



# Total quality management implementation frameworks: comparison and review

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**ABSTRACT** *One of the most influential factors in ensuring total quality management (TQM) adoption success is the formulation of a sound implementation framework prior to embarking on such a change process. Current frameworks seem to have been developed and derived primarily from the context and experience of larger sized organizations rather than small businesses. They tend to be complex and too prescriptive, rather than being a general guide. This paper compares and reviews a sample of the existing frameworks found in the literature. The first part focuses on understanding small businesses in terms of their definition and characterizes the differences between large and small businesses with respect to TQM implementation. It is followed by analysing the proposed frameworks as to their suitability and applicability to small and medium-sized enterprises (referred to as small businesses). This particular sector is chosen because it provides much needed attention, especially if TQM is to be sustained by the larger multinational organizations. By improving the small business sector, the resultant effect on the overall economy will be tremendous. A discussion is included on the future research direction for the development of a framework to meet the needs of small businesses.*

## Introduction

Total quality management (TQM) has been described as a management philosophy and a way of thinking that has helped many organizations towards achieving world-class status. These organizations are able to produce quality products and services that meet and exceed the needs of their customers. TQM helps create a culture of trust, participation, teamwork, quality-mindedness, zeal for continuous improvement, continuous learning and, ultimately, a working culture that contributes towards a firm's success and existence.

This paper looks at differences between large and small business TQM adoption. It will look at the different models and frameworks used as a starting point for implementation. Many of the frameworks found are not well adapted to the needs of a small business environment. Not many researchers have actually addressed this problem and it is argued that a framework that is more suitable for smaller businesses can and should be developed to meet the shortcomings.

The implementation of TQM is one of the most complex activities that any company can attempt, the main reason being that it involves a change in working culture and impacts people (Kanji & Barker, 1990). Glover (1993) argued that many organizations do not actually understand the complexity of organizational change and innovation. It is only appropriate

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that a sound implementation framework be developed before actual implementation to ensure a successful adoption of TQM in any organization. The purpose here is not to compare each and every one of the frameworks proposed in the literature, but to provide an overall perspective and understanding of the main differences and similarities. Once this is achieved, the way will be paved for the further development of a framework for small businesses.

### Defining small businesses

There is no consensus on the definition of a small business; variations exist between countries, industries and even different government agencies within one country. Numerous authors, such as Bolton (1971), Hertz (1982), Anthony (1983), Storey (1994) and Corman and Lussier (1996), have discussed this in depth. Small businesses will be treated in a similar way to small and medium-sized enterprises (SMEs) in this study and are taken to be **those which employ fewer than 250 workers**, as adopted by DTI (1996).

### Differences between large and small businesses

Before discussing the various implementation frameworks, it is appropriate first to try and characterize the small business sector with regard to quality implementation by comparing both large and small businesses. By doing so, the small business context can be put into perspective and it will be possible to understand why current implementation frameworks are not suitable for small businesses.

Ghobadian and Gallear (1997) made a list of the differences that exist between large and small and medium-sized businesses. After a careful analysis of the items put forward, a modification was made, adding **the advantages and disadvantages** with respect to the main characteristics; these are shown in **Table 1**. Certain characteristics can encourage the process of implementing TQM, while others can hinder it. Some of the advantages are:

- **a flat structure and short decision-making process allows shorter and faster information flow which can improve communication;**
- **a low degree of specialization (generalist) results in having a broader perspective of issues and problems rather than narrow specialist functional views—better in providing improvement ideas;**
- **high management visibility and closeness to point of delivery—easier to permeate new change initiatives;**
- **a unified culture provides a good foundation for change, e.g. the adoption of TQM;**
- **the high incidence of innovativeness can nurture a continuous improvement culture;**
- **people-dominated together with organic behaviour, rather than bureaucratic and system-dominated, helps improve the chances of success for new initiatives.**

In terms of structure, processes and people, a small business seems to be in an advantageous position for adoption of a new change initiative, provided that the owner/management has the commitment to and leadership of the change process, together with a sound knowledge of it. Small businesses can provide high-quality employment in terms of involvement and a generally high level of satisfaction (Thompson & Leyden, 1983).

**There are also characteristics that can result in a disadvantageous situation. The most important is believed to be the financial and human resources constraint faced by many small businesses. Other disadvantages include:**

- **Lack of financial resources, which can affect investment in new products and processes.**

**Table 1.** *Small business characteristics—advantages and disadvantages*

Characteristics	Advantage	Disadvantage
<p><i>Structure</i> Flat with very few layers of management, top management highly visible and close to the point of delivery. Less delegation. Division of activities limited and unclear. Low degree of specialization. Flexible structure and information flows. Strategic process incremental and heuristic</p>	Faster communication line, quick decision-making process, faster implementation, short decision-making chain	Low specialization may result in lack of expertise in change initiatives. Need outside assistance. Owner controls everything and lack of delegation can stifle growth
<p><i>Systems and procedures</i> Activities and operations not governed by formal rules and procedures. Low degree of standardization and formalization. People-dominated. Simple planning and control system. Incidence of 'gut feeling' decisions more prevalent. Informal evaluation, control and reporting procedure. Flexible and adaptable processes</p>	Simple system allows flexibility and fast response to customer needs	Lack of proper system—difficulty in ensuring efficiency of work, and high variability in work outcome. 'Gut feeling' approach may result in wrong decisions
<p><i>Culture and behaviour</i> Operations and behaviour of employees influenced by owners'/ managers' ethos and outlook. Organic, not strong departmental/ functional mind-set, corporate mind-set. Unified culture. Result-oriented</p>	Corporate mind-set is conducive for new change initiatives, i.e. company first. Unified culture can be good starting point for, say, TQM	Uncommitted or dictatorial owner/ manager ethos can damage new initiatives
<p><i>Human resources</i> Personal authority mainly high. Few decision-makers. Dominated by pioneers and entrepreneurs. Individual creativity encouraged and high incidence of innovativeness. Modest human capital, financial resources and know-how. Individuals normally can see the results of their endeavours. Low incidence of unionization. Low degree of resistance to change. More generalist, some staff may cover more than one department</p>	High authority and responsibility can ensure job is done. Innovative environment will support improvement culture. Early union involvement needed to ensure success. Fewer employees—better relationship, knows almost everyone	Lack of financial support, e.g. no training budget <i>ad hoc</i> , and small-scale approach can stifle improvement efforts. Improvement needs investment in human resources
<p><i>Markets and customers</i> Span of activities narrow. Limited external contacts. Normally dependent on a small customer base. Close contact, easily accessible and many known personally. Mostly local market, few national or international</p>	Immediate feedback from customers can make response quicker. Understand better customer needs	International marketing expensive, after sales support not as extensive as large businesses. Easily suppressed/dictated by larger multinationals (if they are customers), e.g. imposed ISO 9000, QS 9000, EMS, etc.

- Training and staff development being *ad hoc* and small scale can hinder the improvement effort.
- Owner not delegating and trying to control every aspect of the business—can stifle teamwork and involvement.
- Improper and inadequate system and procedures can affect efficiency and will result in dissatisfaction from employees, e.g. inconsistent industrial relations policies between different people.

These are some of the examples relating to the characteristics of a small business. The advantages and disadvantages of being small can shape the way they conduct their improvement efforts. Many small businesses complain about the problems they are faced with, such as lack of time and money, usually resulting in fire-fighting these problems. They may not have time to plan, to improve or even to adopt new managerial techniques; but they can improve through the proper adoption of improvement tools and techniques which ultimately can save them a lot of time and money wasted through inefficient processes and which can provide them with better ways of doing things, i.e. a quality job. However, not having a proper guide and blindly following what their 'big brothers' in larger organizations are doing can be disastrous. Welsh and White (1981) summed it up quite aptly when they stated that a small business should not be treated like a little large business. Clearly, these characteristics must be understood first before attempting to introduce or adopt new initiatives such as TQM.

### Defining an implementation framework

Many writers have often used the term framework in TQM implementation without really defining it. Some writers have referred to it as being a prescriptive set of things to do, while others have chosen to portray the frameworks through diagrams or graphical representations. There also seems to be no mention as to whether or not a TQM model is equivalent to a TQM implementation framework. It is assumed here that a model answers the question of 'what is TQM', with the overall concept or elements put down together, whereas a framework answers 'how to' questions and provides an overall way forward.

The *Reader's Digest Universal Dictionary* (1987) defines framework as "a structure for supporting, defining, or enclosing something; especially, skeletal erections and supports as a basis for something to be constructed" and also "a basic arrangement, form, or system". A framework is also a set of basic assumptions or fundamental principles of intellectual origin in which discussions and actions can proceed (Popper, 1994). If TQM is to be theoretically 'designed and constructed', then one would need to have the overall picture and structure for implementing, which is referred to as a framework, for carrying out those relevant and important activities.

Aalbrege et al. (1991) defined a framework as being "a clear picture of the leadership goal for the organization and should present key characteristics of the to-be style of business operations". In TQM terms, it means that one should design and develop a framework representing the modus operandi, the systems to be developed, the activities to be carried out and the ultimate vision of the new style of managing quality in the organization. Struebing and Klaus (1997) argued that a sound implementation plan should define what the organization does, what it is trying to do and how it is going to do it, ensuring that each step builds on the previous one. Hakes (1991) concluded that a sound framework secures links between concepts and practical application. This means translating TQM theory into practice through some systematic means.

Wrong implementation approaches to TQM are perhaps the most frequent reason for failure (Glover, 1993). One problem is that the mission, the strategy and the needed values are not interfaced with the TQM approach. Many organizations seem trapped with the notion that TQM is something that is added on to their existing system. TQM should be seen as a new way of managing the business. However, trying to change from a culture in which fire-fighting prevails to a new culture in which constant plans are made, improvement is a norm and the attitude is proactive rather than waiting for problems to occur, is quite a formidable task. It will definitely require a new thinking style, the thinking for quality.

Some of the reasons why a framework is needed are (Aalbrecht *et al.*, 1991):

- To illustrate an overview of TQM so as to communicate a new vision of the organization.
- It forces management to address a substantial list of key issues which otherwise might not be addressed.
- It gives an insight into the organization's strengths and weaknesses.
- Most importantly, to support implementation and to improve the chances that TQM adoption will be successful.

In short, developing a sound implementation framework is crucial and should be one of the first things to be done before embarking on TQM. The framework will make the organization more aware of TQM itself, and be able to introduce its elements and features in a more comprehensive, controlled and timely manner.

### Implementation framework classification

Different approaches have been developed, reflecting the particular author's background and experience (Dale & Prapopoulos, 1995). In this section, the various frameworks proposed by researchers, consultants and experts in the field are reviewed. A full coverage of all frameworks would be impractical, but as far as possible, the most widely published and relevant ones are presented. It is not intended that these form a definitive list of frameworks available, but rather a representative sample of the most common ones mentioned and proposed. From the various frameworks and models researched, they have been categorized into three broad types, namely:

- (1) Consultants/experts based.
- (2) Awards based.
- (3) Academic based.

Basically, consultants-based frameworks are those derived from personal opinion and judgement through experience in providing consultancy to organizations embarking on the TQM journey. Academic-based frameworks are those developed by academics and researchers mainly through their own research and experience in the field. Although awards-based frameworks are meant mainly for organizations seeking to be recognized as leaders in the quality management field, some authors, such as Ghobadian and Woo (1996), have suggested that they can be used as guidelines for implementation, while Hewitt (1997) has the opinion that they are more of a self-assessment tool. The authors tend to agree that awards-based frameworks are more suitable for self-assessment as well as to gain recognition of a company's effort towards applying for an award. Award-based models are but one of the tools within the spectrum of quality initiatives to be employed when an organization has reached a mature level of TQM implementation. An additional subcategory separately discussed is the small and medium-sized frameworks proposed by consultants and academics. This is so that they

can be differentiated from the rest of the frameworks whose applicability to SMEs was not the primary focus.

### **Consultants/experts-based framework**

All the quality gurus are or were consultants at one stage in their career. Deming's implementation approach can best be described by his 14 points for management (Deming, 1986). They actually comprise a set of 'things to do by top management' in trying to change the prevalent management thinking of large companies in the US. His approach advocated management to change their business culture by adopting a quality improvement attitude for products, processes and services. Crosby (1980) gave his famous 14-step quality improvement programme, which can be described as a stepwise method towards building total quality into an organization. Juran (1993) provided 12 clearly laid out steps for organizations to follow. It is worth noting that their working background was all in large organizations, e.g. the ITT Corporation and the General Electric Bell Labs. Therefore, it comes as no surprise that their approach primarily targeted large organizations, which was also pointed out by Ghobadian and Gallear (1997).

Adams (1994) described an implementation framework used for guiding TQM implementation in the Harris Corporation. The model described how the company identified a focus and set correct goals towards TQM adoption based on five main stages: assessment and understanding; setting the course; focusing; planning and aligning; and actual implementation.

Aalbrektse *et al.* (1991) proposed two implementation frameworks in the form of flow diagrams, which they called total customer value (TCV) and the umbrella of TQM. The TCV framework places a strong emphasis on customer values and incorporates the supply network into the model. Both these frameworks are very complex, they contain a lot of jargon and probably target large companies where knowledge, skills and resources are in abundance. However, it can be argued that it is far from suitable for small businesses because: (1) the jargon used may cause confusion; (2) the framework itself is complex; and (3) it does not consider the small business environment.

Berry (1991) prescribed a model containing 15 sectors within concentric circles to denote the evolutionary nature of the process. The inner most circle begins with realizing the needs, then structuring for quality, determining customers needs, designing the quality process, quality planning, quality improvement teams, unit-level quality, training, awareness and promotion, recognition, demanding vendor quality, enhancing the process and, finally, monitoring and measuring progress.

Certain issues, such as training and awareness, may require much earlier attention in the implementation process. However, Berry had placed it on the outer concentric circle, which is obviously a bit late. How does one conduct quality improvement without first providing the necessary training to the people involved on various aspects including necessary tools and concepts for improvement? Together with this is the need to establish a proper improvement infrastructure and the required procedures for conducting improvement activities.

Hakes's (1991) management framework for TQM attempted to answer pertinent questions relating to implementation, such as: What are the missions, aims and objectives that the company wishes to achieve in the short and long term and how are these communicated? How are external customer and competitor data gathered? How will performance be measured? How are improvement opportunities highlighted and communicated? How will the whole process be coordinated? All these ideas are aimed at continuous ongoing improvement.

Hakes's model is simple but too prescriptive and lacks some important elements, such as the quality tools and techniques, quality system and human resource issues. However, its simplicity offers an attractive option to start with when developing an implementation framework.

### **Awards-based framework**

Quality awards have been used by many organizations either as a tool to assess their progress towards TQM adoption or to compete for the particular award for which they applied. The Malcolm Baldrige Award is said not only to codify the principles of quality management in a clear and accessible language, but also to provide companies with a comprehensive framework for assessing their progress towards the new paradigm of management (Garvin, 1991). Garvin (1991) pointed out that the "best way to understand the Baldrige criteria is as an audit framework" which tells companies where, and in what ways, it must demonstrate proficiency in managing quality. However, it does not actually provide an answer on how to proceed towards the criteria—the categories are, in a sense, a 'to do list'. It is an assessment tool that companies can use once TQM has started.

Some writers have advocated the use of the Malcolm Baldrige and European Quality Award (EQA) model as a framework for TQM implementation (Ghobadian & Gallear, 1997; Thompson & Simmons, 1997). They suggested that quality awards are particularly useful for smaller companies and provide a framework for the implementation of total quality. However, they fall short of describing how they could actually be used. Ghobadian and Woo (1996) mentioned that "small companies lack knowledge of how to implement total quality and cannot afford to engage expensive consultants". Award-based models, when used by small businesses as an implementation framework, would be too complicated, elaborate and involve jargon with which many small business managers may not be familiar. Not all small businesses are as advanced in their application of quality tools and practices as large businesses. Hewitt (1997) described in some detail the difficulties involved in getting small businesses to conduct self-assessment based on the EQA model. Small businesses, according to Hewitt (1997), do not see the need for business excellence when they are too tied up with their day-to-day survival. They also do not see the benefits, such as the marketing advantage, in getting the award as compared to being certified to ISO 9000 where they can use maximum publicity. It can be argued that award-based models are not for the beginners; they are only useful when a company has already begun its quality journey and wants to enhance its programmes as well as for those who want to add to their milestone of 'honour rolls' in quality achievements.

### **Academic-based frameworks**

Different researchers in academia have developed some form of implementation framework for adopting TQM. Oakland (1993) outlined a TQM implementation plan consisting of a series of seven key steps. The first three are gaining commitment to change, developing a shared mission and defining the measurable objectives. The next four comprise developing the mission into its critical success factors, understanding the key critical processes and gaining ownership, breaking down the critical processes into sub-processes, activities, tasks and, finally, monitoring and adjusting the process alignment in response to difficulties in the change process. Together with these steps he incorporates a plan-do-check-act (PDCA) cycle for the purpose of pursuing never-ending improvement.

Dale (1995) proposed the UMIST Quality Improvement Framework for the purpose of

showing how the various elements and features of TQM fit together. He stressed that it is particularly useful for organizations that

- are taking their first steps on the quality improvement journey;
- have ISO 9000 registration and require guidance on what to do next;
- are attempting to develop quality improvement plans and controls in a number of sites;
- have less than 3 years' operating experience of quality improvement.

The UMIST model seems to be more succinct with regard to basic issues to be addressed, with four main sections being: organizing for improvement; systems and techniques; measurement and feedback; and culture change. However, the framework still suffers from certain limitations in that some of its features are more applicable to large companies than small. Some of the problems Dale mentioned were:

- small companies do not see the same need as large companies for formal long-term plans for quality improvement;
- the responsibility for organizational change in small companies is left mainly with the Managing Director, whereas in large companies it is shared among various teams and levels of senior management.

Kanji's (1996) modified pyramid model, together with his four-stage process of implementing TQM, represents an attractive and practical implementation framework for companies to follow. His four stages are incorporated in the PDCA format. They are identification and preparation, management understanding and commitment, scheme of understanding and critical analysis. The implementation approach seems to be more inclined towards problem-solving or improvement steps. Issues for implementation that must be addressed are questions such as what kind of systems, activities and procedures need to be designed and developed before one can say that TQM is operational. For example, at the identification stage Kanji pointed out the need to identify and collect information where improvement will have the most impact. This will require a management information or a fact-based data collection system. Without the existence of such a system, especially for a small business just starting on TQM, it would be difficult but not impossible to start with the first stage. Basically, it can be argued that one would need to have a proper information system, a quality improvement infrastructure and system, or other management systems in place before and during the implementation phase. These 'employee and customer friendly systems', when properly designed, can affect people's actions to change and ultimately improve prevalent culture. For example, just by saying that one needs to have quality improvement alone is not enough. Clear responsibilities must be assigned on developing policies and procedures, when to activate teams and their corresponding composition, a proper training system, as well as plans to enhance and sustain the whole TQM process. The organization needs to design a quality improvement system that addresses policy matters, the infrastructure, the types of projects to undertake, training and education and other basic necessities. Early involvement from employees or unions is also important for success as well as the signals of management commitment, attitude and necessary behavioural changes, if this has not been a practice before.

An extensive and complex framework was developed by Mann (1992). His model is considered complex because there are many components interacting and dependent on each other. There is a 'TQM implementation approach' comprising a 'TQM implementation system' and 'TQM quality activities' that can improve 'operational business performance' and finally impacts on 'strategic business performance'. Within the categories themselves, there are still many individual items that need to be addressed, such as implementation



change agent, implementation driver, rate of TQM implementation, etc. The complexity may have derived from the large company-based frameworks from which he obtained his information. Of the 21 companies Mann studied, 14 were large, six having more than 2000 employees, the remaining being small and medium-sized companies. He claimed, however, that the smaller the number of employees, the easier it is to implement TQM. In fact, from his model small companies may become discouraged with the complexity involved, let alone trying to understand the philosophy of TQM itself. The authors would also argue that if it is easier for small businesses then there should be many small companies which have already been successful in their TQM effort. However, this is not the case. The facts show that many small companies are actually failing in their efforts, as reported by Doherty (1995). Again, it is crucial not to overlook the actual difficulties of small business involvement in TQM as well as in determining ways of assisting them to adopt TQM more successfully.

Glover (1993) proposed a five-stage implementation framework consisting of awareness, education, structural change, necessary activities and outcomes or expected improvements. He proposed a TQM system design looking into issues such as whether there have been any management–union conflicts, the cultural backgrounds of employees and conducting baseline evaluation of the organization, e.g. through organizational surveys. Other design considerations include details of the transformation process and how the TQM system will be structured, such as how many quality teams, members selection, the communication systems, plans to educate the existing staff, how new managers and employees will learn the TQM process, and how the management information and accounting systems should be modified to enhance TQM and revenue generation. Effective design based on a thorough analysis of the organization and its operating environment will definitely provide a sound foundation for the path to successful TQM implementation.

### **Small and medium-sized companies' frameworks**

Few studies were found specific to small businesses. Ghobadian and Gallear (1997) proposed a 10-step approach for TQM implementation in SMEs. **The first step involves recognition of need,** then an understanding of the concepts and establishing goals for the quality improvement process. A step which calls for creating a systematic procedure, e.g. BS EN ISO 9000, seems to be pointing to the direction that these procedures can solve the quality problems in small businesses. In actual fact, it is the preventive system for quality assurance that should be the focus here. Moreover, there are different systems in use, such as AQAP or QS 9000, for quality assurance that can be developed according to a company's requirement.

Ho and Fung (1994) developed a stepwise implementation model applicable in SMEs which they called the TQM excellence model. It provides a step-by-step guide for SMEs to follow, but is too prescriptive and seems to be very technically inclined, with all the Japanese concepts such as QCC, 5S, ISO 9000 and TPM included. Unlike Kanji's and Dale's models, Ho and Fung's looks incomplete, since it lacks other important elements such as cultural issues, education and training, measurement aspects, etc. QCC may be suitable for a particular industry or even a country; it is not a generic concept but a name given to quality improvement activities.

Asher (1992) provides a practical guide to implementing TQM in SMEs based on his experience as a consultant. He suggested establishing a structure for improvement, defining responsibilities and appointing a total quality coordinator on a part-time basis. Education and training was suggested for everyone in the organization and he explicitly divided education into the principles of total quality and training to be carried out on tools and techniques for

problem-solving. An important step is to plan for improvement. Improvement efforts can be derived from initial assessment, quality cost data, internal customer problems or by focusing on the business processes. In ensuring total quality permanency, he suggested measuring success as well as communicating and recognizing results. His implementation framework can be summarized in four stages, namely diagnostic, commitment, implementation and review. The diagnostic stage is required for establishing the need for change, which can show management and employees where to start. Some of the methods suggested by Asher are: (1) investigating cost of quality; (2) conducting customer perception surveys; (3) collecting data on employees perceptions; and (4) establishing systems and procedures, e.g. BS EN ISO 9000. Asher's framework is simple; however, like Kanji's (1996), he assumed that a small company already has in place a data collection system, such as quality costing. Companies that do not have some form of data collection system will need one prior to conducting the diagnostic stage. Some small companies will need to develop a suitable system which can actually integrate the measurement aspect right from the start without having to develop two separate systems for diagnosing and monitoring purposes. So, improvement actually entails finding out what to improve, measuring results, comparing with some expected targets and reviewing for continuous improvement. An integrated measuring system will be cheaper than isolated measuring systems where each measurement criterion or tool is used separately at different stages.

Huxtable (1995) prescribed an implementation plan which he claimed is typical for small companies. He suggested four main elements, starting with education and awareness, then on to management team commitment, planning (through customer review, employee survey, cost of quality, business process analysis) and finally implementation activity (through training, problem-solving, teamworking, statistical tools). He recognized that the small business manager may be at a loss as to where to start, especially considering the wide range of implementation strategies put forward by leading exponents of TQM.

## Discussion

Some of the most important and relevant implementation frameworks have been presented. In spite of this, some are probably still in the hands of consultants, academics, or researchers who may not yet have published them. However, it is felt that those discussed are sufficient to highlight the major issues.

It can be argued that the quality gurus, such as Deming, Crosby and Juran, did not actually develop any implementation framework. They devised some improvement steps and advice for management to follow, which were more of a prescription for companies to act upon. How to do it was solely up to each and every organization. Some of the followers of these gurus have moved a step forward and developed frameworks for adopting TQM. Oakland's implementation framework, and Dale's UMIST framework, are possibly derivatives of the guru's principles presented in a different form. However, **Kanji's pyramid model (1996), with his four-stage implementation procedure, is the first to provide a systematic way to implement TQM.**

Aalbrektse *et al.*'s (1991) and Mann's (1992) frameworks are too complex and complicated in nature for SMEs to apply. As described earlier, they contain too many elements and are suitable for organizations having specialist job functions, clearly depicting a large company structure. Together with this is the number of people required to execute various tasks of implementing TQM, such as data collection for improvement, supplier appraisal, quality system development, etc. again resembling a large company situation. An implementation framework, when developed from a small business perspective, needs to be less complex to

suit the particular organizational context in question. Small businesses are constrained by human and financial resources; so, implementing TQM based on such complicated frameworks can be disastrous.

Besides being complex, it was felt that some of the frameworks assumed that certain systems are already in place before implementing TQM. For example, Asher's (1992) and Kanji's (1996) frameworks assumed that data collection for quality costs or a customer feedback system already existed or could be achieved before the implementation. This is not true of all SMEs. It may be true for large businesses. Therefore, it is not appropriate to assume that all small businesses have systems that are comparable to their large counterpart's system before implementing TQM. Systems such as data collection or quality costs, which are prerequisites to TQM adoption, must first be checked for availability and improved if needed. Data and information form the basic foundation for any continuous improvement process.

Even those frameworks claimed to be suitable for SMEs are too prescriptive and seem to provide one definitive solution in the form of 'steps to be taken' rather than a general outline for the way towards implementing TQM. For example, a step which called for certification to BS EN ISO 9000 portrayed a false picture of TQM implementation. Small businesses must be informed of a need for a system for quality assurance in their effort towards TQM, but not based solely on BS EN ISO 9000. Ho and Fung's model (1994) is very much tool-oriented and believed not to be exhaustive, since many elements of TQM are not included. Implementation frameworks should provide an overall view towards building total quality in an organization.

One major difference between the frameworks is the structure in which they were presented. Except for Aalbregtse *et al.*'s (1991), Dale's (1995) and Mann's (1992) frameworks, all the rest are based on steps to follow. These frameworks can be said to have a 'step approach structure', while the remaining ones seem to fit a so-called 'system approach structure', whereby an overall picture is presented.

The major similarity between the frameworks is that they can be condensed into the four major elements of the PDCA cycle: planning what to do, doing what has been planned, checking results or effects of what has been done, and finally acting upon those results in terms of standardization, further improvement, or feedback. Although different terms were used, they actually represent the same meaning in a particular element, such as planning. For example, the terms assessment, diagnostic or recognition of needs carry the same activity in the planning stage. The activities, elements and ideas in the frameworks were analysed and have been categorized into a PDCA format, and are shown in Tables 2-4.

The problems highlighted in this short review indicate that current implementation frameworks still suffer from weaknesses and are far from suitable for SMEs to adopt. SMEs differ in terms of their structures, processes, resources and behavioural aspects, all of which will need to be considered if a framework that fits the purpose is to be developed. Therefore, the weaknesses which have been highlighted must be overcome in order for such a framework to be suitable for small businesses.

### **Conclusions and future research**

The implementation of TQM is not and has not been an easy task for many organizations. This paper began with an overview of the small business, it provided a definition and elaborated on the characteristics that can impact its TQM implementation. It was argued that certain advantages inherent in small businesses can facilitate TQM adoption in these organizations. However, there are factors that can be disadvantageous, such as lack of

**Table 2.** Similarities of academic-based frameworks using PDCA elements

	Oakland (1993)	Kanji (1996)	Mann (1992)	Dale (1995)	Glover (1993)
<i>Framework structure</i>					
<i>Planning</i>	Step approach Goals, targets and strategies	Step approach Identification and preparation, management understanding	System approach TQM implementation approach	System approach Organizing	Step approach Awareness, TQM design
<i>Doing</i>	Developing critical success factors, most critical processes	Scheme for improvement	TQM implementation system	Systems and techniques	Education, fact- based problem- solving
<i>Check</i>	Measure	Measure performance	Measure business performance	Measurement	Measure performance
<i>Action</i>	Corrective action teams	Critical analysis		Feedback	Continuous improvement

**Table 3.** Similarities of consultant-based frameworks using PDCA elements

	Adams (1994)	Aalbrektse <i>et al.</i> (1991)	Berry (1991)	Hakes (1991)
<i>Framework structure</i>				
<i>Planning</i>	Step approach Assessment of current situation, formulate key strategies	System approach Voice of customer, comprehensive assessment, business strategy	Step approach Realize need, structure for quality, designing quality process, quality planning	Step approach Steering of TQ programme, communication of missions, aims and objectives
<i>Doing</i>	Education, employees' alignment	Developing and improving business processes and systems	Determine customer needs, quality improvement teams, training	Collection and collation of external intelligence
<i>Check</i>	Detail goals, objectives	Monitoring and assessment	Monitoring and measuring	Measurement of performance
<i>Action</i>	Implementation of plan	Continuous improvement framework	Enhancing the process, recognition	Continuous implementation of improvements

resources, which need particular attention when designing a suitable implementation framework. This implies that a simple framework will be better for small businesses.

This paper has also reviewed various implementation frameworks found in the literature. By classifying them into the various major types, consultant-based, award-based, academic-based and small and medium-sized business frameworks, it has provided some light on the strengths, weaknesses, similarities and differences that exist between them. Most of the frameworks found were argued not to be suitable for small businesses. Even if they appear to be suitable, they still suffer from certain problems which are not in accordance with the peculiar characteristics described in this paper. Improvements are urgently needed to ensure that small business TQM adoption will be successful. It was also argued that the frameworks developed to date have largely centred on big companies, as detailed in the Discussion section. SMEs cannot simply follow a system in which ample resources are available and, in

**Table 4.** Similarities of small and medium-sized frameworks using PDCA elements

	Ghobadian and Gallear (1997)	Asher (1992)	Huxtable (1995)
<i>Framework structure</i>	Step approach	Step approach	Step approach
<i>Planning</i>	Recognition of needs, establish goals and objectives, plan TQM implementation	Diagnostic costs of quality, system audit, customer and employee perceptions	Planning through customer review, employee survey, costs of quality
<i>Doing</i>	Educate, train all employees, create systematic procedure	Implement quality plan, action teams, educate and train	Education and training, problem-solving
<i>Check</i>	Monitor implementation		Measure business performance
<i>Action</i>	Continuous improvement		

some cases, are in a different 'playing field' (like IBM, Microsoft, SONY, British Airways, etc.). It is imperative that an implementation framework be developed that 'fits the purpose' of small businesses and so paves the way for better TQM adoption in this particular sector.

In order to develop a framework that is applicable and suitable for small businesses, certain characteristics must be considered. These could be used as a guide. They are

- systematic and easily understood;
- simple structure;
- clear links between elements which are presented;
- general enough to suit different contexts;
- represent a road map and a planning tool for implementation;
- answers 'how to?', and not 'what is?' TQM;
- implementable.

Small businesses need a much simpler approach than large businesses. Some form of gradual progression of quality initiatives adoption could be the key, rather than a 'fully blown' approach to TQM implementation, which will favour small businesses.

Future research will attempt to concentrate on developing an implementation framework that possesses some, if not all, these characteristics. A follow-up paper concerning this study will elaborate on the conceptual implementation framework for small businesses together with a case study conducted in a company. Hopefully, with this background on TQM implementation frameworks, and in particular for the small business sector, the journey towards excellence for small businesses will be much more accommodating, if not easier.

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