

A BRIEF REVIEW OF TOTAL QUALITY MANAGEMENT AND BENCHMARKING: PROCESS MANAGEMENT AND THE DISCIPLINE OF INDUSTRIAL MANAGEMENT

D. Adrian Doss, Belhaven College

adrian_doss@msubulldogs.org

Rob H. Kamery, Nova Southeastern University

robhkamery@yahoo.com

ABSTRACT

From the reading of the literature, one gains an understanding of the importance of process management within the discipline of industrial management. Resulting from the outcomes of process management activities, organizational hierarchies and components may be affected in either a positive or negative fashion, and corporate success or failure may be fostered. As a method of providing a foundation for corporate success, several traditional methodologies may be implemented to improve process management activities and environments (e.g., TQM, ISO certification, and legislation). However, although each of these methodologies provides a unique tool to address managerial process activities from philosophical and quantitative perspectives, none are directly concerned with process maturity from the perspective of providing a standardized framework that may be adapted within any industrial production and operations environment. Hence, such a framework is necessary to provide the foundation for successful maturation and evolution of process management within the context of production and operations process improvement initiatives.

INTRODUCTION

According to Harrington (1991), a process may be defined as being any activity or group of activities that takes an input, adds value to it, and provides an output to an internal or external customer that implements organizational resources to provide definitive results. Ferrie (1995) defines a process as being a definable set of activities, which from a known starting-point achieve a measurable output to satisfy an agreed customer need. Davenport (1993) defines a business processes as being a structured, measured set of activities designed to produce a specified output for a particular customer or market. Kutschker (1994) indicates that business processes attempt to produce outputs that are supportive of organizational targets, and that cut across functions, departments, and in some cases across the boundaries of an organization.

Although these definitions are inclusive of several applications (e.g., accounting processes, software processes, ordering/shipping processes, etc.), Harrington (1991) discretely identifies production processes that exist within the context of industrial management (e.g., allocation, planning/scheduling management, inventory management, etc.). In such instances, Harrington indicates that a production process is any process that comes into physical contact with the hardware or software that will be delivered to an external customer, up to the point where the product is packaged, and is not inclusive of shipping and distribution processes. Further, Harrington indicates that production processes are supported with separate business processes. Given these considerations, one may conclude that unique processes exist within the production domain of the industrial management environment.

LITERATURE REVIEW

With respect to this domain, Zahran (1998) indicates that product-focused organizations expect process-related activity outcomes to result in the generation of a tangible entity. However, Kutschker (1994) indicates that most managers are concerned with localized process attributes--specifically, those which concern their department only. Zahran (1998) further indicates that the process-related managerial activities associated with generating such tangible entities are often neglected, deferred, or viewed as being a low-priority activity. According to Brecker (2001), some initiatives fail to achieve their objectives because there was a lack of commitment to the specific improvement actions and to their effective implementation.

Roetzheim (2000) reinforces these notions, and indicates that no industry, type of business, or company is immune to such shortcomings. As a result of such poor management, Harrington (1991), Kutschker (1994), Zahran (1998), Malhotra (1998), and Roetzheim indicate that project failure may occur, and that significant losses may be manifested (e.g., opportunity costs, economic losses, etc.).

As a prime example, Roetzheim (2000) introduces the Boeing corporate financial losses during the 1990s as sample outcomes of poor production and process management. In this instance, the Boeing parts management system was late and over budget, and was scheduled for deployment in 1999 (nearly two years after its original, anticipated date of deployment). Further, Roetzheim indicates that the managerial cost of failure may be derived from the following process management attributes:

1. The financial amount expended in excess of original budget constraints
2. The costs of inefficiencies as the workforce attempted to deal with an aborted deployment of the system and slipped production schedules
3. The lost opportunity costs associated with increased sales and with improved efficiency, and
4. The reduced valuation of Boeing stock as a result of having their first loss in 50 years.

From reviewing the concepts described by Harrington (1991), Zahran (1998), and Roetzheim (2000), one may derive the notion that poor management activities may hamper production and operations activities associated with industrial management functions, and that both corporate business environments and organizational hierarchies are affected by managerial activities within industrial environments. Bohn (2000) confirms this conclusion through observations that, within manufacturing environments, managers and engineers rush from task to task, not completing one before another interrupts them. Serious problem-solving efforts degenerate into quick-and-dirty patching.

Bohn (2000) further indicates that productivity suffers, and that managing becomes a constant juggling act of deciding where to allocate overworked people and which incipient crisis to ignore at the moment. As a result, one may conclude that organizational hierarchies must endure the consequences associated with poor process management, detrimentally affected environments, and unsound process practices.

From a process-oriented perspective, Mejabi and Black (2000) provide additional discussion to support the concept that managerial activities affect corporate environments. In this instance, Mejabi and Black introduce the notion that processes are everywhere in an organization, and that certain processes may be more important than others. As a result of this relationship, Mejabi and Black indicate that certain managerial activities and processes may be critical for maintaining market

share with respect to industries where frequent new product design and development of new products are critical for ensuring business success. Given this notion, one may conclude that managerial aspects of process activities directly affect corporate success or failure.

Holmes (2000) states that improvement involves examining processes proactively to determine improvement opportunities and that improving processes should be a part of what is done every day. As a method of enhancing managerial process environments to foster successful outcomes of process activities, Hicks (2000) indicates that many corporations advocate improvement initiatives. According to Harrington (1991), Hicks, Mejabi and Black (2000), Roetzheim (2000), Jordan (2000), and Zahran (1998), such improvement efforts may consist of total quality management (TQM), benchmarking, reengineering, just-in-time operations, legislation, and ISO certification.

Soganich (1997) confirms the validity of such initiatives through his observations that management techniques have continued to evolve and be implemented in many industrial settings, and through continuous improvement programs, productivity and efficiency have continually increased. Hence, one may derive the notion that improvement programs and philosophies become tools through which industrial environments may improve their managerial functions as a method of attempting to foster corporate success.

TOTAL QUALITY MANAGEMENT (TQM) OVERVIEW

According to Kan (1995), Total Quality Management (TQM) may be defined as a philosophy that represents a style of management aimed at achieving long-term success by linking quality with customer satisfaction through the creation of a culture in which all members of the organization participate in the improvement of processes, products, and services. Brecker (2001) introduces the concept that TQM is an overall business (quality) improvement system that also encompasses leadership, strategic planning, and human resources as well as process improvement. Macintosh and Francis (2000) indicate that TQM also has the Japanese philosophy *Kaizen* (i.e., continuous improvement) as a supporting tenet.

Given these definitions and considerations, one may derive the notion that TQM becomes a strategic philosophy that permeates all levels and facets of organizational structure and personnel to improve overall organizational quality and generate customer satisfaction. According to Hunt (1992, 1993), the four primary philosophical tenets of TQM may be listed as follows:

1. Customer Focus: TQM advocates total customer satisfaction
2. Process: TQM advocates reduced process variations and continuous process improvement
3. Cultural: TQM advocates an enterprise-wide corporate culture awareness of quality pursuits
4. Analytical: TQM advocates continuous improvements in all quality parameters via measurement systems.

BENCHMARKING

According to Thompson and Strickland (1996), benchmarking may be defined as cross company comparisons of how well basic functions and processes in the value chain are performed, how materials are purchased, how suppliers are paid, how inventories are managed, how employees are trained, how payrolls are processed, how fast the company can get new products to market, how the quality control function is performed, how customer orders are filled and shipped, and how maintenance is performed. This definition is enhanced through examination of Harrington's (1991)

perspective in which benchmarking is a continuous discovery and learning experience that identifies and evaluates best processes and performance in order to integrate them into an organization's present process to increase its effectiveness, efficiency, and adaptability.

According to Harrington (1991) and Davis, Aquilano and Chase (1999), benchmarking may be categorized as follows:

1. Internal Benchmarking--In this instance, benchmarking is a comparison among similar operations or processes within a firm's own organization, may be the starting point for identifying the best practices that currently exist within the company, and fosters the documenting process, which is necessary for identifying future areas for improvement (Davis, Aquilano & Chase, 1999).
2. Competitive Benchmarking--In this instance, benchmarking is a comparison between an organization's performance and that of its best direct competitors for the purpose of demonstrating how the company compares to other firms in its industry (Davis, Aquilano & Chase, 1999). Competitive benchmarking is concerned with evaluation of a rival's products, services, and processes, and provides a foundation for reverse engineering (Harrington 1991).
3. Functional Benchmarking--In this instance, across dissimilar industries, benchmarking is a comparison of performance with the best functional areas, regardless of the industry in which they are located (Davis, Aquilano & Chase, 1999). As a result, one may discover innovative processes not currently used in your particular product types that will allow your process to become the best-of-breed (Harrington, 1991).
4. Generic Benchmarking--In this instance, benchmarking examines specific work processes and process steps, which transcend industries, for the purpose of identifying those firms that have adopted innovative processes thereby providing targets that can be more readily acceptable by members of the organization (Davis, Aquilano & Chase, 1999; Harrington, 1991).

REFERENCES

- Bohn, F. (2000). Stop fighting fires. *Harvard Business Review*. July/August.
- Brecker, J. (2001). Performance leadership in meeting customer requirements by doing things right the first time. *Quality (Process) Improvement Methodologies--Deming, Juran, TQM, Six-Sigma*. Retrieved September 5, 2001, from <http://www.brecker.com>
- Carnegie Mellon University (1994). *The capability maturity model: Guidelines for improving the software process*. Carnegie Mellon University Software Engineering Institute.
- Dahle, C. (1996). Uneasy pieces: Part 2. *CIO Magazine*.
- Davenport, T. (1993). *Process innovation*. Boston: Harvard Business School Press.
- Davis, M., N. Aquilano & R. Chase (1999). *Fundamentals of operations management (Third Edition)*. New York: Irwin-McGraw Hill Publishing.
- Ferrie, J. (1995). Business processes: A natural approach. *Forum One*, (9). Business Processes Resource Centre, Warwick University, United Kingdom.

- Harrington, H. (1991). *Business process improvement: The breakthrough strategy for total quality, productivity, and competitiveness*. New York: McGraw-Hill Publishing.
- Hicks, P. (2000). *Production management: Operations improvement now*. Hicks Associates. White Paper.
- Holmes, L. (2000). *Continuous improvement in software development*. Q/P Management Group. Stoneham, MA. White Paper.
- Hunt, D. (1993). *Managing for quality: Integrating quality and business strategy*. Business One Publishing.
- Hunt, D. (1992). *Quality in America: How to implement a competitive quality program*. Business One Publishing.
- Jordan, H. (2000). *Business process re-engineering*. Retrieved September 1, 2001, from <http://www.inventorymanagement.com>
- Kan, S. (1995). *Metrics and models in software quality engineering*. New York: Addison-Wesley Publishing.
- Kutschker, M. (1994). *Re-engineering of business processes in multinational corporations*. International Research Conference of the Carnegie Bosch Institute in conjunction with the Katholische Universitat, Eichstatt, Germany. November 2.
- Macintosh, R. & A. Francis (2000). *The market, technological and industry contexts of business process re-engineering in U.K. business*. Department of Management Studies, G12 8LF. Glasgow Business School, Glasgow, Scotland.
- Malhotra, Y. (1998). Business process redesign: An overview. *IEEE Engineering Management Review*, 26(3).
- Mejabi, O. & J. Black (2000). *Process management: The new frontier for continuous improvement and total quality*. Simplex Systems Corporate White Paper.
- Roetzheim, W. (2000). *Formal process improvement: Ignore at your own risk*. Marotz, Inc. Online Corporate White Paper. Retrieved August 18, 2001.
- Soganich, M. (1997). *Production management: Overcoming barriers to improvement*. Thirteenth Mine Operators' Conference. Sudbury, Canada. February 18.
- Thompson, A. & A. Strickland (1996). *Strategic management: Concepts and cases (Ninth Edition)*. New York: Irwin Publishing.
- Zahran, S. (1998). *Software process improvement: Practical guidelines for business success*. New York: Addison-Wesley Publishing.

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