Self-assessment and Mini-TQM Framework for Malaysian SMEs

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Abstract
For SME companies committed to pursuing total quality, change is a way of business. This will include the change of people, process, product and their cultural needs. The aim of this paper is to present a practical means that can be used by Malaysian SME companies to improve their quality management, using quality award criteria and a business excellence approach. The approach, named the Mini-TQM Framework (MTF), is based on TQM principles, employed with basic quality improvement activities such as 5S and QCC. Development towards ISO 9001 certification also forms part of the framework. The MTF allows a company to develop its own quality journey more clearly, set own pace, and identify strengths and weaknesses for business improvement. A specially-developed MTF self-assessment approach is used, that allows a company to assess its own constraints and choose methods best suited for its business. Using the MTF, stakeholders and managers can establish strategies to help their organisation progress more readily through the difficult early stages of quality management implementation. A 'before-and-after' study of two manufacturing companies is outlined, and key results are provided. These suggest that the MTF approach is suitable for Malaysian SMEs to improve progressively on their quality journey. Finally, conclusions are drawn and suggestions made for further research and government policy in developing countries.

Keywords: Quality Framework, Self-assessment, SMEs, Malaysia
Introduction

For SME companies committed to pursuing total quality, change is a way of business. This will include the change of people, process, product and their cultural needs. Organisational change is indeed compulsory in implementing total quality and subsequently to continually maintain it. Therefore, embarking upon implementing and sustaining a TQM process requires change strategies and techniques that should be applied across the organisation. However, it is widely accepted that many Small and Medium Enterprises (SMEs) suffer both from limited managerial expertise and financial resources, such that many are unable to hire a consultant to assist their quality development.

In their previous articles based on empirical fieldwork (Ab Rahman & Tannock, 2002; Ab Rahman et al., 2003), the authors suggested that Malaysian SMEs require a simple and well-structured approach to develop quality management. From these studies, it was clear that many companies did not know how to start a quality journey. The main aim of this paper is to present such a practical approach, the Mini-TQM Framework (MTF) to be used by SMEs to improve quality management, using quality award criteria and a business excellence approach.

The MTF was designed as a guide or a ‘walking stick’ for Malaysian SME companies. The idea to establish the framework started from an understanding of the typical problems and constraints suffered by SMEs, in their quality management development. This is considered crucial for Malaysian SMEs, for whom a TQM framework must fit their characteristics and constraints (Yusof and Aspinwall, 2001). The authors’ fundamental objective was to set out an economical and simple approach, comprehensive of quality and business excellence initiatives for SMEs, including ISO 9001 certification.

Design and Validation of the MTF

In order to establish an appropriate framework, it was necessary to identify the quality initiatives already implemented and their benefits, investigate the barriers that may hinder the MTF implementation, identify basic quality activities which will support the MTF implementation process, study how SMEs can introduce and implement quality initiatives and what are the appropriate further initiatives for quality implementation, and finally, validate the suitability of the MTF for SME application. These objectives were achieved through a research programme, in which the authors contacted two case study companies (named here as Companies A and B) and four experts on Malaysian SMEs (two quality management experts and two government
officers) to obtain comments and advice on the design of the MTF Self-assessment questions and MTF implementation model. The entire MTF approach was designed to allow a company to scope and develop its own quality journey, especially in terms of the preparation and remedial action related to each quality activity and the expected results. However, the selection of initial quality initiatives is flexible, and will be largely dependent upon each company's business objectives, existing initiatives and capabilities.

The MTF Implementation Model

Figure 1 illustrates the MTF implementation model, shown as a flow diagram, for SMEs to design or improve their quality initiatives. It has two 'toolboxes', the ISO toolbox and the CI (Continuous Improvement) toolbox. The objective of the MTF implementation model is to provide a company with clear alternatives, to move to ISO 9001 certification, or establish other quality activities. The two toolboxes are considered exchangeable. Companies with limited capability seeking certification are recommended to consider the CI toolbox as a starting point. They can first establish basic quality improvement activities, and when they have the resources and capability, hire a consultant to develop more formal quality management processes. Meanwhile, SMEs with existing ISO certification can use the CI toolbox as their next focus, towards emphasising other quality improvement activities.

The initial toolbox activity should be an awareness programme. For an effective start, a SME must have company-wide quality awareness among staff. It is necessary to improve this quality awareness in order to increase employees' support. Quality training must be conducted to increase employees' awareness in quality requirements, before any further quality activities are launched. Hence, awareness was included in the first step of each toolbox. These activities were the initial focus and responsibility for the senior management level.

The CI toolbox basically acts as an introductory process for companies which are just starting out in business, or for those SMEs which have been in operation, but have not previously experienced the application of quality improvement ideas in the operation of their companies. The main intention of the CI toolbox is to introduce a very basic approach to TQM. This group of SMEs should develop a quality policy to be incorporated in the respective company's mission statement. The training programmes must be carefully planned and a budget for the training programmes made available - this can be expressed as a percentage of the payroll. For this purpose, an amount of 3-4 percent of the payroll is usual in the case study companies.
The next activity in the CI Toolbox is 5S, to place the focus on organising the workplace and on immediate waste-reduction activities, without complication. 5S can demonstrate rapid cost savings, improvements in efficiency and also stimulate interest for further quality improvement activities. It is a good introduction to team-based improvement, especially for SMEs, whose financial and resource constraints typically act to impede the whole improvement process. Properly facilitated teamwork helps create a quality culture and assists in employee development, training and empowerment. For the purpose of teamwork, training and employee development, QCC teams using 7QC tools with a basic kaizen approach are a good start for the SMEs. Other quality improvement initiatives including suggestion systems, zero defects, employee benefits, rewards and etc., can be planned later.

The ISO toolbox consists of the usual quality activities towards ISO 9001 certification. It is recommended to start with an ISO awareness programme, which includes training, followed by the preparation of documents, planning of activities and operations. Next, an internal quality audit is conducted in all areas of the company activities, to ensure that all activities are carried out in accordance with the applicable procedures and the requirements of the standard. Any non-compliance must be reported and corrective actions initiated.

A further recommendation is to include a 'loop' as an evaluation step in the implementation process. This implies that the process is one of never ending learning, and customer satisfaction, quality policies, benefits and work culture could also be assessed. The MTF implementation process would therefore acts as an introductory diagram. Once the SMEs are familiar with the quality initiative concepts and principles, and they have been certified to ISO or grown bigger and confident, the MTF Self-assessment can take over. The Self-assessment process and tool are described in the next section.
A **Self-assessment Tool** to Complement the **Framework**

An initial analysis and diagnosis of a company, using self-assessment as a formative tool, can help to map out a clear path towards TQM implementation, as well as allowing a company to discern its strengths and weaknesses clearly. Mann et al. (1998) suggested that the application of a self-assessment approach is the first step towards a company’s achievement of excellence. In addition, as proposed by Fuentes et al. (2000), the process of quality implementation requires a working structure that acts as a reference standard to guide and assess the processes implemented. Meanwhile, Hewitt (1997) and Wilkes & Dale (1998) pointed out that the European Foundation for Quality Management (EFQM) Model of Business Excellence does little to help SMEs in their business environment. These authors suggested that an appropriate self-assessment tool should be used before applying for an award. This is an argument towards establishing the MTF model, together with its self-assessment, to be used as a guide or a benchmark for interested SMEs aiming to win a quality award (e.g. a national quality award), as well as to achieve business excellence.

The aim of the MTF Self-assessment (see Appendix 1) was to provide a starting point for a company, in the process of understanding the needs of a quality culture and the development of quality management requirements. The assessment acts as an alternative means for a company intending to improve their quality development without adopting current TQM models. According to Khoo and Tan (2003), many business organisations nowadays are using self-assessment approaches to enhance their competitiveness in the global market. Hence, it is vital to include the right elements in the MTF Self-assessment.

In order to establish a credible basis for the MTF Self-assessment, the questions were developed based on the Malaysian Quality Management Excellence Award (QMEA) criteria, National Productivity Corporation 2003 criteria, as well as information from published material, such as the 2002 Malcolm Baldrige National Quality Award (MBNQA) criteria for performance excellence. Throughout the questionnaire construction, discussions were held with practitioners and experts in the field to check on the clarity of the questions, the appropriateness of the proposed scale, the indicators and the illustrations applied, as well as their overall presentation. All the assisting practitioners and experts were asked to act as assessors, answering all the questions and completing all the calculations. It was stressed by the experts that since many SME staff have a relatively low educational level, it was important to keep the questions as simple as possible. Respondents suggested that questions have to be asked in general and matched to the company’s capabilities; therefore, ‘if appropriate’ or ‘if applicable’ were added to some questions. As a second check, all the self-assessment questions were validated and enhanced again. Finally, all the experts agreed that it was, in general, a sensible and practical approach to assess a SME company. The questions were readily
understood; they were easy to use and were also illustrated with some interesting cartoons. A simple calculation process was used to calculate the scores, at the end of the questions.

The MTF Self-assessment does not require that all quality and excellence criteria should be assessed and all issues taken on board at the same time. Priorities will inevitably be dependent upon the company’s targets, resources and current problems. The self-assessment process can begin by reviewing the various options among the criteria provided, for example, starting with one of the QMEA criteria, perhaps the Top Management Leadership & Management Quality criterion, and subsequently followed by the other six criteria. It must be remembered that the various criteria may be applied only when they are needed, according to company’s requirements and capability, and need not be applied wholly. This approach allows a company to pace its own quality development and avoid unnecessary difficulties, such as being overwhelmed by the size of the entire task. It is believed that when Malaysian SMEs obtain positive outcomes at an early stage, it should help provide future motivation towards and trust in TQM or other quality initiatives (Yusof and Aspinwall, 2001).

Results of the MTF Trial

The proposed MTF, together with the Self-assessment, is designed to allow a company to pace its quality development process using its own approach. This is important because only the company itself knows its circumstances and constraints, and can judge which approach is best suited for its business. To test the MTF approach, trials were conducted at two Malaysian manufacturing SMEs. MTF Self-assessments were carried out before and after MTF introduction, with a period of 6 months between self-assessments. Interviews with company staff helped to provide a richer feedback on detailed areas of application. Key results of the trial study are illustrated by the ‘before-and-after’ radar plots in Figures 2 and 3, which also show the maximum score possible for each criterion. Company A (Fig 2) showed substantial improvements in several of the criteria, those in which they were previously weakest. Company B (Fig 3) showed smaller improvements over several criteria, but again the weakest areas were those which showed the greatest improvement. From the responses of both companies, it appears that the MTF can offer a useful contribution to the Malaysian SMEs in improving quality awareness and performance towards business excellence and better quality management practice. The MTF Self-assessment approach was successful, as it had a strong motivating influence on the companies, which resulted in genuine improvement. According to interviews with one of the case study companies, conducting an internal company audit using the MTF Self-assessment to assess existing quality practices, as well as strengths and weaknesses, can provide clear information to pinpoint the required changes that need to be tackled at various levels throughout the company.
Interviews and discussions with the case study companies also suggested that a short introduction handbook to TQM should be prepared to clearly explain the TQM requirements for SMEs. This will also help companies to see their TQM journey more clearly and predict the results of the investment and effort which are required. To meet this requirement, an MTF Handbook was developed, much of it adapted from case study company's materials, to present basic guidelines and success factors of TQM implementation for SMEs. It presents a basic understanding of background and requirements to embark on a quality journey towards TQM and business excellence. A quality glossary was also provided, in order to give a common understanding about quality terms for Malaysian SMEs.
Conclusions and Suggestions for Further Work

The development of the proposed MTF approach integrated various sources of data, including the QMEA criteria, and was developed using information from case study companies and Malaysian quality experts. The MTF approach is based on TQM principles and assessment criteria and employs basic quality activities (5S, QCC, Kaizen). Through the work with case study companies and interviews with experts, the MTF has been developed and validated especially to suit the characteristics of Malaysian SMEs. Following the implementation trials outlined above, the authors considered that the MTF represents a practical approach for quality development in Malaysian SMEs. The MTF approach can act as a stepping-stone towards improvement of profit, business excellence, internal and external customer satisfaction and management expertise. However, success in the application, adoption and implementation of any quality activity will, as always, depend largely upon a high level of management commitment and enthusiasm for quality.

By using the MTF Self-assessment, an SME can obtain a clear picture of which criteria are most critical to its current developmental needs, in relation to the organisation’s capability and circumstances. The Self-assessment suggests the company quality improvement direction by identifying strengths and weaknesses in business excellence. Stakeholders and managers can thus establish strategies that will help their organisation to pass through the difficult early stages of quality management implementation more effectively. The MTF will contribute to answering the difficult questions, highlighted by many Malaysian SMEs, on how to start their quality journey.

The MTF model is intended to be generic in nature and to provide a guide to building the quality systems, culture and practices for business excellence with a flexible approach. SMEs cannot be expected to have everything prepared from the start of their quality journey due to their lack of resources, such as money, time, people and management expertise. Hence, they must be allowed to proceed with quality management development at their own speed. It should be possible to practice the MTF at individual department level, as well as in a very small business setup.

For SMEs planning to move towards TQM or business excellence, the MTF approach will provide them with information on the elements of TQM and TQM success factors. For companies which are already implementing TQM, have a TQM process in place, or are certified to ISO 9001, MTF can provide additional ideas on how to improve the quality initiatives. Forewarned about the potential barriers and problems, SME companies should be able to adopt TQM without such great cultural shock. For companies planning to achieve quality awards, the MTF can guide them with the elements and criteria of the QMEA, and is also related to the highest Malaysian award, the Prime Minister Quality Award (PMQA), as well as to leading business excellence models, such as the MBNQA and EFQM.
This research represents a snapshot of manufacturing companies' activities and progress over a limited time period due to resource limitations, both of time and money. As stressed by Dale et al. (2001), studying over a longer period could significantly enhance the theory development and research findings. As company requirements and business needs change, a longitudinal study could help to refine and update the MTF approach, and help to make it more generic to meet a wider range of business needs, e.g. for service industry or non-profit organisations. A further study should also be aimed to identify the specific cultural elements that facilitate success for Malaysian SMEs in implementing modern quality management. This could be achieved by using action research in a practical implementation with a small number of case companies, in order to prove the MTF approach.

It is a further suggestion of the authors to trial the introduction of MTF Self-assessment within individual departments or within very small organisations (e.g. employing less than 10 employees). The concept of growing 'best practices' within individual departments of a small company is still relatively untested.

To broaden the study, an approach similar to the MTF could be tested with SMEs in other countries, especially in the ASEAN region, in which there are many developing and newly-industrialised countries. Findings from these countries could then be compared with those from Malaysia. It would be interesting to compare the stages of quality management development in SMEs between different countries in the region. Co-operation between academics and quality experts in a comparative study of national quality development, could provide a useful perspective for government, quality practitioners and industrialists.

A final general suggestion for governments in developing countries is that they should encourage SMEs to participate in national and international quality and business excellence awards. The creation of national support schemes for SMEs to help them compete and meet award criteria would be a very beneficial development. The challenge facing a country's development planners is in devising practical quality programmes, in order to enhance the competitive position of their SMEs and help them to meet the ever-advancing international quality requirements for quality and excellence.

References


