MBNQA Criteria and Performance Measurement: Review, Critique, and Research Agenda

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Abstract

The paper presents an overview of performance measurement in healthcare organizations. The objective is to measure the organizational performance in a healthcare organization. The literature review suggest that the performance measurement in healthcare organizations is complex and is influenced by both the internal and external customer. There is a need to find out comprehensive frameworks that are suitable for healthcare settings. The paper provides a brief review of the existing performance measurement frameworks. This paper also critically explores the changing role of quality in the MBNQA criteria from 1988 to 2008 at approximately five year intervals that are 1988, 1992, 1997, 2003 and 2008. In recent years there is an increasing emphasis on corporate culture and globalization and therefore it is necessary for healthcare organizations to target in the area of organizational performance. On the basis of review, a suitable performance measurement system criterion in healthcare organizations is discussed. This issue is significant because of the concurrent view amongst various researchers in services management that there are both hard and soft issues reflecting, the lack of strategic thinking and goal clarity, necessitating a measurement system that focuses on application of a comprehensive measurement system in service organizations, especially in healthcare. The paper concludes by highlighting the dearth in services management research regarding focus on service quality and performance through an integrated perspective.

Keywords: *Performance measurement, comprehensive frameworks, healthcare organizations, MBNQA criteria.*

Introduction

The concise oxford dictionary definition to 'performance' refers to, 'the act or process of performing' or 'carrying out'. Performance in relation to healthcare organization is how its operations and management process, are carried out for customer satisfaction and the ways of successful achievement of organizational goals. Performance, like quality and excellence, can be measured using several different criteria, such as evaluation of market share, design of products and services, speed of the service provision, number of cases completed, overall net profit ratios and customer satisfaction surveys. Kast and Rosenzweing (1974) suggested incorporating efficiency and effectiveness analysis to assess the organizational performance. Venkatraman and Ramanujam (1988) contended that organizational performance includes financial performance, business performance and organizational effectiveness. The performance of a healthcare organization includes patient satisfaction, quality of care, professional development, teaching, research ,ability to attract resources, ability to comply with budget constraints, public image, links with professional bodies, cost containment, satisfaction of unit, efficiency of unit and corporation and assistance to other units. Donnabedian (1980) suggested that healthcare organization quality can be enhanced through structure, process and outcomes measure. Stewart and Locamy (2001) believed that healthcare performance systems need to measure more than just administrative functions, because meeting customer expectation is critical to success in today's healthcare market place. Li (1997) describes

that performance measurement criteria in healthcare organizations includes internal measures and external measures based upon cost and quality. Kaplan and Norton (1996) have proposed the use of Balance Score Card (BSC), as a tool for performance measurement in business organizations for more than a decade. It focuses on four important areas of performance: the customer perspective; internal operations; innovation and learning; and financial perspective. There is a strong thrust for the healthcare organizations to be more productive in meeting the healthcare needs of the customer due to growing demand for quality performance in healthcare organizations.

Healthcare Organization

Healthcare organization is an integral part of social and medical organization, the function of which is to provide for the population complete healthcare, both curative and preventive, and whose out-patient services reach out to the family and its home environment. The healthcare organization is also a centre for the training of health workers and Biosocial Research (World Health Organization) 2000. It is an institution for medical facility, primarily intended, appropriately staffed, and in circumscribed field or fields of restorative medical care, together with bed-care, nursing care and dietic service to the patients requiring such care and treatment (Blakiston's New Gould Medical Dictionary). It is an institution suitably located, constructed, organized, staffed to supply scientifically, economically, efficiently and unhindered, all or any recognized part of the complete requirements for the prevention, diagnosis and treatment of physical, mental and medical aspects of social ills with functioning facilities training the new workers in many special professions and technical and economical fields, essential to discharge its proper function and adequate contacts with physicians, other hospitals, medical schools and accredited health agencies engaged in better health programmes (Dorland Medical dictionary). A hospital is an institution for care, cure and treatment of the sick, and wounded for the study of diseases and the training of doctors and nurses (Steadman's Medical Dictionary). The healthcare business will become more efficient, if physicians come together building management teams and working together with administrations (Selvy, 1993)

Healthcare organisations have a defined structure. Ovreveit (2000) discusses the differences between healthcare and many industries with quality leadership, computer support, better training, structured team work, communication, and measurement which are critical for healthcare organisations. The hospitals as healthcare organizations are involved in preventive, curative, palliative or rehabilitative service. The constituents of a Healthcare organization includes: doctors who provide the medical treatment; nurses who take care of peripheral treatment; patients who are ultimate customers; paramedical staff, which provide support services to the medical staff; and non -medical staff, which provide maintenance, ancillary, supportive, administrative and other services. Performance measurement in healthcare organizations needs to focus on all these stake holders.

Overview of Performance Measurement Frameworks

Performance measurement can be defined as "evaluating how well organisations are managed and the value they deliver for customers and other stakeholders" (Moullin, 2004). One is the performance assessment framework included in the NHS Plan, while another is the Public Sector Scorecard, which adapts Kaplan and Norton's balanced scorecard for public sector organizations. According to Moullin (2006), the public sector scorecard measures an organization's

performance on five perspectives: (1) the achievement of its strategic objectives (2) Service user/stakeholder satisfaction (3) Organizational excellence (4) Financial targets (5) Innovation and learning. Because performance measurement is itself part of how an organization is managed, it too has to provide value to customers and other stakeholders. Performance measurement has become something of an industry in recent years. Moullin (2002) offers a clear link between performance measurement and organizational excellence. He defines it as "organizational excellence is outstanding practice in managing the organizations and delivering value for customers and other stakeholders". He describes that an organisation needs to know how it is perceived by all key stakeholders and being explicit about this in the definition will encourage organisations to measure stakeholder perceptions. The design of an effective performance measurement system, that includes the selection of appropriate measures and approaches for analyzing results, is central to aligning an organization's operations with its strategic direction. The development of a performance measurement system in management has followed a path that has been influenced by the general push to improve quality of service while meeting cost parameters. Bititcti et al. (2000) identify that performance measurement system needs to have the following characteristics: being sensitive to changes in the external and internal environment of an organization; reviewing and reprioritizing internal objectives when the changes in the external and internal environment are significant enough; deploying changes to internal objectives and priorities to critical parts of the organization, thus ensuring alignment at all times; and ensuring that gains achieved through improvement programs are maintained. Keegan et al.(1989) present a balanced performance measurement matrix. This approach includes measures that include financial as well as non-financial indicators. However, the matrix could have been developed further to incorporate certain elements of lead measures, refined, within their dimensions. Lead measures are those measures that focus on analyzing forward looking, predictive and future performance comparisons. Further, the matrix does not make explicit links between different dimensions of business performance, which makes the measurement of performance of a system complex. Azzone et al. (1991) have attempted to be more prescriptive, by proposing a detailed and specific performance measurement framework based on time. These measures consider internal configuration and external configuration as dimensions of performance that reflect the efficiency and effectiveness of the organization. This framework has the potential to respond to diversity or change and takes into consideration the lead performance dimensions to enable a better competitive advantage.

The performance pyramid system (PPS) was originally developed by Judson (1990) and later improved by Lynch and Cross (1991). This framework distinctly ties together the hierarchical view of business performance measurement with the business process view. It is also useful for describing how objectives are communicated and how measures can be rolled up at various levels in the organization. This system monitors performance at different levels of organization. It makes clear-cut difference between measures that are of interest to external parties – customer satisfaction, quality and delivery, and measures that are primarily of interest within the business – products, cycle time and waste. Bond (1991) argues that direct personnel measures have not been considered in this approach as well as in balanced scorecard approach. Hudson et al. (2001) outline the main problem with this approach. He has identified that this approach fails to specify the details relating to the form of measures of

performance or the process for developing them, with no apparent scope for lead measures of performance. Kaplan and Norton (1992) present a balanced scorecard framework for measuring the performance of an organization. The balanced scorecard approach allows the managers to look at a business from four important perspectives – financial perspective, internal perspective, customer perspective and learning and growth perspective. Neely et al. (2001) identify that the strength of this framework is the way in which it integrates different classes of organizational performance. The balanced scorecard shows a multi-faceted view of an organization's performance. This framework explicitly links different dimensions of business performance measurement to organizational strategy and integrates four ways of looking at performance of the organization. Anthony and Govindarajan (1998) comprehend that it is a tool for focusing an organization, improving communication, setting organizational objectives and providing feedback on strategy. It also measures how employees perform in relation to corporate strategy. The balanced scorecard is conceptually and intuitively appealing. However, the culture and needs of an organization need to be considered before designing a balanced scorecard. Neely et al. (1995) state that there is a serious flaw in the absence of competitiveness dimension in this framework, which is also outlined by Fitzgerald et al. The balanced scorecard also shows a lack of consideration to the measurement of human resources, employee satisfaction, supplier performance, product/ service quality and environmental/ community perspective. Failure of the scorecard to consider these dimensions limits its comprehensiveness. An additional deficiency outlined by Hudson et al. (2001) is the lack of integration between the top level, strategic scorecard and operational level measures, which makes the execution of strategy problematic. Furthermore, it fails to specify a user centered development process. It is evident from the balanced scorecard that some reference is made to lead performance measures within the non-financial dimensions like innovation, learning, and customers. Therefore, lead elements were present in this approach, but were not fully developed. This framework is conceptually appealing and useful, as it highlights the difference between input, process, output and outcome measures. Brown (1996) argues that each stage of this framework is the driver of performance for the next. The framework develops the concept of linking measures through cause and effect relationships. Lead benchmarking can be included within Brown's input and processing dimensions in order to create better output and outcome goals and results for organizations. Neely (2002) and Kennerley and Neely (2001) outline that the performance prism is a multi-faceted framework, which attempts to address the shortcomings of the frameworks that are currently available. Neely argues that the performance prism can be considered as a second-generation performance management framework. The framework has been deliberately designed as highly flexible so that it can provide a broad as well as narrow focus. The performance prism consists of five interrelated perspectives namely stakeholder satisfaction, strategies, processes, capabilities and stakeholder contributions.

Keegan et al. (1989) outline three distinct steps for developing performance measurement system: (1) defining strategic objectives of the firm and deciding how they can be translated into divisional goals and individual management actions; (2) deciding what to measure; and (3) installing performance measurement system into management thinking, possibly through the budgeting process. Wisner and Fawcett (1991) suggest a nine-step process for performance measurement system design. This process is similar to that of the process suggested by Keegan et al. (1989), but it makes explicit that

the system be regularly reviewed and updated. Kaplan and Norton (1992) pay no attention to the design of performance measurement system, but they develop an eight-step process, which they believe enables management to design balanced measurement systems. A more dynamic approach to performance measurement design needs to be developed to withstand the evolving changes in organizational performance measures. Beamon (1999) presents a set of characteristics that are found in effective performance measurement systems, and can therefore be used in evaluation of the measurement systems. These characteristics include: inclusiveness (measurement of all pertinent aspects), universality (allow for comparison under various operating conditions), measurability (data required are measurable), and consistency (measures consistent with organization goals). However, the characteristics suggested by Beamon do not consider applicability, that is the extent to which the measurement system is applicable. According to the framework proposed by WHO (2000) performance is equivalent to the concept of efficiency. It is a function of the system's contributions to intrinsic goals taking into account the inputs used to achieve them. The health system contributes towards many outcomes that are socially desirable, including improving health, educational attainment, and individual incomes. After reviewing different performance measurement models, it has been observed that the WHR performance measurement framework includes lead performance measure dimension as well as dimensions which will show effectiveness parameters. The performance measurement parameters can be categorized into the following three categories: (1) efficiency (2) effectiveness and (3) flexibility. The first dimension, that is, efficiency is a parameter that is already included in WHO (2000). This parameter measures the output obtained in relation to consumption of input (resources). This parameter also appears in Fitzgerald et al. (1991) model in determinants heading as resource utilization. Efficiency measure deals with the success with which hospital management uses its funds or resources to produce outputs or outcomes. This is measured, wherever possible, in terms of inputs by output. Efficiency may be measured in terms of quantity of output (highest level of output for a given set of inputs) or by cost (least cost or cost of inputs associated with producing a given level of output). The implicit assumption in any such comparison of efficiency is that quality is comparable. Efficiency can be measured by measuring the resources utilization and cost reduction.

The second dimension of performance measurement is effectiveness. The review of literatures indicates that effectiveness will include dimensions like customer satisfaction, quality of service etc. In balanced scorecard approach Kaplan and Norton have also considered these dimensions under different perspectives like customer perspective and internal perspective. Effectiveness of a service is indicated by its overall outcomes or impacts. In the healthcare context, effectiveness indicates the extent to which an intervention achieves health improvements and can be measured in terms of various outcomes such as cases of disease prevented, years of life saved etc. Effectiveness can be measured by measuring the service quality, customer satisfaction, growth and safety.

Further, these dimensions can be measured by expressing them into measurable units. Service quality of any hospital can be measured by quality of care, quality of clinical investigations, cleanliness of hospital environment etc. Waiting time may be one of the criteria for customer satisfaction measure. In the case of private hospitals (profit organizations), growth can be measured by financial indicators like income, profit of hospital. Safety may be measured by reduction in number of cases of bacterial infection in the

hospital due to the introduction of efficient infection control system. Different reviewers have suggested that flexibility can also be considered as lead performance measures. Flexibility is a lead performance measure, which focuses on analyzing forward looking, predictive and future performance comparisons. This can measure a system's ability or the adaptability to respond to diversity or change. However, the literature shows there is strong emphasis on formulation of performance frame works. It is observed that various performance frame works are formed by various researchers to obtain holistic measures of organizational performance. The paper attempts to explore the development of Malcolm Baldrige National Quality Framework towards organizational performance.

Malcolm Baldrige National Quality Framework

The dimensions of Malcolm Baldrige National Quality Framework includes leadership, strategic planning, customer focus, measurement, analysis, and knowledge management, workforce focus, process management, and results. These dimensions are termed as seven categories and points.

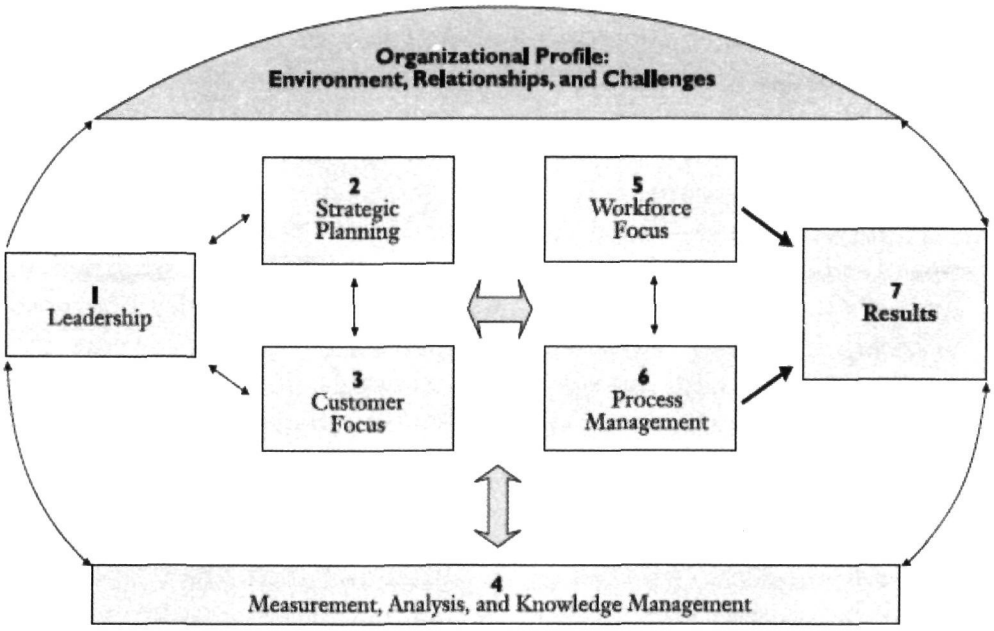
Leadership

As for any management innovation or change, strong and committed leadership is essential for successful quality programmes. Leadership provides the energy and motivation for continuous improvement and innovation. In MBNQA, leadership is defined as the guidance and visible participation that senior leaders provide in setting organizational values, directions, performance expectations and social responsibilities.

Strategic Planning

This dimension represents the relationship between an organization's quality

Figure 1: Malcolm Baldrige National Quality Award (MBNQA) Model



Source: US Department of Commerce, National Institute of Standards and Technology

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

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. 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.

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.

Human Resource Focus

Achieving and maintaining high levels of quality depend on the effective use of human talents and abilities. Human resource focus addresses key practices that the organization uses for creating and maintaining a high-performance workplace through developing, empowering and rewarding employees.

Process Management

This dimension evaluates an organization's systematic approaches to value creation and quality management processes. It includes the quality of product/service design, manufacturing process, and product variance reduction.

Business Results

This dimension is an overall score for quality management that measures the results of customer focus, products and services, financial and market outcomes, human resources, organizational effectiveness, and governance and social responsibility.

MBNQA Criteria from 1988 to 2008

It is observed that the MBNQA criteria are clearly an important set of quality management dimensions for any organization including healthcare. It is to be noted that the MBNQA criteria from its inception in 1988 and till today (2008-09) in approximately five year intervals has five revisions.

1988 Criteria

The first criteria for the MBNQA were published in 1988 in the 'Application Guidelines' brochure of the US Department of Commerce National Institute of Standards and Technology. This document explains the application process for the MBNQA, lists eligibility criteria, describes the award process, and devotes the bulk of its pages to examination of categories, subcategories and points. The original MBNQA criteria had seven categories and 42 subcategories, with points for each item that totaled 1000. 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 (1996) states that the criteria 'prescribed certain leadership, planning, human resource 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' 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.

1992 Criteria

The 1992 MBNQA criteria also consisted of seven categories totaling 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.' 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, comprising the system that includes the set of well-defined processes for meeting quality and performance requirements. The Quality and Operational Results category measures the progress toward improving quality and company performance. All of these categories worked toward achieving Customer Focus and Satisfaction. 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'. Some believe that the 1992 MBNQA model was the best in terms of clarity of the relationships between quality programmes and organizational performance.

1997 Criteria

When the MBNQA was formulated, 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. According to Brown (1997) 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, and 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. According to

Harry S. Hertz, Director of the National Quality Program of the National Institute of Standards and Technology, the revisions in the 1997 criteria highlight shifts in the MBNQA concepts of quality. The changes focus on an emphasis on quality assurance of products and services to the current focus on process management and business results. In service context, the functional quality needs to be emphasized more than the technical quality. 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 for a long term customer relationship and changing competitive market 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.

2003 Criteria

The 2003 criteria, like all other MBNQA criteria, have seven categories and a total of 1000 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 title 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 is a clear change from the original 1988 criteria, and is explained by 'the focus on results, not on procedures, tools, or organizational structures. No prescriptive requirements are intended to foster incremental and major ('breakthrough') improvements, as well as basic change'.

2008 Criteria

The 2008 criteria, like all other MBNQA criteria, have seven categories as listed in 2003 a total of 1000 points. The MBNQA developed as organisational excellence standard, measured along the lines of leadership, strategic planning, customer focus, measurement, analysis, and knowledge management, workforce focus, process management, and results. Leadership which examines how senior executives guide the organization and how the organization deals with its responsibilities to the public and practices good citizenship; Strategic planning which examines how the organization sets strategic directions and how it determines key action plans; Customer and market focus which examines how the organization determines the requirements and expectations of customers and markets; builds relationship with customers; and acquires, satisfies and retains customers; Measurement, analysis, and knowledge management (Information and analysis) is how the organization selects, gathers, analyzes, manages, and improves its data, information, and knowledge assets and how it manages its information technology; Workforce focus is how the organization engages, manages and develops workforce; Process management is how the organization designs its work systems to deliver value to patients and stakeholders and results include healthcare outcomes, customer -focused outcomes, financial and market outcomes,

workforce–focused outcomes, process effectiveness outcomes, and leadership outcomes.

MBNQA Criteria as a Concept of Quality Towards Overall Excellence and Research directions

The growth of the MBNQA criteria reflects evolving concepts of quality in changing business environment. 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 moving away from the ideals of quality management to general management. With respect to TQM, Evans and Lindsay 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. Hanna and Newman (2001) state that TQM has forced a shift from traditional analytical thinking, characterized by functional management and local performance measures, to holistic thinking, characterized by process management and global performance measures. According to them, 'To fully understand their processes, firms that implement TQM must take advantage of both analytical and holistic approaches. 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 put it across that 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 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 .The evolving nature of the MBNQA criteria reflects the novelty of the Malcolm Baldrige National Quality Award framework in the changing business environment.

Conclusion

Performance measurement provides the basis for an organization to assess how well it is progressing towards its predetermined objectives, helps to identify areas of strengths and weaknesses, and decides on future initiatives, with the goal of improving organizational performance .Organizations need to integrate ongoing performance measurement into their stakeholder's activities in relation to changing business environment. The core of MBNQA is about quality. The appearance of MBNQA criteria has changed since inception from quality concept to organizational excellence. The changes appeared in the framework to satisfy the

dimensionality issues of quality in the changing business environment. Yet, there is scope for future research to integrate the concept of service quality and performance in healthcare organizations in changing views of dimensionality. Thus, Malcolm Baldridge healthcare criteria provide a systems perspective for healthcare organizations to achieve the organizational performance excellence.

Bibliography

Anderson, K. and McAdam, R. (2004), 'A critique of benchmarking and performance measurement: lead or lag? Benchmarking', *International Journal Production Management,* Vol. 11 No. 5, pp. 465-83.

Anthony, R. and Govindorajan, V. (1998), *Management Control Systems,* McGraw-Hill, New York, NY.

Atkinson, H. and Brown, J.B. (2001), 'Rethinking performance measures: assessing progress in UK hotels', *International Journal of Contemporary Hospitality Management,* Vol. 13 No. 3, pp. 128-35.

Azzone, G., Masella, C. and Bertele, U. (1991), 'Design of performance measures for time-based companies', *International Journal of Operations & Production Management,* Vol. 11 No. 3, pp. 77-85.

Barclay, C.A., (1993), 'Quality strategies and TQM policies: empirical evidence', *Management International Review,* 33, 87-98.

Beamon, B.M. (1999), 'Measuring supply chain performance', *International Journal of Operations & Production Management,* Vol. 19 No. 3, pp. 275-92.

Beer, M., (2003), 'Why total quality management programs do not persist: the role of management quality and implications for leading a TQM transformation', *Decision Science.* 2003, 34, b 623-642.

Bititcti, U.S., Turner, T. and Begemann, C. (2000), 'Dynamics of performance measurement systems', *International Journal of Operations & Production Management,* Vol. 20 No. 6, pp. 692-704.

Bond, T.C. (1999), 'The role of performance measurement in continuous improvement', *International Journal of Productions and Operations,* Vol. 19 No. 12, pp. 1318-34.

Brown, M.G. (1996), 'Keeping Score: Using the Right Metrics to Drive World-Class Performance', *Quality Resources,* New York, NY.

Collier, D.A., Goldstein, S.M., and Wilson, D.D. (2002), 'A thing of the past', *Quality Program,* 35, 97-104.

D.M.Pestonjee,Kajal H.Sharma and Sonal Patel(2005), 'Image and effectiveness of hospital : An HR analysis', *Journal of health management* Vol.7.No.1, Sage Publication.

Deming W.E.(1986), *Out of crises,* Cambridge, MA: MIT Press

Donabedian,A., (1980), 'Explorations in Quality Assessment and Monitoring' *Health Administration Press,* Vol. 1, No.1, pp.77-128.

Eubanks,p(1992), 'The CEO experience:TQM/ CQI', *Hospitlas,* 66(11),24-36.

Evans, J.R. and Lindsay, W.M.(2005), *The Management and Control of Quality,* 6th edn.,South-Western: Cincinnati, OH.

Fiegenbaum, A.V.(1992), 'TQM: Healthcare learn from other fields'. *Hospitals,* 66(22), 56.

Fitzgerald, L., Johnston, R., Brignall, T.J., Silvestro, R. and Voss, C. (1991), *Performance Measurement in Service Businesses,*The Chartered Institute of Management Accountants, London.

Flynn, B.B., Schroeder, R.G. and Sakakihara, S. (1994), 'A framework for quality management research and an associated measurement instrument', *Journal of Operations Management.* 1994, 11, 339-366.

Gryna, F.M. (1991), 'The quality director of the '90s', *Quality Program* 24, 51-54.

Hanna, M.D. and Newman, W.R. (2001), *Integrated Operations Management: Adding Value for Customers,* Prentice-Hall: Upper Saddle River, NJ.

Hertz, H.S. (1997), 'The Criteria: a looking glass to Americans' understanding of quality', A 10th anniversary retrospective on the Baldrige Award criteria. *Quality Program* 30, 46-48.

Hudson, M., Smart, A. and Bourne, M. (2001), 'Theory and practice in SME performance measurement systems', *International Journal of Operations & Productions Management,* Vol. 21 No. 8, pp. 1096-115.

Judson, A.S. (1990), *Making Strategy Happen, Transforming Plans into Reality,* Basil Blackwell, London.

Juran, J.M., (1993), ' Why quality initiatives fail', *Journal of Business Management.* 14, 35-38.

Kaplan, R.S. and Norton, D.P. (1992), 'The balanced scorecard: measures that drive performance', *Harvard Business Review,* January/ February, pp. 71-79.

Kaplan,R.S.,and Norton,D.P.(1996), *Balanced score card: Translating strategy in to action,* Cambridge,MA:Harvard business school.

Kast, F. E. and Rosenzweig, J. E. (1974), *Organization and Management: A System Approach,* 2nd ed., New York: McGraw-Hill Book Co.

Keegan, D.P., Eiler, R.G. and Jones, C.P. (1989), 'Are your performance measures obsolete?, *Management Accounting,* June, pp. 45-50.

Kennerley, M. and Neely, A. (2001), 'Enterprise resource planning: analyzing the impact', *Integrated Manufacturing Systems,* Vol. 21 No. 2, pp. 103-118.

Li.L.(1997), 'Relationship between determinants of hospital quality management and service quality performance- a path analytic model',*Omega,*Vol.25,No.3,pp.535-45.

Lingle, J.H. and Schiemann, W.A. (1996),'From balanced scorecard to strategy gauge: is measurement worth it? ,*Management Review,* March, pp. 56-62.

Lynch, R. and Cross, K. (1991), *Measure Up! Yardsticks for Continuous Improvement,* Blackwell, Oxford.

Maisel, L.S. (1992), 'Performance measurement: the balanced scorecard approach', *Journal of Cost Management,* Vol. 5 No. 2, pp. 47-52.

Moullin, M. (2002), *Delivering Excellence in Health and Social Care,* Open University Press, Buckingham.

Moullin, M. (2004), 'Evaluating a health service taskforce', *International Journal of Health Care Quality Assurance,* Vol. 17 No. 5.

Moullin, M. (2005b), 'Defining PM - should the definition include stakeholders?', *Perspectives on Performance,* Vol. 4 No. 3, p. 17.

Neely, A. (2002), *Business Performance Measurement, Theory and Practice,* Cambridge University Press, Cambridge.

Neely, A., Adams, C. and Crowe, P. (2001), 'The performance prism in practice measuring excellence', *The Journal of Business Performance Management,* Vol. 5 No. 2, pp. 6-12.

Neely,A.(1995), 'Performance measurement system design: theory and practice', *International Journal of operations and production management,* Vol.15.No.4.

Ovretveit,J.(2000), 'Total quality management in European healthcare', *International Journal of healthcare quality assurance,* 13(2), 74-79.

Schonberger, R.J. and Knod, E.M.(1997),' *Operations Management',* 6th edn.,Irwin: Chicago, IL

Schonberger, R.J.(2001).Is the Baldrige Award still about quality? *Quality Digest,*

Shankar Purbey, Kampan Mukherjee and Chandan Bhar(2007), 'Performance measurement system for healthcare processes', *International Journal of Productivity and Performance Management* Vol. 56 No. 3, pp. 241-251.

Solvy, A.T.(1993).Champions of change. *Hospiatls,* 67(5),15-23.

Steeples, M.M., (1992), *The Corporate Guide to the Malcolm Baldrige National Quality Award: Proven Strategies for Building Quality into Your Organization,* Business One Irwin, Homewood, IL.

Stewart,L.J. and Lockamy,A.(2001), 'Improving competitiveness through performance measurement system can improve competitiveness by meshing the organizations long-term goals with day to day clinical and administrative functions', *Journal of Healthcare management,* 12(3),42-68.

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).

Venkatraman, N. and Vasudevan R. (1986), 'Measurement of business performance on strategy research: a comparison of approaches', *Academy of Management Review,* Vol.11, No.4, pp. 801-814.

WHO (2000). *WHR2000.* World Health Organization, Geneva.

Wisner, J.D. and Fawcett, S.E. (1991), 'Link firm strategy to operating decisions through performance measurement', *Production and Operations `Management Journal,* Vol. 32 No. 3, pp. 5-11.

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