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# From TQM to business excellence

SAMUEL K. M. HO

**Keywords** ISO 9000, BPR, TQM, EQA, business excellence

**Abstract.** The value of TQM is revisited, including the relationship with corporate strategy and the four pillars of TQM. The Japanese TQM experience is put under close scrutiny, which leads to the need for a TQM model. A model called TQMEX, standing for TQM EXcellence Model, has been developed based on sound TQM practices. Further to a previous survey conducted on 180 UK firms, another questionnaire survey was conducted based on 16 each UK and Japanese firms. The result of the survey highlights the similarity and difference between the two countries in the practices of TQM. Some open-end questions are also used to illustrate the potential and problems of their TQM movement. Finally, a world-wide TQM movement towards business excellence is predicted and the way the TQMEX model can contribute is proposed.

## 1. Introduction

At the century close, the creation of the global market, international orientations of management that sweeps national boundaries; introduction of new technologies, and shift towards customer-focused strategies, makes

the competition stronger than ever. The criteria for success in this global, internationally oriented market have been changing rapidly. In order to expand business, enter new markets, and set realistic, competitive long-term objectives, excellence has become imperative. Management's effort has been directed towards discovering what makes a company excellent. To achieve excellence, companies must develop a corporate culture of treating people as their most important asset, and provide a consistent level of high quality products and services in every market in which they operate. Such an environment has supported the wide acceptance of TQM, incorporating ISO 9000, which emerged as a challenging and marketable philosophy. Inevitably, there is a need to address the question:

Is TQM a necessary and sufficient condition for business excellence, and if yes, what does it entail?

Many would agree that the TQM movement began in Japan and, if this is the case, it will be worthwhile understanding the quality revolution happening there at some stage.

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Sam K. M. Ho, PhD (Mangt.), FIQA Lead Auditor (ISO 9000), EQA Assessor, was the Oshikawa Fellow of Asian Productivity Organization in Japan whilst he was Senior Lecturer at the City Polytechnic of HK during 1984-1988. He then taught Strategic Marketing and TQM at the Warwick University, UK for five years. Sam has led many firms through successful registration of ISO 9000. During 1993-1994, he was invited by the Malaysian Government as their first Quality Expert under an Asian Development Bank-funded quality project. His roles included the development of a five-year Quality Plan for Malaysia and training the consultants. He has been the Professor of Strategy and Quality at the Luton Business School, the first such title in the UK. He is now Professor of Strategic and Quality Management at the International Management Centres in the UK and Visiting Scholar at the HK Baptist University. Sam is the editor for *Managing Service Quality* and guest editor for five international journals on quality management, strategy and training, and has published over 70 papers/books. His book 'TQM: An Integrated Approach' has become a best-selling TQM book since being launched in November 1995. He inaugurated the International Conference on ISO 9000 and TQM (ICIT) in the UK. The third ICIT held in April 1998 at the HKBU has attracted over 200 delegates, and comprises 60 overseas and 40 local papers. Recently, he has received a grant from the HKSARG Industrial Support Fund to train up 2500 managers and line staff as the world's pioneer 5-S Lead Auditors based on his propriety 5-S Auditing Checklist.



## 2. What is TQM?

TQM provides the overall concept that fosters continuous improvement in an organization. The TQM philosophy stresses a systematic, integrated, consistent, organization-wide perspective involving everyone and everything. It focuses primarily on total satisfaction for both internal and external customers, within a management environment that seeks continuous improvement of all systems and processes.

TQM emphasizes use of all people, usually in multi-functional teams, to bring improvement from within the organization. It stresses optimal life cycle costs and uses measurement within a disciplined methodology in achieving improvements. The key aspects of TQM are the prevention of defects and emphasis on quality in design.

TQM is a necessity. It is a journey. It will never end. It makes Japanese industry a miracle. It is the way to survive and succeed. What does it entail then? TQM is the totally integrated effort for gaining a competitive advantage by continuously improving every facet of an organization's activities. If we look at the meaning of each word, TQM can be defined as:

**Total**—Everyone associated with the company is involved in continuous improvement (including its customers and suppliers if feasible);

**Quality**—Customers' expressed and implied requirements are met fully;

**Management**—Executives are fully committed.

Ideally, everyone in the organization should be committed. However, according to Deming's research, (1986) some 94% of the problems in quality are caused by management and the system they create. Therefore, commitment by management should come before that of the front-line workers. Totality of managing quality implies that everyone, including the front-line workers, should be involved in the process. Thus, the above definition of TQM is a good balance between the ideal and real world. Various definitions of quality will be discussed in the next section.

Over my last few years of teaching on TQM, I have conducted no less than 20 F-tests (Neave 1990) on some 500 subjects. The delegates were asked to count the number of 'F's in the following box:

FINISHED FILES ARE THE RESULT OF YEARS  
OF SCIENTIFIC STUDY COMBINED WITH  
THE EXPERIENCE OF MANY YEARS.

My results showed that, on average, less than 20% of the delegates got it right. In fact, when I did it for the first

time, I was amongst the majority. I believe the true value of this exercise is that it concludes the workers are not at fault, but rather the management is. What the management should do is provide the correct tool to carry out the work, in this case, a spell-checker on a PC. This exercise verifies again Dr Deming's research finding in 1986, and indeed, in 1993, shortly before he died, he changed the figure from 94 to 97% in his last book '*The New Economy*' (Deming 1993).

One interesting rule-of-thumb in quality is called the 1-10-100 Rule. If someone produces defective work, and rectifies it immediately, it only costs him another equal effort to do so. If it has slipped to his internal customers and he wants to rectify it, then it will cost 10 times more effort. If, unfortunately, it has passed on to the external customer, then he has to pay around 100-fold in order to get the error rectified and the adverse consequences that follow. This is particularly significant for the service industries, as most of their work deals directly with external customers. They have less chance to rework internally. So, quality is compulsory for survival.

## 3. Summary of the quality gurus' teaching

The TQM gurus are charismatic individuals whose concepts and approaches to quality within business, and life in general, have made a major and lasting impact.

- W. Edwards Deming (1989) (*management philosophy*)—Produces his 14 Points for Management in order to help people understand and implement the necessary transformation. Furthermore, the Deming Cycle and the System of Profound Knowledge are important considerations in quality improvement.
- Joseph M. Juran (1988) (*quality trilogy*)—Develops quality trilogy of quality planning, quality control and quality improvement.
- Philip Crosby (1992) (*zero defects and cost of quality*)—His goal is to give all staff training and the tools of quality improvement, to apply the basic precept of Prevention Management in every area.
- Kauora Ishikawa (1986) (*simple tools, QCC, company-wide quality*)—Sees that quality does not only mean the quality of product, but also of after sales service, quality of management, the company itself and the human being.
- Shigeo Shingo (1988) (*Poka-Yoka/fool-proofing and Just-In-Time system*)—Introduces source inspections and improved Poka-Yoka systems which actually prevented the worker from making errors so that defects could not occur.

- Yoshio Kondo (1989) (*four step 3 for making creative and quality work*)—Sees that there is no basic contradiction between CWQC activities and humanity.

It would perhaps be unfair to exclude the European quality gurus from the above list. Claus Moller (1987) from Denmark could be the right person to fill in the gap. He sees Personal Quality as the basis of all other types of quality. Here I attempt to summarize his 12 Golden Rules on personal quality through his recommended 'quality business card' which I normally use on my e-mail signature:

Today, I shall do everything with quality in order to help others to do a better job.

TQM gurus' ideas are useful because they have been tested by thousands of organizations world-wide before people recognized them as 'gurus'. To implement TQM gurus' ideas, it is likely that different companies will have different priorities and targets, since TQM is so fundamental and all-embracing. In particular, Deming's idea should deserve more in-depth considerations.

#### 4. Relationship between TQM and corporate strategy

Corporate strategy consists of three key phases. The first phase is the determination of a corporate mission statement which sets the common value for everyone in the organization. This mission statement or vision of the firm should sustain the challenge of time and should remain unchanged for a decade or more. The second phase is defining the strategic options and choosing the optimum one. Normally, this will become the three-five year plan for the organization. The third phase is the strategic implementation which is also known as operations management. It also defines the short term (three months to one year) plan for the organization. The question is: Where does TQM fit into Corporate Strategy?

There are different answers to this question. Most people think that TQM should be linked to operations management. This is by no means a coincidence, because before the Japanese developed TQM, they started with industrial engineering (1940s), quality control (1950s, shortly after Dr Deming's public lecture to the CEOs of most large organizations in Japan). Quality control circle movement (1960s, spearheaded by K. Ishikawa), value engineering (1970s, triggered off by the oil crisis and microchip technology advancement) and total quality control (1980s, pioneering the world's TQM movement). Unfortunately, it is not always obvious during the evolu-

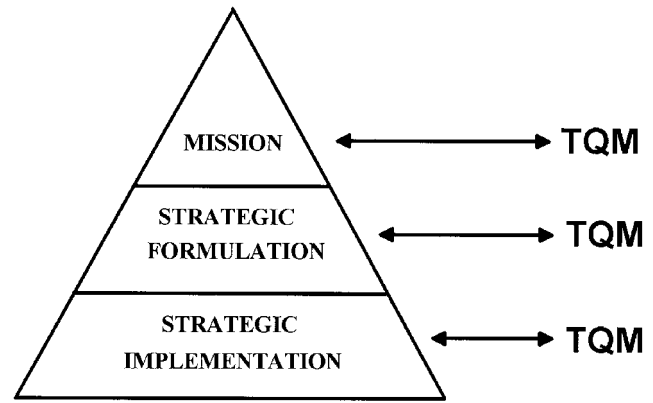


Figure 1. The relationship between corporate strategy and TQM.

tion of TQM, the concept of quality awareness has filtered up the organizational hierarchy. Today, the Japanese managers and directors are so concerned about quality that it has long become their mission. Consequently, in their strategic formulation process, they have used quality as their key mission statement and strategic option. When it comes to strategic implementation, quality has become a routine. I propose the relationship between TQM and corporate strategy as illustrated in figure 1. This approach adds totality to quality, as it is communicated throughout the organization and spanned over its long term plan.

#### 5. The need for a model

There are so many areas to tackle. Companies ask: how to start and where does this all lead to? There is therefore a need for a model to put the best quality practices together in a sequential model which can be used as a step-by-step guide for the companies who want to achieve TQM. It is argued that organizations are different and there is no universal approach to total quality. The proposed model attempts to offer something to everyone.

David Ricardo is recognized for his economic theory on comparative advantage which predicts that economic activities will move to places where overall natural resources are abundant and market is near. Yet this cannot explain the fact that Japan exports to the USA 10 times more than Brazil, although the latter has the same population and is about 10 times the distance closer to the USA. To explain this aspect, we have to consider the notion of 'Dynamic' Comparative Advantage. This implies that comparative advantage is not a gift from nature alone, but a dynamic entity designed by people, and includes investment in education, public facilities, technology, export promotion, etc.

TQM, an intangible investment not regarded as such by the economists is equally, if not more, important for economic growth. Japan could not be as successful without its huge investment in TQM. During 1987, I had an opportunity to study the Japanese economy success under the Oshikawa Fellowship Scheme sponsored by the Asian Productivity Organization (APO). The scheme included research visits to representative organizations in the manufacturing and services sectors in Japan. Useful information was also obtained from the Ministry of International Trade and Industry (MITI), which has earned its name as the 'invisible hand of the Japanese economic miracles'. It was observed that terms, e.g. 5-S, QCC, TPM (to be explained later) and TQM were part of the daily language and activities in most of the firms visited. Each before one walked inside the company, the environment would project an impressive image of quality. Inside the factories and offices places were neat and tidy with a lot of slogans, charts and pictures developed by the workers themselves. Even in their own work area, the workers tended to display some sort of control charts and other quality control tools to ensure that their processes were under control and to show that they were constantly improving them. TQM was integrated into companies' management practices and operations.

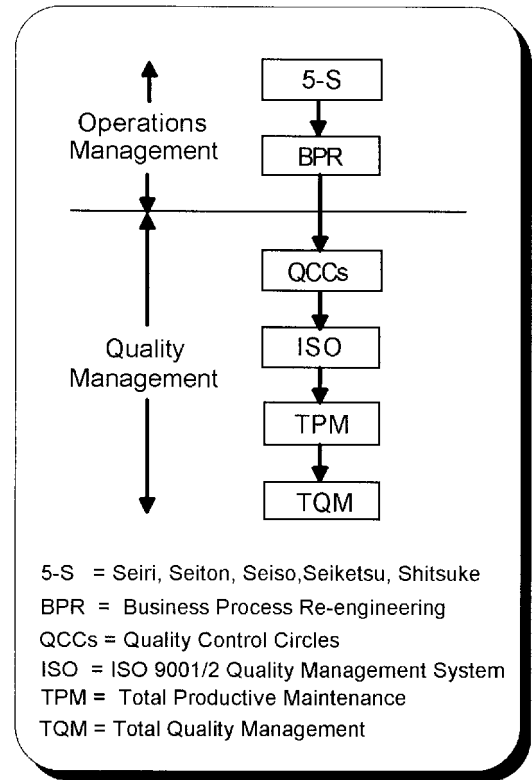


Figure 2. The TQMEX Model.

## 6. What is TQMEX?

The TQMEX Model advocates an integrated approach in order to support the transition to systems management which is an ongoing process of continuous improvement that begins when the company commits itself to managing by quality. The model illuminates the elements that form a base to the understanding of TQM philosophy and implementation of the process company-wide.

In order to have a systematic approach to TQM, it is necessary to develop a conceptual model. The model should be simple, logical and yet comprehensive enough for TQM implementation. It also has to sustain the changes in business environment of the new era. During my latest major overseas appointment as the first Quality Expert to the Malaysian Government in 1993, I was asked to develop a five-year Quality Plan to contribute to the country's industrialization programme. As a result of this assignment and my previous experience and research of some of the best TQM practices, I proposed this TQM Model. The idea was to develop a universally applicable step-by-step guideline by including recognized practices in TQM (figure 2).

### 6.1. Japanese 5-S practice (5-S)

The 5-S practice is a technique used to establish and maintain quality environment in an organization. The name stands for five Japanese words: *Seiri*, *Seiton*, *Seiso*, *Seiketsu* and *Shitsuke* (Osada 1991). The English equivalent, their meanings and typical examples are shown in the following table:

Japanese	English	Meaning	Typical example
Seiri	Structurize	Organization	Throw away rubbish
Seiton	Systematize	Neatness	30-second retrieval of a document
Seiso	Sanitize	Cleaning	Individual cleaning responsibility
Seiketsu	Standardize	Standardization	Transparency of storage
Shitsuke	Self-discipline	Discipline	Do 5-S daily

The 5-S technique has been widely practised in Japan. Most Japanese 5-S practitioners consider 5-S useful not just for improving their physical environment, but also for improving their thinking processes too. Apparently, the 5-S can help in all aspects of life. Many of the everyday problems could be solved through adoption of this practice. Unfortunately, unlike other quality tools and techniques, this basic but powerful technique for quality

improvement has not been known to the western world. To facilitate implementation, one can do a 5-S Audit based on a proprietary 5-S Checklist (Ho 1995).

### 6.2. Business Process Re-engineering (BPR)

Hammer and Champy (1993) define BPR as 'the fundamental rethinking and radical redesign of business processes, to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.' BPR challenges managers to rethink their traditional methods of doing work and commit themselves to a customer-focused process. Many outstanding organizations have achieved and maintained their leadership through BPR. Companies using these techniques have reported significant bottom-line results, including better customer relations, reductions in cycle time to market, increased productivity, fewer defects/errors and increased profitability. BPR uses recognized techniques for improving business results and questions the effectiveness of the traditional organizational structure. Defining, measuring, analysing and re-engineering work processes to improve customer satisfaction pays off in many different ways.

### 6.3. Quality Control Circles (QCCs)

A QCC is a small group of staff working together to contribute to the improvement of the enterprise, to respect humanity and to build a cheerful workgroup through the development of the staff's infinite potential. It has been the Japanese experience that 95% of the problems in the workshop can be solved with simple quality control methods, e.g. the seven quality control tools (Ishiwaka 1986). They are: Pareto diagrams, cause-and-effect diagrams, stratification, check sheets, histograms, scatter diagrams, and graphs and control charts. These tools will help QCCs to do brain-storming systematically and to analyse the problems critically. Furthermore, through logical thinking and experience, most problems can be solved. For instance, a proprietary problem-solving model, known as the 'S-S Method of Problem Solving' has been developed and used to solve the World Cup penalty-shoot knock-out problems in 1990 and 1994 (Ho and Cicmil 1996).

### 6.4. ISO 9000 (ISO)

The ISO 9000 family comprises 17 different standards which are listed. Out of these 17, only the ISO 9001, ISO 9002 and ISO 9003 are quotable standards, i.e. can be

audited against. In fact, some 99% of the ISO registered firms are registered under ISO 9001 or ISO 9002. In terms of the contents, ISO 9002 is a sub-set of ISO 9001. The remaining 14 standards are guidelines only. Therefore, for the purpose of this paper, only the ISO 9001 will be discussed.

ISO 9001:1994 is the Quality systems—Model for quality assurance in design, development, production, installation and servicing. It is the most comprehensive model of quality systems offered by ISO. ISO 9001 is significantly different from normal engineering standards, e.g. standards for units of measure, terminology, test methods, product specification, etc. They comprise certain generic characteristics of management practice, usefully standardized, giving mutual benefits to producers and users alike, in a WIN-WIN supplier/logistics relationship. Therefore, ISO 9001 requirements are complementary, not alternative, to the technical (engineering) standards' requirements.

ISO 9001 requirements certainly belong to a TQ process. They cannot take the place of a TQ effort because they do not necessarily have to deal with issues of leadership, strategic planning, benchmarking and employee empowerment—which are central to total quality. ISO 9001 does, however, provide a comprehensive approach to documenting quality processes and assessing their performance.

A survey of the total number of global ISO 9000 certifications has been carried out using the resources of the Mobil Oil Corporation. Key findings projected that, to the end of 1998, over 240 000 ISO 9000 certifications had been achieved in some 80 countries—a significant increase from the January 1993 and June 1994 figures of 27 824 and 70 517, respectively. Over the last decade, the UK companies have been leading in the field and accounted for over 40% of the world's registered firms.

### 6.5. Total Productive Maintenance (TPM)

In 1971, the Japan Institute of Plant Maintenance (JIPM) defined TPM as 'a system of maintenance covering the entire life of the equipment in every division including planning, manufacturing, and maintenance'. Because of its targeted achievement to increase productivity out of the equipment, the term TPM is sometimes known as Total Productivity Management (Ho 1995).

The JIPM runs the annual PM Excellence Award and they provide a checklist for companies applying for the award. There are 10 main items in the checklist:

- Policy and objectives of TPM;
- Organization and operation;

- Small-group activities and autonomous maintenance;
- Training;
- Equipment maintenance;
- Planning and management;
- Equipment investment plans and maintenance prevention;
- Production volumes, scheduling, quality and cost;
- Safety, sanitation and environmental conservation;
- Results and assessments.

## 7. Is TQMEX logical?

As Osada pointed out, 5-S is the key to total quality environment. Therefore, it should be the first step. BPR is concerned with re-defining and designing your business process in order to meet the needs of your customers effectively. It is more concerned with the business objectives and systems, and should follow as Step 2. QCCs are concerned with encouraging the employees to participate in continuous improvement and guide them through. They improve human resources capability to achieve the business objectives. Therefore, this should be Step 3. ISO 9000 is to develop a quality management system based on the good practices in the previous three steps. TPM is a result of applying 5-S to equipment based on a sound quality management system. In fact, ISO 9001 requires procedures for process control and inspection and testing equipment which are part of TPM. Therefore, TPM should be implemented in Step 5.

If the above five steps have been implemented successfully, the organization is already very close towards achieving TQM. This is because by then the organization will have had a good quality environment, well-defined business objectives and processes, a good quality culture, effective quality systems in place, and good equipment supports. It is a matter of choosing an appropriate TQM framework for further improvement.

This is an appropriate point to review the original hypothesis: 'Is TQM a necessary and sufficient condition for business excellence, and if yes, what does it entail?' Based on the foregone discussion, my answer is 'YES', and it should entail the elements of the TQMEX Model, which has included the ISO 9000. To justify my argument, I need to validate the TQMEX Model.

## 8. Validation of the TQMEX Model

One important feature of TQMEX is the ability to offer a step-by-step procedure in achieving TQM. Furthermore, each individual step can be used in its own right, and its results can be assessed separately.

This has a great advantage because companies can make a choice where to focus their effort, and even go back to the previous steps if they have not yet done so. The model is simple and flexible.

In an attempt to prove that all the TQMEX elements are sound management methods and good quality practices, myself and C. Fung (Ho and Fung 1995) have recently conducted an intensive questionnaire-based survey of UK and Japanese organizations which have been practising TQMEX. The following discussion will outline the findings.

In selecting the samples for this survey, the main criterion was that the companies chosen had already adopted some good quality practices. Since ISO 9000 gives the formal certification and guarantees that the company is quality conscious, this was the yardstick in the selection process. This survey had two aims: the first was to assess the TQM practices contained in the TQMEX Model of the UK firms (Stage 1) and the second was to draw a comparison of the TQM practices between leading UK and Japanese firms (Stage 2).

Stage 1 of this survey was conducted in August 1994 on a random sample of 1800 registered firms. About 10% of the valid replies were obtained from both the manufacturing and services industries: 51 manufacturing firms with an average employee number of 968 and 110 services firms with an average employee number of 283. The results of this survey have been published in Ho and Fung (1995).

Stage 2 of this survey was conducted in January 1995 on 200 leading UK and 200 leading Japanese firms. They are selected from the '*Times 1000—1995* and *Extel Financial Asia Pacific Handbook 1992*'. About 8% of the replies were valid. Since the main objective of the second stage was to do a comparative study, rather than establishing statistical significance, even this low feedback was considered adequate. From the feedback questionnaires received, 16 leading companies of approximately the same size (in terms of number of employees) were selected from each country for the analysis. This paper will focus on the Stage 2 results only.

## 9. Results: The UK and Japanese leading companies survey

To serve the purpose of this paper, only the comparative study of companies from the UK and Japan on TQM is discussed. In response to a question on perception on TQM, 50% of the UK firms and 60% of the Japanese firms surveyed perceive a need for TQM (figure 3). An ANOVA analysis shows that there is no significant difference between UK and Japanese leading firms. In other words, both UK and Japanese companies consider

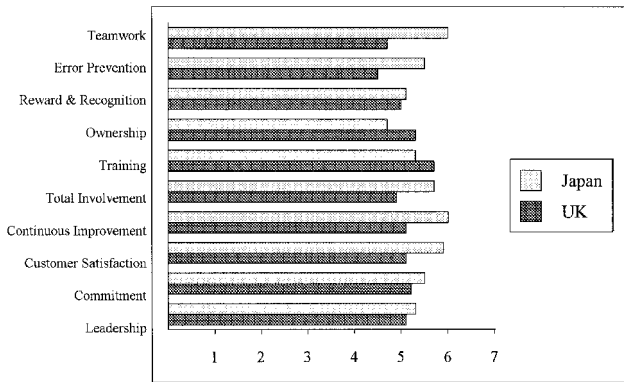


Figure 3. TQM activities (UK versus Japan).

all TQM activities as equally important. This gives evidence that TQM has become universal, not just in Japanese firms.

### 9.1. Open-ended questions on Quality Management System

The final three questions were aimed at acquiring suggestions on merits, drawbacks and possible improvements to their QMS (including ISO 9000 and/or TQM based). Since the UK companies have pioneered in the worldwide quest for ISO 9000, the responses from the Japanese firms only are included here to highlight the experience in transformation. The comments from the quality directors/senior executives of seven leading Japanese firms provide some important conclusions and recommendations for firms to consider, and they are summarized as follows:

#### (1) **Komatsu**

**Merit:** Increased concern about own performance and achievement.

**Drawback:** More likely to start losing cross-functional activity.

**Improvement:** Reporting system to top management and evaluation skill of top management about their subordinate.

#### (2) **Murata Machinery**

**Merit:** We may be able to practise design review and get technical documentation easily.

**Drawback:** None.

**Improvement:** We can get the uniformity for quality, but we may lose the individual superiority.

#### (3) **NEC Corporation**

**Merit:** Concentration of employee's consciousness towards company strategic targets in the competitive market.

**Drawback:** Only provide the basic conditions to

tender in the overseas market by ISO 9000 certification and keep the interest.

**Improvement:** Involve the meta-Quality concepts, e.g. safety, environment conservation, etc. and to deploy their targets to each division and subsidiary.

#### (4) **NKK Corporation**

**Merit:** Employee's ownership, quality improvement.

**Drawback:** Restructuring.

**Improvement:** Systematic policy deployment and evaluation.

#### (5) **Sanyo Corporation**

**Merit:** Consensus among senior executive. The spirit of being in the same boat. Promotion of improvement activity.

**Drawback:** Indirect sector (white-collar staffs) needs to adopt TQM on a greater scale.

**Improvement:** Emphasize human factors, leadership by top managers, through customer orientation.

#### (6) **Tokyo Electric Power Company**

**Merit:** Employees have worked with the concepts of market-in PDCA Cycle, more improvements achieved by QCCs.

**Drawback:** Head Office was left behind in the improvement activities. The form of the activities rather than the content has become the objective.

**Improvement:** Create and develop our own TQM system, need understanding among line managers. TQM should be implemented by line managers, not by TQM facilitators.

#### (7) **Toyota Motor Corporation**

**Merit:** All employees in their respective functions pledge to consider 'Customer first', master basic methodologies of QC, and put them into practice, as a result it can improve corporate robustness.

**Drawback:** Nothing for the time being.

**Improvement:** TQM concepts have to be continued for the establishment of the corporate foundations under any circumstances from now on, although it is natural that the emphasis of TQM activities should be changed according to the environmental changes, e.g. in focus on environmental conservation, marketing strategy or employee satisfaction.

## 10. TQM trend: The business excellence movement

In his 'Last Word Conference' in 1994 (Abraham 1995), Dr J. Juran predicted the future of quality as:



- quality competition will intensify with multinationals and common markets;
- there will be intense demands on suppliers;
- ISO 9000 will sweep across the world;
- Awards, e.g. Baldrige and European Quality Award, will supply intense stimulus and there will be a growth in awards world-wide.

Juran's predictions have happened and will continue for years to come, particularly the last two. Since the ISO 9000 world-wide explosion has been discussed already, I would like to concentrate on the latter. The best known quality awards are the Japan's Deming Prize, USA's Malcolm Baldrige National Quality Award (MBNQA), and the European Quality Award (EQA). Deming Prizes are almost exclusively won by Japanese firms, with the exception of three, i.e. Florida Light & Power, Taiwan Tube (Philips) and Lucent Technology (Power Division) (Cassidy 1996). The EQA and MBNQA are both excellent and robust models (Hakes 1995). If your organization is not linked to Japan, USA or Europe, you can still choose one of these kitemarks as your TQM framework, or you can use your own national quality award (if such exists).

Most likely, the choice will be driven by the location or parentage of your organization. If your organization is based in the USA or has a strong USA parent organization, then the MBNQA will probably be the most appropriate. If your organization is based in Europe, the EQA or its national derivatives e.g. the UK Quality Award) will be the most appropriate model as it will additionally allow for direct comparisons and benchmarking with other European-based organizations. Both of these models are comparable in scoring, and in most cases a 500 out of 1000 point score on the EQA model will equate to a similar score on the MBNQA model. In the final decision, geographic location will probably be the determinant of the model to be used.

After deciding on which of the kitemarks to adopt, the next stage is to implement the kitemark requirements effectively. The procedures for implementing TQM kitemarks are very similar to that of ISO 9000. However, the scope is broader than that of ISO 9000. Apart from the quality assurance system, TQM kitemark implementation should focus on quality improvement (as expressed in ISO 9004-4) and also customer care. One effective way to learn about kitemark implementation is from the example of a successful company.

Unlike ISO 9000, self-assessment models, e.g. the three mentioned above, are telling organizations WHAT they should do. It is up to the individual application to respond on HOW they did it and support with evidence. The TQMEX model can also be used as a process/system on HOW to achieve quality awards. An example for such a mapping on the EQA framework is shown in the appendix.

## 11. Conclusions

The fundamentals of ISO 9000 and TQM are revisited so as to provide a relevant perspective on business excellence. The concept of TQM entails the integration with corporate strategy, and a profound understanding and application of the four pillars of quality. Judging from the experience of the Japanese TQM movement, there is a need for a step-by-step approach towards TQ, as spearheaded by some of the approaches established in the country. As a result of literature review and exploratory research, a model called TQMEX (TQM EXcellence Model) has been developed based on sound TQM practices. The analyses of the survey results among 16 leading UK companies and 16 leading Japanese companies have provided evidence for the similarity and differences between the two countries' approach to TQMEX. Both UK and Japanese leading companies consider all TQM activities as equally important. This gives evidence that TQM has now become universal, not just aimed for Japanese firms.

Both the theoretical background, personal experience and results of the survey have highlighted the importance of the Japanese 5-S, BPR, QCC, ISO 9000 and TPM on TQM practice. They also prove the significance of the TQMEX model, i.e. all its elements are being practised by leading firms. Therefore, the conceptual framework of the model will be useful for those businesses wanting to excel. The findings are useful for firms wanting to benchmark against the business excellence of leading firms from Japan and the UK. It is further proposed that the TQMEX model can also be used as a process/system for achieving quality awards, e.g. the European Quality Award (EQA) framework. And, finally, the TQMEX Model proposed (encompassing 5-S, BPR, QCC, ISO 9000 and TPM), is a necessary and sufficient condition for the route towards business excellence.

### Appendix: Relationship between the EQA framework and the TQMEX Model

No.	Evaluation criteria: Assessment of ...	5 S	B P R	Q C C	I S O	T P M
1	Leadership (10%)					
1.1	Visible Involvement—How leaders visibly demonstrate their commitment to a culture of Business Excellence	✓			✓	
1.2	Support—How leaders support improvement and involvement by providing appropriate resources and assistance.			✓		✓
1.3	Customers and Suppliers—How leaders are involved with customers, suppliers and other external organizations.		✓		✓	
1.4	Recognition—How leaders recognize and appreciate people's efforts and achievements.	✓		✓		
2	Policy and Strategy (80%)					
2.1	Relevant Information—How policy and strategy are based on information which is relevant and comprehensive.		✓		✓	
2.2	Quality Values and Concepts—How policy and strategy are developed.		✓		✓	
2.3	Policy and Strategy Communication—How policy and strategy are communicated and implemented.			✓	✓	
2.4	Regular updating and improvement—How policy and strategy are regularly updated and improved.		✓		✓	
3	People Management (9%)					
3.1	Continuous Improvement Practices—How people resources are planned and improved.			✓		✓
3.2	Training, Recruitment and Career Progression—How people capabilities are sustained and developed.			✓	✓	
3.3	Targets for People and Teams—How people agree targets and continuously review performance.	✓		✓		✓
3.4	Involvement and Empowerment—How people are involved, empowered and recognized.	✓		✓		✓
3.5	Communication—How people and the organization have an effective dialogue.			✓		
3.6	Care for People—How people are cared for.	✓		✓		
4	Resources (9%)					
4.1	Financial—How you manage your financial resources effectively.		✓	✓		
4.2	Information—How you manage your information.	✓			✓	
4.3	Material—How you manage your material resources, fixed assets and supplies/suppliers.	✓	✓		✓	✓
4.4	Technology—How you identify and manage appropriate, alternate and emergent methods and technologies.		✓	✓		✓
5	Process (14%)					
5.1	Identifying Critical Processes—How you identify and define the key processes within your organization.		✓			✓
5.2	Managing Processes—How you manage ALL the processes within your organization.	✓		✓	✓	
5.3	Measures, Targets and Reviews—How you use all relevant information to review processes and set improvement targets.			✓	✓	
5.4	Innovation and Creativity—How you stimulate innovation and creativity in process improvement.		✓	✓		✓
5.5	Process Change—How you implement and evaluate process changes.		✓			
6	People Satisfaction (9%)					
6.1	Direct Results—Perception measures and results, i.e. judgement in relation to the satisfaction of its people.	✓		✓	✓	
6.2	Indirect results—Predicting, leading and influencing measures and results.		✓			
7	Customer Satisfaction (20%)					
7.1	Direct Results—Perception measures and results, i.e. judgement by the customers on products, services and customer relationships.		✓		✓	✓
7.2	Indirect Results—Predicting, leading and influencing measures and results, i.e. judgement relating to customer satisfaction.	✓	✓			
8	Impact on Society (6%)					
8.1	Direct Results—Perception measures and results, i.e. judgement by community at large of the organization's impact on society.	✓				✓
8.2	Indirect Results—Predicting, leading and influencing measures and results, i.e. judgement on 'Impact on Society'.	✓				✓
9	Results (15%)					
9.1	Direct Results—Financial, 'Bottom Line' results that indicate an organization's successes.		✓		✓	
9.2	Indirect Results—Non-financial key measures and the results of the key processes identified in Criteria 4 and 5 that are vital indicators of an organization's current and continuing success.	✓		✓		✓
Total no. of fits (out of 32) ...		13	14	16	17	13

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