen by some companies as a necessity, to ensure that they are perceived as being on a par with corporate peers in their adoption of leading edge business improvement issues. TQM's role within the organisation, its strategic and operational impact and its definition were not clearly articulated by either

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the quality managers or the managing directors. This lack of understanding regarding TQM and its relationship with corporate strategy and resultant operations results in TQM's benefits not being realised by senior management. For this reason TQM and its potential can be overlooked by senior management.

TQM is used primarily at the operational (staff) level and it decreases in importance and application at the tactical (middle management) and corporate (senior management) levels. TQM is not recognised at senior management level as a valuable source of business environment information; therefore TQM has a limited role in assisting in such corporate strategic processes as the identification and attainment of emergent corporate strategies. The alignment of TQM with corporate strategy and policies from the corporate through the tactical to the operational level has been applied to a limited extent. In most cases where TQM is used in such a manner the responsibility for its implementation and functioning has been delegated by senior managers to the tactical, middle management level.

This has created an operational-strategic divide that is bridged by a tactical function. The corporate strategy is translated at this tactical level to identify what must be achieved operationally to achieve the corporate strategy. TQM is perceived by all levels of staff and management as mainly an operational issue, with abilities only to impact on physical service and manufacturing processes and procedures. It is considered primarily a source of problem-solving tools and techniques used at the operational level. At the tactical level TQM activities throughout the organisation are co-ordinated and resources allocated. It is for this reason that TQM is primarily or in some cases exclusively used only at the operational level.

TQM enables the developing of strategic thinking due to its inter-disciplinary nature and market intelligence-gathering traits. For TQM to reach its potential it needs to be practised and managed by senior management and in particular managing directors, so that its abilities can be realised by them and extended to assist in providing information for the corporate decision-making process.

The models, which have emerged through this research, show a more dynamic and complex picture of TQM than that accepted by conventional theory. An important fact that the lifecycle highlights is that TQM is not sequential nor does it have a specific formulaic route. Each organisation plots its own customised route to success and will use various TQM-related tools, techniques and philosophies along the way. The sequence of their implementation and their relative importance depends mainly on organisational and cultural circumstances.

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