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A TOTAL QUALITY LEADERSHIP PROCESS IMPROVEMENT MODEL (SUMMARY)

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In an effort to improve quality and productivity, Navy organizations are adopting a management approach known as Total Quality Leadership (TQL). This approach is based on a set of management practices and statistical measures that, when combined, can remove the causes of poor product and service quality and excessive cost.

The management practices and analytic methods first adopted in the Navy by its aviation maintenance organizations are based primarily on the TQL concepts of W. E. Deming. Some of the critical concepts are:

- Quality is defined by customers' requirements.
- Top management has direct responsibility for quality improvement.
- Increased quality comes from systematic analysis and improvement of work processes.
- Quality improvement is a continuous effort and conducted throughout the organization.

The TQL approach emphasizes the major role that managers have in achieving quality and productivity improvement for an organization. Deming and other TQL proponents, such as P. B. Crosby and J. M. Juran, estimate that up to 85 percent of quality improvement is under the direct control of management and cannot be remedied by the hourly employee or staff member.

Under the TQL approach, managers are expected to achieve quality improvements through the use of a process improvement approach known as "Plan-Do-Check-Act" cycle. This approach was originally associated with the analytic work of W. A. Shewhart, a colleague of Deming.

This report describes an approach to integrating the procedures of process improvement with an organization made up of cross-functional teams. Specifically, the report presents how the Plan- Do-Check-Act cycle developed by Shewhart and Deming has been interpreted by the authors for use by Navy organizations.

Deming advocates teamwork, particularly across functional groups. He emphasizes two-way communication to identify sources of quality problems and to reduce fear of change and loss of job security. Combining these concepts with those of others, such as K. Ishikawa and D. J. Lu, as well as R. L. Ackoff concerning cross-functional groups, Navy organizations are adopting an organizational structure to complement the TQL approach.

The structure is composed of hierarchically linked, cross-functional teams called Quality Management Boards or QMBs. Each board contains a group of managers who are principally responsible for a process that was targeted by top management for improvement. A QMB also includes a member from senior management, as well as one or more subordinate-level managers or staff with process expertise. Thus, each board is made up of three levels to increase vertical communication and several functional departments to increase horizontal communication.

Process improvement using the Plan-Do-Check-Act cycle require two kinds of improvements: (1) those that address the occasional and unpredictable problems that occur in a system, referred as "special causes of variation" by Deming and others; and (2) those concerned with the system itself. The latter are referred to by the experts as "systems causes" or "common causes of variation." In order for management to improve the system, it must first establish system stability by removing the special causes. Because this activity depends upon real-time interventions in the process, the QMBs must establish teams of workers, called "Process Action Teams (PATs)," to work on various phases in the process.

The fundamental purpose of this report is to provide a detailed description of the roles and activities of the QMBs and the PATs in the context of the Plan-Do-Check-Act cycle. Clarification and differentiation of these roles are necessary for effective process improvement. Samples of histograms, scatter diagrams, control charts, run charts, and flowcharts are included in the document supplemented with flowchart and pareto chart exercises in the Appendix section.

ABOUT THE TQL OFFICE

The mission of the Total Quality Leadership (TQL) Office, Office of the Under Secretary of the Navy is to assist the Department of the Navy leaders in their quality-focused improvement efforts through education, consultation, information sharing, networking, and technical advice.

The TQL Office provides technical advice as well to a number of organizations inside and outside of government. It has

responsibilities in six key areas: TQL education and training; consultant services; new technologies; assessment; networking and liaison; and information and communication.

***Education and Training**

The TQL Office is responsible for managing the technical and conceptual content of the Department of the Navy (DON) TQL curriculum. This work involves designing and developing courses as well as training instructors. The staff advises the DON on integration of TQL material into the training pipeline.

***Consultant Services**

TQL Office members provide technical advice to the Under Secretary of the Navy and other senior Navy and Marine Corps leaders on the application of TQL principles and methods within the DON and on strategic planning. Advice may also take the form of recommendations on policy as well as on Defense Performance Review initiatives.

***New Technologies**

Technology can provide critical support to DON quality improvement efforts. The job of the TQL Office is to assess new technologies related to organizational change and process improvement and translate them into applications for the DON.

***Assessment**

Systems are needed to assess the way in which TQL implementation is enhancing mission accomplishment in DON organizations. The TQL Office is designing and developing feedback mechanisms for that purpose as well as developing innovative approaches to improve overall organizational effectiveness.

***Networking and Liaison**

The TQL Office has much to share with other organizations, both government and private, and much to learn from them. Staff members participate in TQL-related networks and professional organizations. As resources permit, the TQL Office sponsors TQL conferences and seminars.

***Information and Communication**

The TQL Office educates the DON about TQL policies and initiatives through a newsletter (TQLLeader), articles and reports, and presentations at conferences and meetings. It is developing a computer-based quality information network to facilitate communication with DON organizations.

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