

# DEFENSE EQUAL OPPORTUNITY MANAGEMENT INSTITUTE

DIRECTORATE OF RESEARCH

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## QUALITY IMPROVEMENT AT THE DEFENSE EQUAL OPPORTUNITY MANAGEMENT INSTITUTE

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19980630 037

Summer 1997



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DEOMI Research Series Publication 97-10

**DTIC QUALITY INSPECTED 1**

# REPORT DOCUMENTATION PAGE

*Form Approved*  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>		2. REPORT DATE	3. REPORT TYPE AND DATES COVERED Final - May-July 1997	
4. TITLE AND SUBTITLE  Quality Improvement at the Defense Equal Opportunity Management Institute			5. FUNDING NUMBERS  N00014-94-0515	
6. AUTHOR(S)  D. Lynn Kelly				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Directorate of Research Defense Equal Opportunity Management Institute 740 O'Malley Road MS9121 Patrick Air Force Base, Florida 32925-3399			8. PERFORMING ORGANIZATION REPORT NUMBER  RSP 97-10	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)  Office of Naval Research 800 N. Quincy Street Arlington, Virginia 22302			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT  Approved for public release; distribution unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT <i>(Maximum 200 words)</i>  The Defense Equal Opportunity Management Institute (DEOMI) is a service-related organization which prepares selected military officers, NCOs, and civilians as equal opportunity/equal employment opportunity (EO/EEO) advisors or to perform related EO/EEO duties. In 1996, DEOMI began a Total Quality Management (TQM) effort by using the Malcolm Baldrige National Quality Award Criteria for an initial self-assessment. From this self-assessment, a strategic plan and a Total Quality Plan (TQP) were developed by DEOMI leadership. The researcher developed a summary of the self-assessment, strategic plan, and TQP which is outlined in this document. In addition, a tool for future self-assessment based on the Baldrige award criteria was developed by the researcher. The tool is briefly summarized in this document. Finally, the researcher provided feedback, flowcharts, and revisions for DEOMI's Total Quality Plan manual. A copy of this manual is available from DEOMI. A brief historical background of the application of quality principles in DEOMI and the researcher's activities in this area.				
14. SUBJECT TERMS			15. NUMBER OF PAGES  14	
17. SECURITY CLASSIFICATION OF REPORT  Unclassified			16. PRICE CODE	
18. SECURITY CLASSIFICATION OF THIS PAGE  Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT  Unclassified		20. LIMITATION OF ABSTRACT  Unlimited

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**Abstract**

The Defense Equal Opportunity Management Institute (DEOMI) is a service-related organization which prepares selected military officers, NCOs, and civilians as equal opportunity/equal employment opportunity (EO/EEO) advisors or to perform related EO/EEO duties. In 1996, DEOMI began a Total Quality Management (TQM) effort by using the Malcolm Baldrige National Quality Award Criteria for an initial self-assessment. From this self-assessment, a strategic plan and a Total Quality Plan (TQP) were developed by DEOMI leadership. The researcher developed a summary of the self-assessment, strategic plan, and TQP which is outlined in this document. In addition, a tool for future self-assessment based on the Baldrige award criteria was developed by the researcher. The tool is briefly summarized in this document. Finally, the researcher provided feedback, flowcharts, and revisions for DEOMI's Total Quality Plan manual. A copy of this manual is available from DEOMI. A brief historical background of the quality movement is presented in the first section of this report. The second section discusses the application of quality principles in DEOMI and the researcher's activities in this area.

**Summer 1997**

Opinions expressed in this report are those of the author and should not be construed to represent the official position of DEOMI, the military services, or the Department of Defense.

## Quality Improvement at the Defense Equal Opportunity Management Institute

This report focuses on quality in organizations. A brief historical background of the quality movement is presented in the first section of this report. The second section discusses the application of quality principles in the Defense Equal Opportunity Management Institute (DEOMI) and the researcher's activities in this area.

### Total Quality Management (TQM) Historical Background

TQM has exploded across the United States during the last fifteen years. In 1978, fewer than 40 percent of the American consumers indicated quality was as important as price. However, by 1988, that figure was up to 80 percent (Steeple, 1992). The concept of quality by continuous improvement was embraced by the Japanese over forty years ago, and America watched as the quality of Japanese products continued to improve and surpass U.S. products (Peters & Waterman, 1982). As the American consumer turned away from American-made products in favor of the more reliable Japanese products, the nation's businesses had no choice but to find the source of this movement (Gitlow, Gitlow, Oppenheim, & Oppenheim, 1989).

Two Americans, Dr. W. Edwards Deming and Dr. J. M. Juran, were at the heart of the Japanese quality movement. Initially, Deming presented his ideas to American industry leaders; however, quality was not the primary concern of the American consumer at this time (Ealey, 1988). Therefore, Deming and Juran took their messages to the Japanese, who were in the process of rebuilding after the war. Deming arrived in 1950 and emphasized improving quality using statistical tools. Juran arrived in 1954 and stressed continuous improvement of management performance. Deming was so confident of the effectiveness of his philosophy that in 1950 he predicted Japan would soon flood the market with quality products (Imai, 1986).

Japanese businesses eagerly accepted the data-driven continuous improvement principles, and within a relatively short period of time they overtook the Americans in key industries. For example, the videotape recorder was invented by Ampex, an American company; however, the Japanese now have the majority of the videotape recorder market (Barker, 1993). In addition, by 1991, eight of the top ten banks in the world were Japanese. Ryan (1988) noted that "the consensus at the manufacturer's level is that Toyota Motor Corporation is probably number one in terms of production system, management system, and low cost" (p. 3). This phenomenon does not just apply to American industry. In 1968, the Swiss held 65 percent of the watch market, and in 1992 they had just 10 percent, while the Japanese went from 1 percent to 33 percent during that same period (Barker, 1993).

The Japanese called their quality systems QC, which stands for Quality Control, or *kaizen*, which is the Japanese word for continuous improvement. One of the characteristics of *kaizen* is that it is process oriented rather than results oriented. Rather than looking for innovative, short term, and dramatic results, *kaizen* tends to look at long-term and long-lasting (but undramatic) results (Imai, 1986). Quality has been defined in various ways. Imai (1986), a Japanese author, described quality as being associated with "products and services...the way people work, the way

machines are operated, and the way with which systems and procedures are dealt" (p. 9). This view of quality is similar to "systems theory," which emphasizes the interrelationship of all factors should be taken into consideration when improving quality (Ryan, 1988). Crosby (1979) was one of the first American TQM experts to provide a written definition of quality. He said it was "conformance to requirements" (p. 9). Juran (1979) defined quality as "freedom from deficiencies" (p. 22), and in a later edition of the same book described quality as "fitness for use" (Juran, 1988, p. 24). More recently, American authors have expanded the definition of quality from simply meeting expectations to exceeding expectations or requirements. For example, Gitlow, Gitlow, Oppenheim, and Oppenheim (1989) described quality as, "the extent to which the customers or users believe the product or service surpasses their needs and expectations" (p. 3). For the purposes of this paper, the application of a quality program will be called TQM.

Another one of the drivers for the spread of TQM in America was publication of the book, *In Search of Excellence* by Peters and Waterman (Albrecht, 1992). In 1977, Peters and Waterman began a search for excellent companies in the United States and in 1982 published their book describing these companies. During this time frame, American businesses continued to lose market share in various industries, in particular, the small car market (Hayes & Abernathy, 1980). For example, in 1980, Detroit auto factories had 71 percent of the U.S. market; however, by 1991, the market share dropped to 62 percent.

One company that Peters and Waterman (1982) examined, but did not add to the list of the "excellent companies," was Xerox. Xerox was very successful during the 1960s and early 1970s; however, by the late 1970s, American Xerox began to drop in productivity, market share, and quality. Despite the decline of American Xerox, a Japanese subsidiary, Fuji-Xerox showed the opposite trend. Fuji-Xerox had adopted TQM principles in 1976 in order to stay competitive in Japan. Beginning in the early 1980s, after several visits to Fuji-Xerox, the new chief executive officer of Xerox, David Kearns, began to implement TQM principles in American Xerox (Xerox, 1993). By 1987, Xerox reversed its worldwide decline in market share and return on assets. By this time, most of the Xerox employees were trained in and were using TQM principles. Other companies have followed the Japanese lead in TQM. In fact, from 1987 to 1992, more than 87 percent of the largest U.S. companies expanded their TQM efforts (Steeple, 1992).

Some years ago, Japan developed the prestigious Deming Prize for individuals, factories, and businesses which excelled in quality. The highest award, the Japan Quality Control Award, was added in 1970 exclusively for companies. The Deming Prize applicants are given a complete audit which emphasizes management support and involvement in TQM (Imai, 1986). In 1987, the United States followed the Japanese example with the development of the Malcolm Baldrige Award, named for Malcolm Baldrige, Secretary of Commerce from 1981 until his death in 1987. The purpose of this award was to promote quality improvement in U.S. businesses (Steeple, 1992). Later the award was expanded on a pilot program basis to the educational and health care communities. There are seven categories in the award criteria, as follows:

- 1) Leadership
- 2) Information and Analysis
- 3) Strategic Quality Planning
- 4) Human Resources
- 5) Quality Assurance of Products and Services
- 6) Quality Results
- 7) Customer Satisfaction

Applicants for the award are judged by members of the Board of Examiners who are chosen from national TQM experts. Companies may use the criteria for self-assessment or may actually apply for the award. Demand for the award continues to grow. In 1988, there were 12,000 requests for applications, which grew to 210,000 requests in 1991 (Steeple, 1992). Futurist Joel Barker (1993) noted, "I believe it [quality] will be the norm by 1999" (p. 172). One of the companies using the Baldrige criteria was the Xerox Corporation (Xerox, 1993). Xerox used the criteria as a self-assessment procedure in order to improve its TQM programs. Eventually, Xerox was awarded the Malcolm Baldrige National Quality Award (1989), the Deming Prize, and the European Quality Award. It is also one of the few U.S. companies to regain market share which was previously lost to the Japanese (Xerox, 1993).

TQM and continuous improvement emphasizes the use of data in making decisions (Imai, 1986). From the beginning of the TQM movement, the quality experts said that quality was measurable (Crosby, 1979). One of the earliest methods used to track data was known as Statistical Process Control (SPC). SPC was first developed by Walter A. Shewhart and was described by Deming (1986). SPC was used by Shewhart at Bell Laboratories where normal and abnormal variation was tracked in the manufacturing processes in the 1920s (Ealey, 1988). Deming (1986) also introduced the Shewhart Cycle which is widely known as the PDCA cycle. This is a circle of improvement which incorporates the four steps of plan, do, study, and act. After the fourth step the cycle repeats, which results in continuous improvement.

One of the things that continues to challenge organizations worldwide is the rapid change of the marketplace. Innovations such as fiber optics and satellites continue to transform the way we conduct business (Barker, 1993). In fact, the prevailing view is that "there will not be stability or leveling off of change in the future" (Ryan, 1988, p. 2). Successful organizations need a strategy to cope with the challenges in the future. TQM principles can provide such a strategy (Imai, 1986).

A key to a successful TQM implementation is management participation, rather than management support (Crosby, 1979). TQM should involve everyone in the organization--from the lowest member on the organizational chart to the highest member (Imai, 1986). Unfortunately, the number of American executives who give TQM more than "lip-service" is few, in contrast to successful Japanese companies, where TQM "flows from the most important operating officer on down" (Ealey, 1988, p. 19). Ealey (1988) explained that the way some American companies try to "do TQM" is to pour it into the middle of the organization, or into the bottom of the organization and expect it to work. When this type of implementation takes place, TQM usually fails. Brown, Hitchcock, and Willard (1994) noted that when TQM fails in organizations,

managers "try not to smirk too openly, as if they always knew they could out-wait this 'program'" (p. V). Unfortunately for the smug managers, it is widely believed in the business community that TQM is not a passing fad, and organizations that "do not produce high-quality products and services will not survive the 1990s" (Steeple, 1992, p. 6). Although there are many reasons for the failure of TQM programs in organizations, it is usually the implementation that has failed and not the philosophy (Brown et al., 1994).

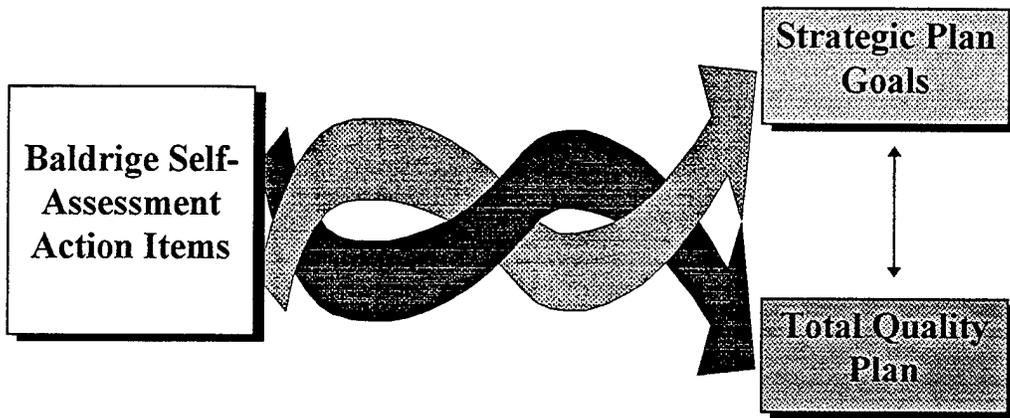
In spite of America's best efforts, the Japanese continue to lead in many industries. In 1988, it was noted that Japanese automakers had a two-to-one lead in productivity over U.S. automakers. In addition, Japanese auto plants located in the U.S. also out-produced many American-owned auto facilities (Ealey, 1988). Although TQM has moved rapidly in manufacturing companies, its application to service industries has been a bit slower. According to a study by the National Family Opinion for the Consumer Research Center, of 6,000 households surveyed, the majority believed they received good value for their dollar for products, but not for services (Zemke & Schaaf, 1989). There has been a reluctance to implement TQM in service organizations because in part, it is more difficult to measure the quality of a service than a product--because a product is tangible and a service is intangible (Zemke & Schaaf, 1989). Albrecht (1992) countered with the opinion that quality product and quality service are not separate issues. He noted, "Once we leave behind the archaic distinction between 'products' and 'services,' we begin to understand that the only thing that really matters in business is delivering customer value, which is always a combination of tangibles and intangibles" (p. ix). One of the ways to measure the quality of a service is to make the comparison between what the customer expects to receive and what the customer actually receives (Berry, Zeigham, & Parasuraman, 1985).

### **DEOMI's Application of TQM**

This section presents a summary of the researcher's activities as they relate to DEOMI's TQM program. DEOMI is a service-related organization which prepares selected military officers, noncommissioned officers, and civilians for equal opportunity/equal employment opportunity (EO/EEO) and related duties. In 1996, DEOMI began a TQM effort by using the Malcolm Baldrige National Quality Award Criteria for an initial self-assessment. From this self-assessment, a strategic plan and a Total Quality Plan (TQP) were developed by DEOMI leadership. A summary of the self-assessment, strategic plan, and TQP was developed by the researcher and is shown in Figure 1 and Table 1. The Baldrige action items from the self-assessment are listed in the first column. These action items assisted in the development of the DEOMI Strategic Plan and the TQP, which are summarized in the second and third columns, respectively. The diagram (Figure 1) and table (Table 1) below show the linkages among the three areas.

The table is best read by examining each row in turn. The first row, first column displays one of the recommendations which came from the self-assessment. The first row, second column shows the strategic plan objective(s) which have been developed to meet the need highlighted in the self-assessment. The third column of the first row displays the item in the TQP which assists in meeting both the strategic plan goal and the self-assessment need.

**Figure 1**  
The Development of DEOMI's  
Strategic Plan Goals and Total Quality Plan



**Table 1**  
Overview of Linkages Between DEOMI's Self-Assessment,  
the Strategic Plan Goals, and the Total Quality Plan

<b>Baldrige Self-Assessment</b>	<b>Strategic Plan Goals</b>	<b>Total Quality Plan</b>
DEOMI should identify primary customers & adopt a model for providing continuous improvement.	Obj 1: By Jan 1999 our organizational structure will optimally support our mission. Obj 11: By January 1999, TQM will be our way of doing business.	TQP Manual pending
Establish a formal system of communicating values & expectations.	Statement of Principles & Values (p. 4-5), Mission & Vision (p. 6-7), Goals & Objectives (p. 8-20) Obj 6: By Jun 1998 we will have a comprehensive internal communication plan that makes optimum use of available technology to disseminate information. Obj 7: By December 1998, we will establish an Internet.	Communication Process Action Team (PAT) assigned June 1997.
Establish a formal, systematic process for reviewing operational and customer-related performance.	To be addressed.	Process Improvement Plan adopted (PIP)
Develop criteria for measuring and selecting data for use in improving quality.	Obj 12: By January 1999, we will apply quality measurement and statistical evaluation techniques to improve or validate every key process.	Process Improvement Plan adopted (PIP)

**Baldrige Self-Assessment**

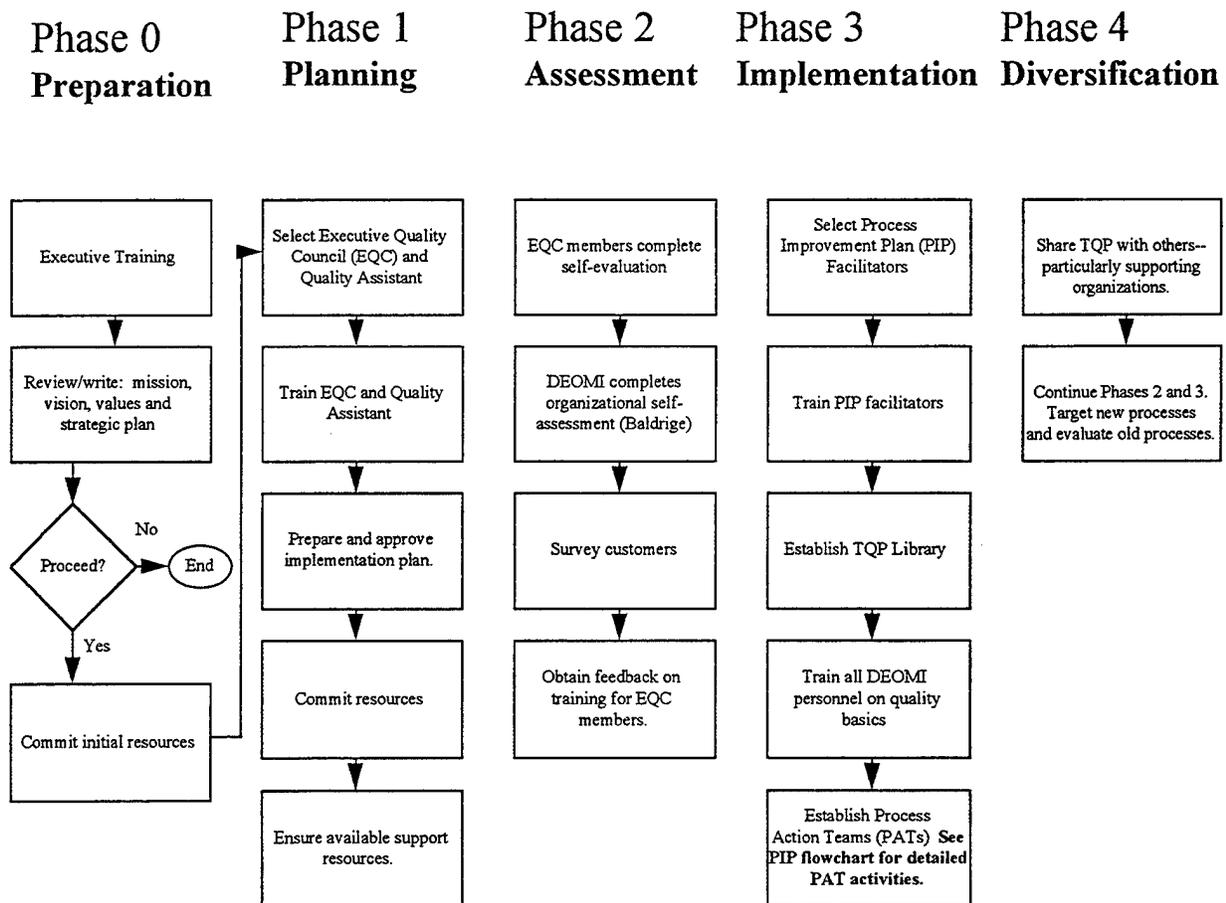
**Strategic Plan Goals**

**Total Quality Plan**

Develop benchmarking methods.	To be addressed	To be addressed.
Collect and analyze data regarding customer satisfaction.	Obj 8: By August 1998, we will have input from the Services'/Agencies' EO/EEO proponents to determine the effectiveness of the 1997 revised curriculum. Obj 9: By August 2000, we will validate that our curriculum meets the needs of our customers.	Curriculum Review Team established.
Develop strategic plan.	Strategic Plan adopted.	To be addressed
Planning process should be data driven. Short term objectives linked to each strategic goal.	Strategic Plan is data driven with linked objectives & goals.	To be addressed
Develop a process for determining training and education requirements of DEOMI members & measure effectiveness of training.	Obj 4: By February 1998 we will have a process to ensure all of our people have the basic skills to do their jobs. Obj 5: By February 1998, we will have an active, formal professional development program.	To be addressed
Develop new MEOCS for more comprehensive survey of overall work climate.	Obj 9: By October 1998, we will integrate MEOCS and other research results into curriculum development/revision.	To be addressed
Review work process design & job design to promote high performance.	Obj 3: By February 1999, we will review all staffing requirements and implement appropriate changes.	Campus PAT assigned.
Define, measure, & track core processes.	Obj 12: By January 1999, we will apply quality measurement and statistical evaluation techniques to improve or validate every key process.	Reorganization PAT assigned.
Review operation for potential effectiveness & efficiency.	Obj 12: By January 1999, we will apply quality measurement and statistical evaluation techniques to improve or validate every key process.	Reorganization PAT assigned.
Use standardized, systematic process for process improvements.	Obj 13: By January 2000, 50 percent of us will have served on process action teams.	Process Improvement Program (PIP) adopted.
Establish a process to evaluate results of core processes.	To be addressed	Process Improvement Program (PIP) adopted
Establish a process for sharing success stories across DEOMI.	To be addressed	Communication PAT formed.
Establish process for using student feedback for improvement.	To be addressed	To be addressed
Establish a process for using feedback about commander and supervisors.	To be addressed	To be addressed
Establish a complaint management process.	To be addressed	To be addressed
Not mentioned.	Obj 2: By 2001, the new campus and supporting resources will meet our needs and requirements for future growth.	To be addressed

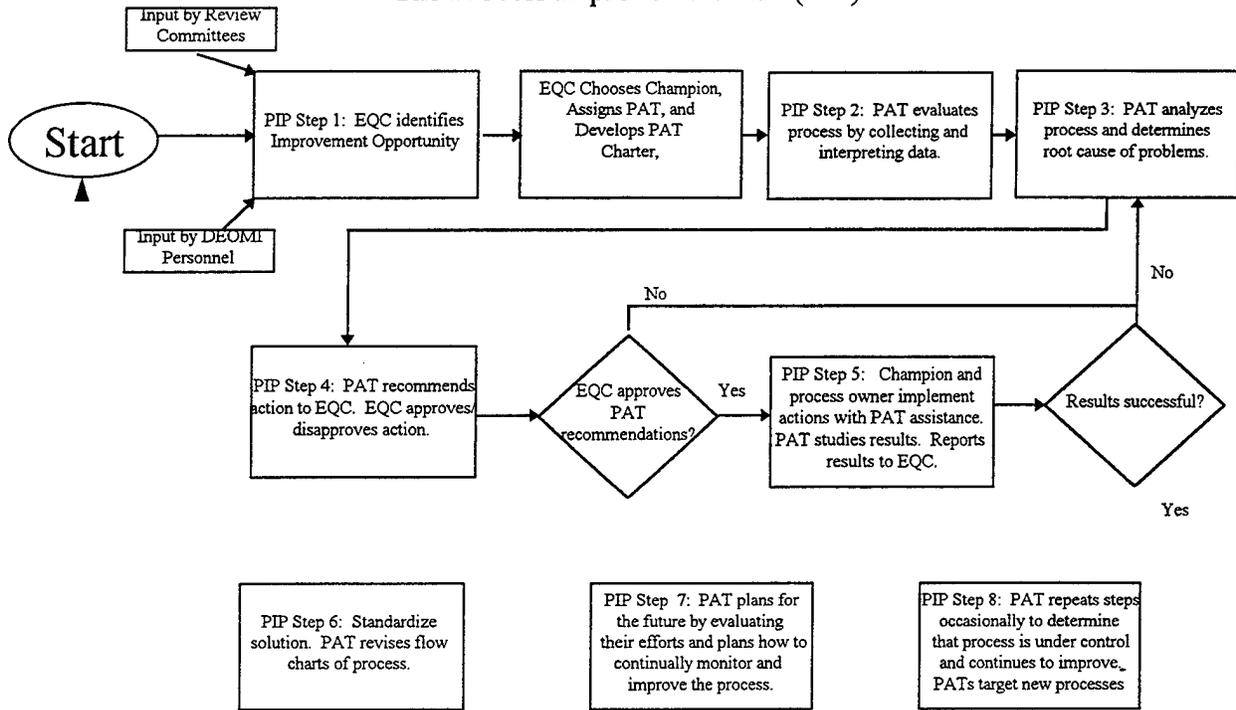
The Total Quality Plan (TQP) which was summarized in the third column of Table 1 is available in detail from DEOMI. The researcher created a flowchart which shows the implementation phases of DEOMI's TQP. The process began with phase 0 which is the preparation phase. Phase 0 must be completed chronologically before moving to phase 1. Once phase 1 is completed, phase 2 may begin and may also overlap with phases 3 and 4. As of July 1997, DEOMI has completed all of the activities in phases 0 and 1, and has initiated the steps in phases 2 and 3. A flowchart is read by following the arrows through the various activities. Each rectangle indicates an activity; and each diamond indicates a decision.

**Figure 2**  
DEOMI's Total Quality Plan (TQP)



The last activity identified under phase 3 in Figure 2 above refers to a "PIP flowchart." PIP is the acronym for the Process Improvement Plan (PIP) which was adopted by DEOMI. The PIP is explained in detail in the TQP manual available from DEOMI; however, the researcher developed a flowchart to summarize the steps necessary to perform the PIP. The PIP is to be used by DEOMI individuals or teams to improve processes.

**Figure 3**  
The Process Improvement Plan (PIP)



DEOMI's strategic plan calls for a self-assessment to be completed by October 1997, using the Malcolm Baldrige Criteria. In 1995, the Malcolm Baldrige National Quality Award conducted an education pilot program. The original Criteria for Performance Excellence commonly used by businesses were amended for educational institutions. The researcher used the Baldrige educational pilot criteria to provide a framework for DEOMI self-assessment. The entire self-assessment document is available under separate cover; however, a brief summary of the self-assessment is provided in this paper.

Self-assessment is a structured process that any organization can use to determine its current status in implementing TQM principles. Self-assessment helps identify gaps between where DEOMI is and where it would like to be. Once the gaps have been identified, DEOMI can take action to close them. An important aspect of self-assessment is that many people in all areas of DEOMI can be involved in the process. This is one of the critical aspects of self-assessment, as it is important to obtain "buy-in" by the employees in order for a TQM program to be effective.

One of the obstacles to wide-scale adoption of TQM principles by the education and training community has been the difficulty of jargon transference. For example, what does a "customer" have to do with DEOMI? Who are DEOMI's suppliers? Each educational organization must define its customer itself. Many organizations determine that the student is just one of many customers--or stakeholders. For example, an instructor may define one of his or her internal

customers as the instructor for the next class students will enter after completing his or her instruction. An administrator may define the school board or an executive officer as a customer. DEOMI has defined its primary customer as the commander who receives DEOMI's graduates and services, and its secondary customer as the student. Occasionally, the term "customer" is used in this document; however, the words "students and stakeholders" may be used instead.

**Instructions for self-assessment:** In order to obtain a high rating for each category, the items listed in each of the seven categories in Table 2 must be present in the organization. To perform the self-assessment, this document must be accompanied by a series of questions that request detailed information about each category (see complete self-assessment document).

Table 2  
Summary of Baldrige Educational Criteria

**Leadership (Baldrige Category 1)**

- DEOMI leadership has a personal involvement in:
  - creating and sustaining a focus on students and stakeholders
  - making a visible commitment to TQM
  - fostering a management system to guide DEOMI's efforts to improve.
  - public responsibilities such as community involvement, environmental protection and ethics.

**Information and Analysis (Baldrige Category 2)**

- DEOMI uses valid data and information to improve its overall performance.
- DEOMI's information and data analysis system enhances DEOMI's focus on students, and supports improvement of training, programs, services, and human resources.

**Strategic and Operational Planning (Baldrige Category 3)**

- DEOMI integrates key quality requirements into overall planning.
- DEOMI has short and long-term plans.
- Quality and performance requirements are understood and achieved in all areas of DEOMI.

**Human Resource Development and Management (Baldrige Category 4)**

- DEOMI develops and realizes the full potential of the workforce, including management.
- DEOMI maintains a work environment conducive to full participation, empowerment, personal and organizational growth, and cooperation.

**Educational and Business Process Management (Baldrige Category 5)**

- Systematic processes are used by DEOMI to pursue higher program quality, service quality, and overall performance.
- DEOMI uses the key elements of process management, including
  - designing and developing new methods of delivery, curriculum, programs, and services
  - managing and continuously improving primary and support processes
  - regularly assessing systems, processes, programs, curriculum and services

**School Performance Results (Baldrige Category 6)**

- DEOMI has current levels of student achievement and performance, including improvement trends over the past few years.
- Overall operational performance has increased over the last few years, in terms of productivity, efficiency, and effectiveness.
- Employees are effective and satisfied.
- Current quality and performance levels compare favorably to those of similar providers.

**Student Focus and Student and Stakeholder Satisfaction (Baldrige Category 7)**

- DEOMI has good relationships with its students and stakeholders.
- DEOMI has knowledge of and commitment to student and stakeholder requirements.
- DEOMI uses methods to determine levels and current trends of stakeholder satisfaction.
- Stakeholder satisfaction is compared to that of similar providers.

After becoming familiar with the general framework of the Baldrige process, the self-assessment may begin. The steps are as follows:

1. Assemble a team which includes representatives of different functions in DEOMI, and at least one key leader.
2. Appoint a facilitator and a timekeeper (see complete document for job descriptions)
3. Agree upon a time frame for activities (see complete document for activity descriptions).
4. Agree on a structure for the activities.

A sample structure and time frame might look like this:

Whole team:	Category 1	2 hours
Subteam 1:	Categories 2, 3 & 4	4 hours
Subteam 2:	Categories 5, 6 & 7	2 hours
Subteams report results of work		2 hours
Identify "vital few" action items		1 hour
Identify plan of action		1 hour

5. The entire team works together on an assessment of Category 1. This preliminary self-assessment process asks team members to answer a series of questions to determine if DEOMI has implemented a sound, TQM approach. That approach is considered more effective if it is used by everyone (or all appropriate persons) in DEOMI.
6. Each subteam then conducts the self-assessment for its category or categories.
7. When all subteam work is done, the teams reconvene and report their findings to one another. This sharing can lead to even more ideas and growth for everyone.
8. Finally, the whole team works together to identify the “vital few” opportunities for improvement and possible action steps.

Exercises may be completed all at once in a “retreat” style session, or the work can be divided into shorter sessions over several days. The next step is to take the information gathered and use it to obtain long-term benefits for DEOMI. The following steps are necessary:

1. Review the opportunities for improvement that all subteams have already identified. These opportunities for improvement represent gaps between where DEOMI is now and where it would like it to be.
2. Decide which gaps to close first. What areas must be improved right away to make the most significant difference in the quality achievement of DEOMI? What areas are most critical to DEOMI’s mission? What areas will help improve student and stakeholder satisfaction?
3. Agree on the best ways to measure the results. Decide which measurement(s) to use, determine how DEOMI is currently doing in relation to the metric, and set a goal for improvement.
4. Prepare a corrective action plan to close the gaps on the “vital few” improvement items.. The team may use a flipchart to summarize the information. A sample format is below.

<b>Our “Vital Few” Opportunities for Improvement</b>	<b>Ways to Measure Improvement</b>	<b>Possible PAT Membership</b>	<b>Proposed PAT Start-up and Ending Dates</b>	<b>Proposed PAT Champion</b>

It may not be possible to take immediate action on all of DEOMI's "vital few" opportunities for improvement. In addition, it will take time to see the results of the self-assessment efforts. The key is to maintain a commitment to improvement

Finally, the researcher also worked with several members of DEOMI to write and revise the Total Quality Plan Manual. A complete copy of this manual is available for review from DEOMI. The manual will be used as a tool for DEOMI staff to continue to use as a reference guide throughout the TQM process. It includes information about the proper tools and techniques for quality improvement, the mission, vision and four TQM pillars of DEOMI, definitions of key TQM terms, and a detailed description of the Process Improvement Plan (PIP).

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