

This article was downloaded by: [University of Nebraska]

On: 11 August 2010

Access details: Access Details: [subscription number 731634837]

Publisher Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Production Research

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713696255>

Modernization of the Malcolm Baldrige National Quality Award

S. M. Lee^a; K. M. Zuckweiler^b; S. Trimi^a

^a Department of Management, College of Business Administration, University of Nebraska-Lincoln, Lincoln, NE 68588-0491, USA ^b Department of Management, College of Business and Technology, University of Nebraska at Kearney, Kearney, NE 68849-4430, USA

To cite this Article Lee, S. M. , Zuckweiler, K. M. and Trimi, S.(2006) 'Modernization of the Malcolm Baldrige National Quality Award', International Journal of Production Research, 44: 23, 5089 — 5106

To link to this Article: DOI: 10.1080/00207540500161043

URL: <http://dx.doi.org/10.1080/00207540500161043>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Modernization of the Malcolm Baldrige National Quality Award

S. M. LEE*[†], K. M. ZUCKWEILER[‡] and S. TRIMI[†]

[†]Department of Management, College of Business Administration,
University of Nebraska-Lincoln, Lincoln, NE 68588-0491, USA

[‡]Department of Management, College of Business and Technology,
University of Nebraska at Kearney, Kearney, NE 68849-4430, USA

(Revision received March 2005)

Quality has been an important competitive strategy of organizations, especially since the 1980s when globalization became reality. In the USA, the Malcolm Baldrige National Quality Award (MBNQA) was established in 1987 to encourage organizations to deploy quality as a competitive strategy. It has recently been suggested that the MBNQA has lost sight of quality. This paper discusses the changing role of quality in the MBNQA criteria from 1988 to 2003 in approximately 5-year intervals in 1988, 1992, 1997 and 2003. The concept of quality is discussed in view of the changing global economy and technology. The evolving role of quality from order winner to order qualifier in the e-global economy is also discussed.

Keywords: Malcolm Baldrige National Quality Award; International quality awards; Competitive strategy; Evolution of quality

1. Introduction

The quality movement emerged as a strategic objective for firms to survive in a highly uncertain business environment characterized by rapid technological advances, global competition, and ever-demanding customers (Lee *et al.* 2003). The emerging e-global age has also resulted in a new form of business: 'value networked organizations (VNO) or a business-web' (Tapscott *et al.* 2000). VNO is a collaborative form of business where each member organization contributes to the value chain with its unique competencies. While VNO brings new flexibility and speed in adapting to the turbulent environment, quality management across the value chain presents a challenge to make the new form of business work. The challenge to develop a unified quality strategy for the VNO is more difficult when the value chain involves organizations across national borders (Rao *et al.* 1999).

As the strategic importance of quality spread among business organizations, governments also began to embrace it as a national competitive priority. Since 1950 in Japan, the annual Deming Prize (named after US quality guru W. Edwards Deming) has been awarded to manufacturing firms that demonstrate

*Corresponding author. Email: sleel1@unl.edu

excellence in product quality. In Europe, the European Foundation for Quality Management launched the European Quality Award (EQA) in 1991 to recognize organizations showing exceptional commitment to quality. In Australia, the Australian Quality Award (AQA) was instituted in 1988 to encourage organizations to develop and deploy effective quality principles and best practices.

In the USA, quality management became a national concern in the 1980s as many US firms could not compete effectively in the global market, especially in the face of the onslaught of Japanese firms in such critical industries as automobiles, consumer electronics and machine tools. In 1987, the US government launched the Malcolm Baldrige National Quality Award (MBNQA) to recognize firms achieving excellence in quality products and processes. Since then, most US firms and public organizations have implemented various quality programmes, including 44 states.

Since its inauguration in 1987, the MBNQA criteria have evolved over the years to reflect not only contemporary concepts of quality, but also new competitive strategies required to adapt to the changing global business environment. Early criteria of MBNQA emphasized quality engineering concepts which were consistent with the US's competitive need at that time. However, quality engineering concepts (e.g. measurement and data analysis of quality assurance standards, reduction of scrap, rework and warranty claims) prevalent in the 1988 criteria all disappeared by 1997. Business firms soon began to regard quality as an order-qualifier rather than an order-winner. Thus, MBNQA began to include items that reflect such strategic approaches as speed and customization (Lee and Lee 2002). The magnitude of changes has at times been such that some quality experts even wondered whether MBNQA is still about quality (Schonberger 2001, Collier *et al.* 2002).

The purpose of the present paper is to investigate the changing criteria of MBNQA over the years and evaluate the changing role of quality management as a competitive strategy. This paper will review the relevant literature, analyse the changing nature of MBNQA criteria since 1987, compare other global quality awards and draw a conclusion about the role of quality in the emerging e-global age.

2. Review of relevant literature

Quality management is an organizational effort to achieve world-class product/service quality and market success. There have been a series of quality management approaches over the years, including statistical quality control, company-wide quality management, total quality management (TQM), continuous improvement (CI), Six Sigma Quality, benchmarking and zero-defects management.

Most recent studies in quality management have focused on the measurement of constructs that are exploratory concepts for quality excellence (Adam 1994, Anderson *et al.* 1995, Samson and Terziovski 1999). Some researchers have applied structural equation modelling to quality-related constructs that have been suggested by numerous quality experts (Flynn *et al.* 1994, Dow and Sampson 1995, Powell 1995, Curkovic *et al.* 2000, Wilson and Collier 2000).

According to quality management gurus (Crosby 1979, Deming 1982, 1986, Ishikawa 1985, Juran 1993, Sashkin and Kiser 1993, Waldman 1994), successful quality management strategies require effective management leadership. Thus, it has

been widely accepted that leadership and support of upper management are critical ingredients of successful quality management in organizations. Saraph *et al.* (1989) and Beer (2003) also showed that the critical factors for quality management at the business unit level are divisional management leadership and quality policy, effectiveness of the quality department, training, product/service design, supplier quality, process management and operation. Many quality-related studies have further researched the dimensions of quality management (Saraph *et al.* 1989, Flynn *et al.* 1994, Anderson *et al.* 1995, Dow and Sampson 1995, Black and Porter 1996, Forza and Filippini 1998, Rao *et al.* 1999).

The generally recognized seven dimensions of quality, as outlined in the MBNQA criteria, are shown in figure 1 and can be summarized as follows.

2.1 Leadership

As for any management innovation or change, strong and committed leadership is essential for successful quality programmes (Deming 1982, 1986, Flynn *et al.* 1994). Leadership provides the energy and motivation for continuous improvement and innovation (Gibson 1990, Gryna 1991, Beer 2003). In MNBQA, leadership is defined as the guidance and visible participation that senior leaders provide in setting organizational values, directions, performance expectations and social responsibilities (US Department of Commerce National Institute of Standards and Technology 2003).

2.2 Strategic planning

This dimension represents the relationship between an organization’s quality planning and the overall organizational strategy (Deming 1986, Juran 1993, Lee and

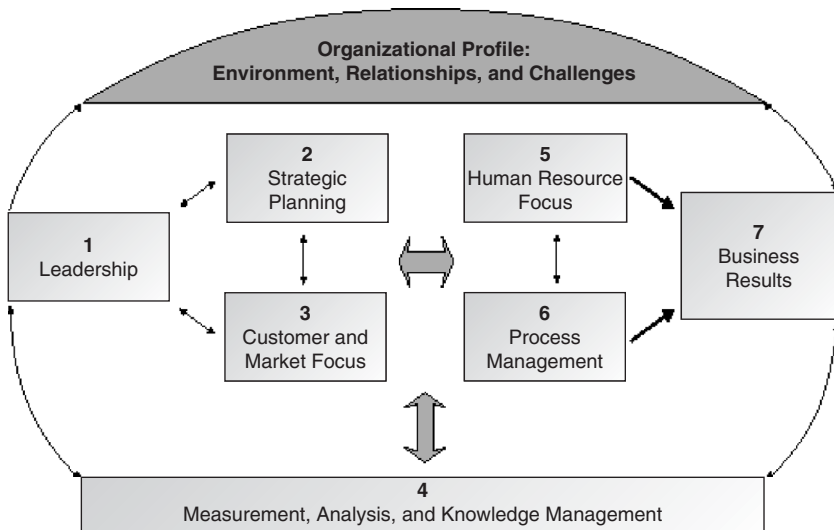


Figure 1. MBNQA criteria for performance excellence dimensions of quality (US Department of Commerce National Institute of Standards and Technology 2003).

Downloaded By: [University of Nebraska] At: 21:10 11 August 2010

Schniederjans 2002). To achieve quality excellence, quality improvement plans must be fully integrated into the corporate competitive strategy (Barclay 1993). Strategic quality planning should address development and deployment of action plans, along with clear priorities, and required resources.

2.3 Customer and market focus

This dimension examines the effectiveness of an organization's key processes for knowledge acquisition concerning current and future customers and markets (Garvin 1991, Schonberger and Knod 1997). The organization must have formal processes to research the ever-changing market conditions, customer requirements and expectations, and new approaches to improve customer relationships and satisfaction (Steeple 1992, US Department of Commerce National Institute of Standards and Technology 2003).

2.4 Measurement, analysis and knowledge management

This dimension is the newest dimension among the MBNQA criteria. It evaluates an organization's processes to measure its performance in terms of the scope, validity, and management of relevant data and information. It also measures the effectiveness of the firm's processes for information and knowledge management (US Department of Commerce National Institute of Standards and Technology 2003).

2.5 Human resource focus

Achieving and maintaining high levels of quality depend on the effective use of human talents and abilities (Choppin 1991, Harber *et al.* 1991, Steeples 1992). Human resource focus addresses key practices that the organization uses for creating and maintaining a high-performance workplace through developing, empowering and rewarding employees (US Department of Commerce National Institute of Standards and Technology 2003).

2.6 Process management

This dimension evaluates an organization's systematic approaches to value creation and quality management processes (US Department of Commerce National Institute of Standards and Technology 2003). It includes the quality of product design, manufacturing process, and product variance reduction (Gryna 1991).

2.7 Business results

This dimension is an overall score for quality management that measures results of customer focus, products and services, financial and market outcomes, human resources, organizational effectiveness, and governance and social responsibility (US Department of Commerce National Institute of Standards and Technology 2003).

Wilson and Collier (2000) applied the 1997 MBNQA model to a manufacturing environment and investigated its relationships with leadership, quality systems

and customer satisfaction/financial results. The results indicated that process management and information management were significantly related with financial results, while human resource management and strategic quality management were not. For customer satisfaction, they had the same results: process and information management were significant but human resource management and strategic quality management were not.

Unlike Wilson and Collier's research, the 2001 MBNQA model indicated that human resource management and process management directly affect business results (Lee *et al.* 2003). Customer and market management, strategic quality management, and quality information and analysis affect human resource management and process management. The 2001 MBNQA model emphasized quality information and analysis which influences strategic quality management, human resource management, and process management. In a recent study, Lee *et al.* (2003) used the 2001 MBNQA criteria and found that effective quality practices require management leadership and a close linkage between quality information and analysis and quality systems. Organizational success depends on not only adopting primary quality programmes (strategic planning, customer and market focus) but also supportive programmes (human resource and process management).

Since 1988, receiving the MBNQA has been viewed as a sign of quality excellence. It is interesting that TQM began to blossom at about the same time that MBNQA was first instituted. Thus, the similarity of MBNQA and TQM principles is not surprising. TQM is a very inclusive management strategy for improving organizational performance through each of the seven MBNQA criteria (Lee and Schniederjans 2002). Curkovic *et al.* (2000) conducted research to validate the MBNQA framework as constructs of TQM through structural equation modelling. Their results indicate that MBNQA indeed captures TQM constructs. Furthermore, the authors believe that to attain TQM status a firm must first accomplish a certain level of performance requirements. In other words, each of the required subsystems must be in place to implement a successful TQM system.

One of the fundamental principles of quality management is that of CI (continuous improvement or Kaizen) (Gaither and Frazier 2002). This principle, according to Deming (1986, p. 23), is that quality improvement must 'constantly and forever be undertaken to reduce cost and improve productivity'. CI in quality is an *evolutionary* approach based on incremental improvement over time.

While Japanese organizations have achieved a great success based on CI through Kaizen, CI assumes that the firm's current quality management processes are almost optimal or at least very effective. Many US firms found this assumption difficult to accept in the volatile business environment. The drastic change in the environment, especially globalization and phenomenal advances in information and communication technologies, allowed many new opportunities to restructure or redesign business processes.

Business Process Reengineering (BPR) was a *revolutionary* approach to process innovation for quality management and cost reduction. Theoretically, BPR can cause a quantum leap of improvement in quality while the process could be discontinuous or uncertain. Then, it is important for organizations to balance the revolutionary approach of BPR and the evolutionary approach of CI toward quality management. A recent study by Lee and Schniederjans (2002) indicates that

CI and BPR are not incompatible. The balance between the long-term oriented CI and the short-term-oriented BPR depends on a combined approach called 'endless quality improvement.

3. Evolution of the MBNQA criteria

Based on the research reviewed in the previous section, the MBNQA criteria are clearly an important set of quality management dimensions for any organization. This section will review the evolution of the MBNQA criteria from its inception in 1988–2003, in approximately 5-year intervals.

3.1 1988 Criteria

The first criteria for the MBNQA were published in 1988 in the 'Application Guidelines' brochure (US Department of Commerce National Institute of Standards and Technology 1988). This document explained the application process for the MBNQA, listed eligibility criteria, described the award process, and devoted the bulk of its pages to examination categories, subcategories and points. The original MBNQA criteria had seven categories and 42 subcategories, with points for each item that totalled 1000. All subsequent versions of the MBNQA also have seven categories and 1000 total points.

Table 1 presents a comparative listing of the 1988, 1992, 1997 and 2003 categories, subcategories and points. Within the 1988 criteria, leadership and information and analysis were the drivers of the five subsequent performance categories. The 1988 MBNQA criteria were, for the most part, prescriptive in nature. Brown (1997) states that the criteria 'prescribed certain leadership, planning, human resource and management practices'. The prescribed methods were included in the subcategories and examination items. The examination items, which form the lowest level of evaluation for the award, were included within the subcategories. There were 62 examination items distributed over the 42 subcategories.

The 1988 MBNQA's focus on data collection and analysis as a means of measuring and controlling process quality was consistent with the US's 'singular need to improve the quality of products and services' (Hertz 1997) to compete with foreign-manufactured products of higher quality. As US companies improved the quality of their products, they developed a company-wide emphasis on quality as a driver of business results.

3.2 1992 Criteria

The 1992 MBNQA criteria also consisted of seven categories totalling 1000 points; however, the number of subcategories was reduced from 42 in 1988 to 28. Within the 28 subcategories, there were 89 areas to address, which were roughly analogous to 1988's examination items. Thus, while the number of subcategories was reduced, the number of areas to address increased from 62 examination items in 1988 to 89 areas to address in 1992. Additionally, the language used in the 1992 MBNQA criteria changed from the prescriptive 'scoring criteria' used in 1988 to the less rigid, more descriptive 'areas to address.'

Table 1. MBNQA categories, subcategories and points.

	1988	1992	1997	2003
	1. Leadership, 150 points	1. Leadership, 90 points	1. Leadership, 110 points	1. Leadership, 120 points
	1.1. Senior corporate leadership, 50 points	1.1. Senior executive leadership, 45 points	1.1. Leadership system, 80 points	1.1. Organizational leadership, 80 points
	1.2. Policy, 30 points	1.2. Management for quality, 25 points	1.2. Company responsibility and citizenship, 30 points	1.2. Social responsibility, 40 points
	1.3. Management system and quality improvement processes, 30 points	1.3. Public responsibility, 20 points		
	1.4. Resource allocation and utilization, 20 points			
	1.5. Public responsibility, 10 points			
	1.6. Unique and innovative leadership techniques, 10 points			
	2. Information and analysis, 75 points	2. Information and analysis, 80 points	2. Strategic planning, 80 points	2. Strategic planning, 85 points
	2.1. Use of analytical techniques or systems, 15 points	2.1. Scope and management of quality and performance data and information, 15 points	2.1. Strategy development process, 40 points	2.1. Strategy development, 40 points
	2.2. Use of product or service quality data, 10 points	2.2. Competitive comparisons and benchmarks, 25 points	2.2. Company strategy, 40 points	2.2. Strategy deployment, 45 points
	2.3. Customer data and analysis, 20 points	2.3. Analysis and uses of company-level data, 40 points		
	2.4. Supplier quality and data analysis, 10 points			
	2.5. Distributor and/or dealer quality and data analysis, 10 points			
	2.6. Employee related data and analysis, 5 points			
	2.7. Unique and innovative information/analysis, 5 points			

(continued)

Table 1. Continued.

	1992	1997	2003
1988			
	3. Strategic quality planning, 75 points	3. Strategic quality planning, 60 points	3. Customer and market focus, 85 points
	3.1. Operational and strategic goals, 20 points	3.1. Strategic quality and company performance planning process, 35 points	3.1. Customer and market knowledge, 40 points
	3.2. Planning function, 20 points	3.2. Quality and performance plans, 25 points	3.2. Customer relationships and satisfaction, 45 points
	3.3. Planning for quality improvement, 30 points		
	3.4. Unique and innovative planning, 5 points		
	4. Human resource utilization, 150 points	4. Human resource development and management, 150 points	4. Measurement, analysis and knowledge management, 90 points
	4.1. Management and operations, 30 points	4.1. Human resource management, 20 points	4.1. Measurement and analysis of organizational performance, 45 points
	4.2. Employee quality awareness and involvement, 50 points	4.2. Employee involvement, 40 points	4.2. Information and knowledge management, 45 points
	4.3. Quality training and education, 30 points	4.3. Employee education and training, 40 points	
	4.4. Evaluation, incentive and recognition systems, 30 points	4.4. Employee performance and recognition, 25 points	
	4.5. Unique and innovative approaches, 10 points	4.5. Employee well-being and morale, 25 points	
	5. Quality assurance of products and services, 150 points	5. Management of process quality, 140 points	5. Human resource focus, 85 points
		5. Human resource development and management, 100 points	

<p>5.1. Customer input to products and services, 20 points</p> <p>5.2. Planning for new or improved products or services, 20 points</p> <p>5.3. Design of new or improved products and services, 30 points</p> <p>5.4. Measurements, standards and data system, 10 points</p> <p>5.5. Technology, 10 points</p> <p>5.6. Audit, 15 points</p> <p>5.7. Documentation, 10 points</p> <p>5.8. Safety, health and environment, 10 points</p> <p>5.9. Assurance/validation, 15 points</p> <p>5.10. Unique and innovative approaches, 10 points</p> <p>6. Results from quality assurance of products and services, 100 points</p> <p>6.1. Reliability and performance of products or services, 25 points</p> <p>6.2. Reductions in scrap, rework, and rejected products or services, 20 points</p>	<p>5.1. Design and introduction of quality products and services, 40 points</p> <p>5.2. Process management, product and service production and delivery processes, 35 points</p> <p>5.3. Process management, business processes and support services, 30 points</p> <p>5.4. Supplier quality, 20 points</p> <p>5.5. Quality assessment, 15 points</p> <p>6. Quality and operational results, 180 points</p> <p>6.1. Product and service quality results, 75 points</p> <p>6.2. Company operational results, 45 points</p>	<p>5.1. Work systems, 40 points</p> <p>5.2. Employee education, training and development, 30 points</p> <p>5.3. Employee well-being and satisfaction, 30 points</p> <p>6. Process management, 100 points</p> <p>6.1. Management of product and service processes, 60 points</p> <p>6.2. Management of support processes, 20 points</p>	<p>5.1. Work systems, 35 points</p> <p>5.2. Employee learning and motivation, 25 points</p> <p>5.3. Employee well-being and satisfaction, 25 points</p> <p>6. Process management, 85 points</p> <p>6.1. Value creation processes, 50 points</p> <p>6.2. Support processes, 35 points</p>
---	---	--	--

(continued)

Table 1. Continued.

	1992	1997	2003
1988			
6.3. Reductions in and claims, litigation and complaints related to quality, 25 points	6.3. Business processes and support service results, 25 points	6.3. Management of supplier and partnering processes, 20 points	
6.4. Reductions in warranty or field support work, 20 points	6.4. Supplier quality results, 35 points		
6.5. Unique or innovative indicators of quality improvements or economic gains, 10 points			
7. Customer satisfaction, 300 points	7. Customer focus and satisfaction, 300 points	7. Business results, 450 points	7. Business results, 450 points
7.1. Customer views of quality of products or services, 100 points	7.1. Customer relationship management, 65 points	7.1. Customer satisfaction results, 130 points	7.1. Customer-focused results, 75 points
7.2. Competitive comparison of products or services, 50 points	7.2. Commitment to customers, 15 points	7.2. Financial and market results, 130 points	7.2. Product and service results, 75 points
7.3. Customer service and complaint handling, 75 points	7.3. Customer satisfaction determination, 35 points	7.3. Human resource results, 35 points	7.3. Financial and market results, 75 points
7.4. Customer views of guaranties/warranties, 50 points	7.4. Customer satisfaction results, 75 points	7.4. Supplier and partner results, 25 points	7.4. Human resource results, 75 points
7.5. Unique or innovative approaches to assessing customer satisfaction, 25 points	7.5. Customer satisfaction comparison, 75 points	7.5. Company-specific results, 130 points	7.5. Organizational effectiveness results, 75 points
	7.6. Future requirements and expectations of customers, 35 points		7.6. Governance and social responsibility results, 75 points
Total points: 1000	1000	1000	1000

The framework for the 1992 MBNQA criteria identified four basic elements. Leadership served as the driving force behind creation of values, goals and systems. The next four categories: Information and Analysis, Strategic Quality Planning, Human Resource Development and Management, and Management of Process Quality, comprised the system that includes the set of well-defined processes for meeting quality and performance requirements. The Quality and Operational Results category measured the progress toward improving quality and company performance. All of these categories worked toward achieving Customer Focus and Satisfaction (Category 7).

Despite the somewhat linear description of quality improvement in the 1992 MBNQA framework, all categories were assumed to be interrelated and non-directional. The 1992 MBNQA criteria focused on strengthening the 'relationship between quality and other business management considerations: business planning, financial results, overall company effectiveness, innovation, and future orientation' (US Department of Commerce National Institute of Standards and Technology 1992, Award Criteria, p. 10). Some believe that the 1992 MBNQA model was the best in terms of clarity of the relationships between quality programmes and organizational performance (Collier *et al.* 2002).

3.3 1997 Criteria

When the MBNQA was created, provisions were included for annual review and improvement of the criteria and award processes to ensure that they remain relevant and reflect current thinking. The changes made for the 1997 MBNQA criteria represented the most extensive revision of the criteria to date (Brown 1997). According to Brown, one major change in the 1997 criteria was the shift in defining the important accomplishments of an organization. No longer was the focus primarily on customer satisfaction, but also emphasized financial results, productivity, safety and employee morale as critical outcomes of the firm's processes. In addition to revising the content of the criteria, the MBNQA categories were reordered and the number of subcategories substantially reduced. The 1997 criteria were grouped into two triads: Leadership (leadership, strategic planning, and customer and market focus); and Results (human resource focus, process management, and business results), plus the Information and Analysis category (US Department of Commerce National Institute of Standards and Technology 1997). The reduction in subcategories (from 42 in 1988 to 28 in 1992 to 20 in 1997) was a result of consolidation (Hertz 1997), rather than elimination of entire concepts.

As presented by Harry S. Hertz, Director of the National Quality Program of the National Institute of Standards and Technology (the organization responsible for the MBNQA), the revisions in the 1997 criteria highlight these shifts in the MBNQA concepts of quality (Hertz 1997):

- There has been a shift in emphasis from quality assurance of products and services to the current focus on process management and business results.
- The focus on strategic quality planning has given way to overall strategic planning.
- The early focus on customers has matured to a focus on customers and markets, with a need to understand not only today's customers, but also

tomorrow's customers and tomorrow's markets in a changing competitive and technological environment.

- Human resource utilization, with a component of employee quality training, has evolved into human resource development and management.
- A focus on supplier quality has given way to a focus on supplier and partnering arrangements and how these opportunities can improve the performance and capabilities of both parties.
- The emphasis on individual quality improvement activities evolved into a focus on cycles of evaluation and improvement in all key areas of an organization's operations.

3.4 2003 Criteria

The 2003 criteria, like all other MBNQA criteria, have seven categories and 1000 total points. The categories are nearly identical to the 1997 categories, with only Category 4 changing its title from Information and Analysis (1997) to Measurement, Analysis and Knowledge Management (2003), and Category 5 changing its name from Human Resource Development and Management (1997) to Human Resource Focus (2003). The subcategories are subtly different, reduced to 19 from 1997's 20. The most noticeable change among the subcategories is the elimination of subcategories specifically related to supplier and partnering processes and results. Taking an enterprise approach to quality improvement means incorporating a firm's suppliers into its operations and accounting for supplier and partner quality in the overall results of the firm. This change clearly reflects the emerging new business form of VNO or b-web as discussed above.

Interestingly, the 2003 Criteria for Performance Excellence booklet notes that one of the key characteristics of the 2003 criteria is that they are non-prescriptive and adaptable, and are presented as questions, rather than statements. This is a clear change from the original 1988 criteria, and is explained by 'the focus... on results, not on procedures, tools, or organizational structures... Nonprescriptive requirements are intended to foster incremental and major ('breakthrough') improvements, as well as basic change' (US Department of Commerce National Institute of Standards and Technology 2003, p. 6).

Table 1 presents a summary of MBNQA categories, subcategories and points for 1988, 1992, 1997 and 2003.

4. MBNQA criteria and the concept of quality

As has been discussed briefly, the MBNQA criteria reflect evolving concepts of quality at different times in the award's history. The greatest shift in focus occurred between the 1992 and 1997 criteria. This shift can be summarized as going from quality assurance to management of the firm's performance. In this way, the criteria have come to embody all aspects of total quality management.

However, Schonberger (2001) criticizes MBNQA for 'steadily mov[ing]... away from the ideals of quality management and quality engineering—away from "pure-play" quality', and goes on to say that 'the award's focus has been shifting away from quality management to general management'. Schonberger is correct.

MBNQA has indeed moved away from 'pure-play quality', as he defines it in quality assurance terms. Yet, instead of signalling a weaker quality award, this shift in focus reflects the globalization, digitalization and changing competitive landscape that US firms have had to adapt to over the last 15 years. A simple example of how one firm, Ford Motor Company, has marked this shift is in its advertising slogans. In the 1980s and early 1990s, Ford's slogan was 'Quality Is Job 1', which speaks to the quality assurance emphasis required for Ford's products to be competitive. Since 1999, Ford's slogan has been 'No Boundaries', which alludes to a broader global market and indeed a broader company focus on boundaryless innovation needed to compete in the global economy.

To assess the degree to which the MBNQA criteria and TQM overlap, popular textbooks of quality management and operations management were examined for information on total quality management and MBNQA. With respect to TQM, Evans and Lindsay (2005) state that the scope of TQM includes infrastructure, practices and tools and techniques. According to them, infrastructure includes leadership, strategic planning, human resources management, process management and data and information management. Practices are activities that are used within a management system to achieve performance objectives. Tools and techniques include a wide variety of IT and statistical methods used for planning, data collection, data analysis, problem solving and progress monitoring.

Hanna and Newman (2001) state that TQM has forced a shift from traditional analytic thinking, characterized by functional management and local performance measures, to holistic thinking, characterized by process management and global performance measures. Hanna and Newman (2001, p. 185) write: 'To fully understand their processes, firms that implement TQM must take advantage of both approaches [analytic and holistic]. For many companies, that means de-emphasizing functional management and local performance measures (such as departmental reject rates) in favour of process management and global performance measures (such as customer satisfaction)'.

Evans and Lindsay (2005, p. 120) put it most succinctly:

the word *quality* was judiciously dropped [from the MBNQA criteria] in the mid-1990s. For example, before 1994, the Strategic Planning category was titled 'Strategic Quality Planning. The change to 'Strategic Planning' signifies that quality should be a part of business planning, not a separate issue. Throughout the document, the term *performance* has been substituted for quality as a conscious attempt to recognize that the principles of total quality are the foundation for a company's entire management system, not just the quality system. . . . To this end, the most significant changes in the criteria reflect the maturity of business practices and total quality approaches. The criteria evolved from a primary emphasis on product and service quality assurance in the late 1980s, to a broad focus on performance excellence in a global marketplace by the late 1990s.

While Schonberger clearly believes that the MBNQA has lost a significant portion of its quality focus, the award is a mirror of the changing business environment and reflects a contemporary understanding of competitive strategies. Today, cost and quality have become the market entry requirements in the global economy. They are necessary conditions but not sufficient conditions. Today, business firms must also pursue speed and customization as competitive strategies (Lee and Lee 2002). The evolving nature of the MBNQA criteria reflects this trend.

The early versions of the MBNQA criteria indicate that quality is considered an order-winner. That is, products and services are selected by customers based, at least in part, on their relative quality. Companies that cannot meet customer expectations of quality will not win orders. Bentley (1991) states that product quality is essential, and cites the example of Perrier, whose 'quality assurance process in their manufacturing operation was seriously flawed' (p. 35) resulting in loss of customers.

Over time, however, quality became less an order-winner and more an order-qualifier. Onwubolu *et al.* (1999, p. 114) write, "customers now take it for granted that their suppliers will supply a quality product or service", Hines (1995) proposes a five-stage model of strategic competitive positioning where quality-based competition is the second stage, followed by close competition, strategic partnerships and world class. Arguably, the MBNQA criteria mirror this evolution in competitive positioning, with the original criteria focusing on quality-based competition and evolving over the years to the 2003 criteria, which focus on strategic partnerships and world class. Hines (1995) notes that the latter stages in the model require companies to work closely with suppliers and partners to develop and produce products that meet customers' needs. Quality is not ignored in the latter stages of Hines' model, it simply becomes an order qualifier instead of a primary competitive dimension. This shift in the role of quality and corresponding organizational emphasis is captured in the evolution of the MBNQA criteria.

5. Comparison of quality awards: MBNQA, Deming Prize, European Quality Award and Australian Quality Award

In addition to the MBNQA, there are three other major global quality awards. As previously mentioned, the Deming Prize is awarded to Japanese companies and the EQA and AQA are awarded to companies in their respective regions. These four quality awards are similar in many ways. They also have some notable differences. Together their similarities and differences illustrate current world concepts of quality. To facilitate comparative analysis, a brief description of the Deming Prize, the EQA and the AQA is presented.

5.1 Deming Prize

The Deming Prize is awarded by the Union of Japanese Scientists and Engineers. The award was established in 1951 in Japan to honour organizations, both public and private, for the successful implementation of quality control activities. It does not provide a framework for organizing criteria. Candidates for the prize are evaluated on ten equally weighted points: policies, organization, information, standardization, human resources, quality assurance, maintenance, improvement, effects and future plans. All candidates must address all points in their application.

5.2 European Quality Award

The EQA is presented by the European Foundation for Quality Management. It originated in 1991 to honour outstanding European businesses. Unlike the other awards, the EQA is a regional award that involves 16 countries: Austria, Belgium,

the Czech Republic, Denmark, Germany, Hungary, Ireland, Italy, the Netherlands, Norway, Portugal, Russia, Slovenia, Spain, Turkey and the UK. The EQA criteria are split into enablers and results. The quality improvement enablers are leadership, people management, policy and strategy, resources and processes. The results categories are people satisfaction, customer satisfaction, impact on society and business results. The model is structured such that effectively implementing the enablers impacts the results. Similar to the MBNQA, the EQA continually reviews and revises its criteria.

5.3 Australian Quality Award

The AQA is awarded by the Australian Quality Council. The AQA originated in 1988, and despite the concurrent time frame, was developed independently from the MBNQA. The award is part of an Australian programme to 'develop and deploy a comprehensive and contemporary body of quality principles and best practices' (Vokurka *et al.* 2000, p. 43). The AQA criteria are comprised of seven categories: leadership; strategy, policy and planning; information and analysis; people; customer focus; quality of process, product, and service; and organizational performance. The AQA criteria are benchmarked to the MBNQA and EQA criteria. Although the AQA criteria are similar to the MBNQA and the EQA, the Australian Quality Award has an increased emphasis on multicultural management (Vokurka *et al.* 2000).

5.4 Comparative analysis of the awards

The aforementioned awards all have common criteria, although the weightings of various criteria differ among the awards. All of the awards emphasize business results. Each award also places value on continuous improvement, customer-driven quality through streamlined processes, product design, leadership, human resources development and strategic planning (Vokurka *et al.* 2000). The MBNQA, EQA, and AQA all focus on organizational quality management. The Deming Prize, by contrast, emphasizes organizational quality control. Further, each award reviews and revises its criteria periodically in an effort to remain abreast of concepts and understanding of quality practices and improvement.

Each award has its own unique features. The Deming Prize is the oldest of the awards, and retains the most 'pure-play' understanding of quality. The EQA is the only regional award among these four and places a relatively greater emphasis on a company's impact on society. The AQA is noted for its solid union support (Evans and Lindsay 2005). The MBNQA serves as a model and benchmark for the EQA and AQA.

The synthesis of criteria between the four quality awards indicates that a certain level of agreement has been reached among the participating countries as to what defines quality from a business perspective. While the four awards differ in the relative importance of various criteria, these differences are far outweighed by the commonalities among the concepts of quality and processes by which quality efforts are measured and documented. As champions of quality efforts, it is fitting that the awards regularly review and revise their understanding of quality and the criteria by which it is measured. The revisions themselves track the shifts in

contemporary concepts of quality and provide a snapshot of the role of quality in business competition.

6. Conclusion

MBNQA is very much about quality. The appearance of the award criteria has changed since MBNQA's inception, yet the underlying commitment to quality excellence has remained steadfast. The change in appearance mirrors the changes in the competitive environment that have shifted the role of quality from an order winner to an order qualifier. This realizes the intent of TQM that quality be integrated into the workings of the entire company, not just the shop floor.

MBNQA's emphasis on performance results parallels the notion that TQM is essential for companies to achieve long-term financial success. This is evident in the performance of the Baldrige Index over the past 11 years. The Baldrige Index is a fictitious stock fund comprised of publicly traded US companies that have received the MBNQA. An index of the stock performance of the previous 10 years' award winners is compared with the performance of the S&P 500 over a calendar year. Since the Baldrige Index was first calculated in 1995, the index of MBNQA winners has outperformed the S&P 500 in nine of the 11 years, in some years by as much as 6:1 (National Institute of Standards and Technology 2004).

Quality is no longer just quality assurance of products and services but the overall quality of an organization's competitive strategies including customer relationship management, corporate social responsibilities, knowledge management, well-being of employees, and overall financial results. Today, many organizations form VNO with collaborating partner firms, often across national boundaries. The competitive capabilities of these firms are based on the combined core competencies of VNO rather than that of independent firms. Thus, the new concept of quality needs to be broad and all encompassing. The evolution of MBNQA since its inception clearly shows this broadening concept of quality. The MBNQA award criteria are all about quality, perhaps in a more holistic and inclusive way.

References

- Adam, E.E., Alternative quality improvement practices and organization performance. *J. Oper. Manag.*, 1994, **12**, 27–44.
- Anderson, J.C., Rungtusanatham, M., Schroeder, R.G. and Devaraj, S., A path analytic model of a theory of quality management underlying the Deming management method: preliminary empirical findings. *Dec. Sci.*, 1995, **26**, 637–658.
- Barclay, C.A., Quality strategies and TQM policies: empirical evidence. *Manag. Int. Rev.*, 1993, **33**, 87–98.
- Beer, M., Why total quality management programs do not persist: the role of management quality and implications for leading a TQM transformation. *Dec. Sci.*, 2003, **34**, 623–642.
- Bentley, J., Manufacturing strategies for the 1990s: a framework for innovative decision-making. *Euro. Bus. J.*, 1991, **3**, 31–38.
- Black, S.A. and Porter, L.J., Identification of the critical factors of TQM. *Dec. Sci.*, 1996, **27**, 1–21.

- Brown, M.G., Measuring up against the 1997 Baldrige criteria. *J. Qual. Participat.*, 1997, **20**, 22–27.
- Choppin, J., *Quality Through People — A Blueprint for Proactive Total Qual. Manag.*, 1991 (Pfeiffer: San Diego, CA).
- Collier, D.A., Goldstein, S.M. and Wilson, D.D., A thing of the past? *Qual. Progr.*, 2002, **35**, 97–104.
- Crosby, P.B., *Quality is Free*, 1979 (McGraw-Hill: New York).
- Curkovic, S., Melnyk, S., Calantone, R. and Handfield, R., Validating the Malcolm Baldrige National Quality Award framework through structural equation modelling. *Int. J. Prod. Res.*, 2000, **38**, 765–791.
- Deming, W.E., *Out of the Crisis*, 1986 (MIT Press: Cambridge, MA).
- Deming, W.E., *Quality, Productivity and Competitive Position*, 1982 (MIT Press: Cambridge, MA).
- Dow, D. and Sampson, D., *Exploding the Myth: Do All Quality Management Practices Contribute to Superior Quality Performance?*, 1995 (Melbourne Business School Press: Melbourne).
- Evans, J.R. and Lindsay, W.M., *The Management and Control of Quality*, 6th ed., 2005 (South-Western: Cincinnati, OH).
- Flynn, B.B., Schroeder, R.G. and Sakakihara, S., A framework for quality management research and an associated measurement instrument. *J. Oper. Manag.* 1994, **11**, 339–366.
- Forza, C.K. and Filippini, R., TQM impact on quality conformance and customer satisfaction: a causal model. *Int. J. Prod. Econ.*, 1998, **55**, 1–19.
- Gaither, N. and Frazier, G., *Operations Management*, 9th ed., 2002 (South-Western: Cincinnati, OH).
- Garvin, D.A., How the Baldrige award really works. *Harvard Bus. Rev.*, 1991, **69**, 80–93.
- Gibson, T.C., Helping leaders accept leadership of total quality management. *Qual. Prog.* 1990, **23**, 45–47.
- Gryna, F.M., The quality director of the '90s. *Qual. Prog.*, 1991, **24**, 51–54.
- Hanna, M.D. and Newman, W.R., *Integrated Operations Management: Adding Value for Customers*, 2001 (Prentice-Hall: Upper Saddle River, NJ).
- Harber, D., Marriott, F. and Indrus, N., Employee participation in TQC: an integrative review. *Int. J. Qual. Reliabil. Manag.* 1991, **8**, 24–34.
- Hertz, H.S., The Criteria: a looking glass to Americans' understanding of quality. A 10th anniversary retrospective on the Baldrige Award criteria. *Qual. Prog.* 1997, **30**, 46–48.
- Hines, P., Integrated materials management: a post-Poterian paradigm?, in *Proceedings of the 2nd International Conference on the PSEER. Revolution in Purchasing: The Challenge of Change*, University of Bath, Bath, UK, 1995, pp. 145–165.
- Ishikawa, K., *What is Total Quality Control? The Japanese Way*, 1985 (Prentice-Hall: New York).
- Juran, J.M., Why quality initiatives fail. *J. Bus. Strat.*, 1993, **14**, 35–38.
- Lee, S.M. and Lee, C., E-company CEO websites: contents and information value. *Manag. Dec.*, 2002, **40**, 158–167.
- Lee, S.M., Rho, B.H. and Lee, S.G., Impact of Malcolm Baldrige National Quality Award criteria on organizational quality performance. *Int. J. Prod. Res.*, 2003, **41**, 2003–2020.
- Lee, S.M. and Schniederjans, M.J., Reengineering quality management for endless quality improvement. *Int. J. Manag. Lit.*, 2002, **2**, 17–28.
- National Institute of Standards and Technology, *TechBeat*, 2004. Available online at: http://www.nist.gov/public_affairs/techbeat/tb2004_0423.htm#quicklinks
- Onwubolu, G.C., Haupt, W., De Clercq, G. and Visser, J., Production management issues in developing nations. *Prod. Plan. Contr.*, 1999, **10**, 110–117.
- Powell, T.C., Total quality management as competitive advantage: a review and empirical study. *Strat. Manag. J.*, 1995, **16**, 15–37.
- Rao, S.S., Solis, L.E. and Raghunathan, T.S., A framework for international quality management research: development and validation of a measurement instrument. *Total Qual. Manag.* 1999, **10**, 1047–1075.

- Samson, D. and Terziovski, M., The relationship between total quality management practices and operational performance. *J. Oper. Manag.* 1999, **17**, 393–409.
- Saraph, J.V., Benson, G.P. and Schroeder, R.G., An instrument for measuring the critical factors of quality management, *Dec. Sci.*, 1989, **20**, 810–829.
- Sashkin, M. and Kiser, K.J., *Putting Total Quality Management to Work*, 1993 (Berrett-Koehler, San Francisco, CA).
- Schonberger, R.J., Is the Baldrige Award still about quality? *Quality Digest*, 2001. Available online at: <http://www.qualitydigest.com/dec01/html/baldrige.html>
- Schonberger, R.J. and Knod, E.M., *Operations Management*, 6th ed., 1997 (Irwin: Chicago, IL).
- Steeple, M.M., *The Corporate Guide to the Malcolm Baldrige National Quality Award: Proven Strategies for Building Quality into Your Organization*, 1992 (Business One Irwin, Homewood, IL).
- Tapscott, D., Ticoll, D. and Lowy, A., *Digital Capital: Harnessing the Power of Business Webs*, 2000 (Harvard Business School Press: Cambridge, MA).
- US Department of Commerce National Bureau of Standards, *Malcolm Baldrige National Quality Award Application Guidelines 1988*, 1988 (US DoCNBS: Washington, DC).
- US Department of Commerce National Institute of Standards and Technology, *Malcolm Baldrige National Quality Award 1992 Award Criteria*, 1992 (US DoCNBS: Washington, DC).
- US Department of Commerce National Institute of Standards and Technology, *Malcolm Baldrige National Quality Award Criteria for Performance Excellence 1997*, 1997 (US DoCNBS: Washington, DC).
- US Department of Commerce National Institute of Standards and Technology, *Malcolm Baldrige National Quality Award Criteria for Performance Excellence 2003*, 2003 (US DoCNBS: Washington, DC).
- Vokurka, R.J., Stading, G.L. and Brazeal, J., A comparative analysis of national and regional quality awards. *Qual. Prog.*, 2000, **33**, 41–49.
- Waldman, D.A., The contributions of total quality management to a theory of work performance. *Acad. Manag. Rev.*, 1994, **19**, 510–536.
- Wilson, D.D. and Collier, D.A., An empirical evaluation of the Malcolm Baldrige National Quality Award causal model. *Dec. Sci.*, 2000, **31**, 361–390.