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**TQM : A BIBLIOGRAPHY WITH ABSTRACTS**

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## INTRODUCTION

This bibliography is an effort to facilitate the transfer of Total Quality Management literature to those who need it, specifically those who work at NASA Langley Research Center.

The business community is a global one which knows no political boundaries. Taking a look at those companies such as XEROX, 3M, and Hewlett-Packard, which are successful in this new expanded market, we find there is a common denominator. Their business philosophy places both the internal and external customer's needs as paramount in directing the company's strategic activities.

TQM had its beginning in the post World War II era when W. Edwards Deming introduced his statistical methods for restructuring the Japanese economy. Incorporating proven quality assurance techniques which are adaptable to a specific organizational construct, TQM is a new business paradigm which stresses versatility, responsiveness, adaptability, and creativity. In order to remain competitive in this new business environment, companies must embrace TQM as a continuous process rather than a destination. The fundamentals of TQM are 1) multi-lateral commitment to continuous process; 2) multi-functional team formation; 3) education and training, and 4) supplier integration.

This bibliography is a collection of abstracts retrieved from various business and aerospace online data files. The bibliography is sorted alphabetically by index terms, and within each subject area records are arranged alphabetically by author. Some articles may appear under more than one subject heading. An Author Index is provided which directs the Researcher to a specific category.





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## TQM BIBLIOGRAPHY

### AEROSPACE

1. "Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings." Seminar sponsored by Institute of Environmental Sciences and Aerospace Corp. Mount Prospect, IL, Institute of Environmental Sciences, 1990, 239 p. For individual items see A91-29690 to A91-29721, (1990 9000). English United States IAA9111 AIAA/TIS. 1764977 A91-29689

Recent developments in the technology and management of testing in the U.S. aerospace industry are discussed in reviews and reports. Sections are devoted to the impact of Total Quality Management on testing, risk and cost management, innovative testing and lessons learned, improved testing for launch systems, Space Station testing, and software issues in testing. Particular attention is given to eliminating waste in the test process, satellite environmental testing cost benefits, motion- and force-controlled vibration testing, Shuttle and Shuttle-C mixed-fleet processing operations, environmental interactions on the Space Station, integrated testing of the Space Station ECLSS at NASA Marshall, a comprehensive software package for thermal vacuum test monitoring, and real-time instrumentation control applications for satellite system tests. Diagrams, drawings, graphs, photographs, and tables of numerical data are provided. T.K.

2. Chen, Chris. "Recruitment: TRW S&D Strives to Be the Preferred Employer." Personnel Journal. v69n7. 70-73, (Jul 1990). PEJ English References. 00505889

With a workforce of more than 25,000, TRW Space and Defense (S&D) is a prime competitor in the knowledge worker labor markets that will be the most competitive during the 1990s. To meet this challenge, the division is committed to being the preferred employer of this decade in all its regional labor markets. During the 1990s, workforce performance will be the key to a competitive advantage. The foundation for that performance is a company's ability to attract and retain workers. Career and personal development has long been a priority at TRW, and the S&D division offers

company-sponsored personal and skill-specific development programs as well as full tuition reimbursement. Since 1978, TRW has practiced a flexible time policy. Issues on the agenda for its long-term preferred employer strategy include total quality management, career paths, and esprit de corps. In 1990, TRW S&D plans to implement several steps to satisfy the needs of its employees, including on-site child care, on-site fitness facilities, and housing assistance.

3. CHITESTER, BRIAN J. (United Technologies Corp., Pratt and Whitney Group, West Palm Beach, FL). "Lessons learned when implementing total quality management." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 5 p, (1990 9007). English United States IAA9018 AIAA/TIS. 1719418 A90-42205

Despite being called by some the 'alphabet soup program of the year'. TQM is accelerating throughout the aerospace industry. However, organizational inertia can ground even the most soundly designed processes. Critical TQM implementation barriers and lessons learned have been accumulated and expounded on in this paper. Dealing with organizational culture is one of the most difficult issues. In high-technology environments, where people have been task-oriented and product-focused, engineers and scientists often struggle to embrace a process orientation that focuses on participative involvement and prevention. Successful implementation requires a fundamental change in the way companies are structured to do business. Active executive involvement and leadership are paramount to achieving this cultural leap. Without this senior level commitment and accountability TQM will not flourish. Author

4. Krone, Bob. "Total Quality Management: An American Odyssey." *Bureaucrat*. v19n3. 35-38, (Fall 1990). BUR English References. 00529970

In a panel discussion, 6 Americans discussed total quality management (TQM). Customers' needs and expectations drive TQM systems. McDonnell Douglas Astronautics Co.'s Gil Mosard said that, for his company, TQM has 4 major elements: customer satisfaction, supportive cultural environment, people teams and partnerships, and disciplined systems and processes. According to the University of Southern California's Bob

Krone, if TQM can be successfully implemented in US industry, government, defense, and education, there will be a profound positive improvement in US total national security and stability. The largest barrier to implementation of TQM for Americans may be patience. Successful quality programs take time and tenacity. Mosard said that the only way TQM will be effective in the US is if there is a partnership between the academic world, the business world, and the government world to teach and implement it.

5. Miller, S. V. "Case Study of the Total Quality Program in Aeronautical Systems Division's Deputy for Development Planning Master's thesis." (Sep 90). Air Force Inst. of Tech., Wright-Patterson AFB, OH. 000805000 012200 English GRAI9112 United States. 1524182 AD-A230 546/4/XAB

This thesis investigated the Total Quality Program in the Aeronautical Systems Division's Deputy for Development Planning (ASD/XR). A literature review was conducted to provide information on key principles of Total Quality. The results of two surveys were analyzed individually and comparatively. The strata of Supervisory Status, Military/Civilian, and Directorate were compared in these analyses. The organization's attitude as a whole did not change significantly for the first to second survey. The strata of Supervisory Status showed significant differences in responses to many of the questions in both surveys, with Supervisory personnel responding more favorably.

6. O'Lone, Richard G. "Aerospace Suppliers Adopting TQM to Remain Competitive." Aviation Week & Space Technology. v133n3. 70-71, (Jul 16, 1990). AWS English. 00506204

Firms at all levels of the aerospace supplier network seem to be embracing total quality management (TQM) principles more as a means of improving their commercial business base than in response to government pressure in the defense sector. To compete effectively in the booming commercial aerospace markets, suppliers must provide high-quality products on time and at competitive prices. A number of West Coast suppliers either have a TQM culture in place or are developing one. Leach Corp. (Buena Park, California) is a clear leader in making TQM

work, demonstrating both financial and qualitative benefits. Other suppliers have been introduced to TQM techniques by vendors offering specialized services, such as Micro-Frame Technologies Inc. (Ontario, California). Aerospace manufacturing is so important in California that its Department of Commerce, Employment Training Panel, and community colleges have joined to develop a program aimed at developing TQM training for small and medium-sized aerospace manufacturers.

7. O'Lone, Richard G. |Dornheim, Michael A. |Scott, William A. |Klass, Philip J. "Boeing 777 Transport: A Risky Development Approach." Aviation Week & Space Technology. v134n22. 34-61, (Jun 3, 1991). AWS English Charts|Graphs. 00553393

Boeing Commercial Airplane Group's development of the 777 transport represents an attempt to produce an evolutionary aircraft at a time of nearly revolutionary internal change. The 777 family is designed to do a job that no passenger twin has done before - hauling wide-body loads of passengers on lengthy flights over oceans. Boeing has adopted a continuous quality improvement program as its own version of total quality management. Improvement goals include: 1. emphasizing workforce concerns, 2. striving for 100% digital definition of the 777, 3. producing a service-ready aircraft, 4. involving suppliers in the design process, and 5. incorporating a high degree of customer input in producing top-quality aircraft. Boeing is building the 777 in order to compete with the Airbus Industrie A330/A340 and the McDonnell Douglas MD-11. Boeing will use the Dassault Systemes/IBM CATIA 3-dimensional computerized modeling system and will not make physical mockups of the 777.

8. O'Lone, Richard G. "Boeing, Douglas Face Penalties over Deficiencies Cited in FAA Audit." Aviation Week & Space Technology. v134n25. 38, (Jun 24, 1991). AWS English. 00557399

Boeing and McDonnell Douglas face possible penalties as a result of Federal Aviation Administration (FAA) audits that revealed deficiencies in the way they manufacture aircraft. The shortcomings were revealed during detailed inspections of Boeing and McDonnell Douglas commercial transport manufacturing facilities as part of the FAA's quality assurance

systems analysis review. The inspections could result in enforcement actions ranging from a mild rebuke to fines to criminal procedures. While there were no implications that aircraft safety was impaired at either company, the findings came at a time when both US airframe builders are putting great emphasis on quality improvement. McDonnell Douglas' Douglas Aircraft Co. has conducted a sweeping and controversial total quality management program that triggered considerable internal upheaval. Boeing has been implementing at a more measured pace a similar continuous quality improvement effort.

9. SASSO, STEVEN E.; ISAKOWITZ, STEVEN J. (Martin Marietta Astronautics Group, Denver, CO). "ALS - A unique system approach." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 12 p, (1990 9007). English United States IAA9019 AIAA/TIS. 1720877 A90-42817

The principal features of the Advanced Launch System (ALS) that set it apart from past development work are presented, and some of the present achievements are discussed. The ALS is a flexible space launch system that is to provide the timely delivery of a wide range of payloads into orbit at a lowered cost. Design of a modular family of vehicles is based on the usage of advanced technology and concurrent engineering as well as operational efficiency. Analytical tools and principles of Total Quality Management, used in a disciplined systems-engineering process, were employed to develop the design approach. R.E.P.

10. SCHUTZENHOFER, L. A.; MCCONNAUGHEY, P. K.; MCCONNAUGHEY, H. V.; WANG, T. S.

(NASA, Marshall Space Flight Center, Huntsville, AL). "Management of a CFD organization in support of space hardware development." IN: AIAA Computational Fluid Dynamics Conference, 10th, Honolulu, HI, June 24-27, 1991, Technical Papers (A91-40701 17-34). Washington, DC, American Institute of Aeronautics and Astronautics, 1991, p. 21-31. 7, (1991 9100). National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL. English United States IAA9117 AIAA/TIS. 1782044 A91-40704

The management strategy of NASA-Marshall's CFD branch in support of space hardware development and code validation implements various elements of

total quality management. The strategy encompasses (1) a teaming strategy which focuses on the most pertinent problem, (2) quick-turnaround analysis, (3) the evaluation of retrofittable design options through sensitivity analysis, and (4) coordination between the chief engineer and the hardware contractors. Advanced-technology concepts are being addressed via the definition of technology-development projects whose products are transferable to hardware programs and the integration of research activities with industry, government agencies, and universities, on the basis of the 'consortium' concept. O.C.

11. Scott, William B. "Aerospace/Defense Firms See Preliminary Results from Application of TQM Concepts Aerospace Firms Committed to Installing TQM Methods." Aviation Week & Space Technology. v132n2. 61-63, (Jan 8, 1990). AWS English. 00483194

Although significant productivity gains are still several years away, the total quality management (TQM) concepts adopted by aerospace and defense companies are already starting to show preliminary results. In a number of firms, TQM has been introduced on the factory floor as a pilot project and then has been expanded into other areas. In some firms, TQM has been adopted on a companywide scale accompanied by major organizational restructuring. The effectiveness of TQM depends largely on the way it is introduced. Implementing TQM concepts requires a cultural change at all company levels. Firms reporting positive results have used a measured, incremental approach that introduces TQM first to a specific work area and then expands from there. Martin Marietta's Space Launch Systems Co. has used this approach with great success. The company estimates that the initial investment in training has already been recovered about 12 times over in terms of improvements in processes.

12. Shah, Syed Woelki, George. "Aerospace Industry Finds TQM Essential for TQS." Quality. v30n3. 14-19, (Mar 1991). QUA English Graphs. 00540157

Total quality management (TQM) is sweeping through the aerospace industry, as both large and small companies realize that their survival is at stake. Their objective is to convert TQM theory into daily practices at the working level. One of the companies converting to TQM



principles is Allied Signal's AiResearch Los Angeles Division, a manufacturer of environmental systems for commercial jet airliners and high-performance military aircraft. Basic operational and management weaknesses began to surface around 1984 when the US government began to hold it accountable for making things in strict accordance with written production standards. AiResearch President John Boppart realized that, before these problems could be corrected, workers' attitudes had to change. First, AiResearch opened the lines of communication from management on down. Second, it conducted more than 120,000 hours of employee training. Third, it revamped hundreds of policies, procedures, and processes. As a result, AiResearch has turned its operations around, improving productivity and cutting manufacturing time.

13. Sharman, Paul A. "World-Class Productivity at Standard Aero." CMA Magazine. v65n3. 7-12, (Apr 1991). RIA English. 00550900

Standard Aero (Winnipeg, Manitoba) is in the business of repairing and overhauling airplane engines. "World Best" is the way Standard Aero describes the results of its continuous efforts to drive total quality management (TQM) programs into every aspect of its business. Standard Aero was acquired in 1989 by Hawker Siddeley, a UK conglomerate. Under the leadership of President Bob Hamaberg, company personnel are forming task teams dedicated to effecting dramatic improvements in performance. Some of their accomplishments are: 1. reducing inventory investment by roughly 50% from 2 years ago, 2. eliminating 20% of annual paper consumption, and 3. dispersing the accounting staff among the business units, resulting in improved accounting record accuracy. In 1990, the company undertook a new project to redesign the complete business. The first manufacturing cell has been implemented, with better-than-target results, and 7 more projects will be undertaken.

14. "Total Quality Management, January 1990-July 1991 (Citations from the NTIS Database) Rept. for Jan 90-Jul 91." (Jul 91). National Technical Information Service, Springfield, VA. 055665000 English GRAI9117 United States. 1541443 PB91-800227/XAB

The bibliography contains citations concerning planning, development, and management of quality programs. The improvement of quality in products and the improvement of quality in service have become highly visible national priorities. Topics include strategic planning, customer service, employee participation, quality assurance, program management and case studies in Federal Government agencies. (Contains 152 citations with title list and subject index.)

15. WALO, MICHAEL L.; MOSARD, GIL R.; MOSES, STEVEN E. (McDonnell DouglasSpace, Systems Co., Huntington Beach, CA). "Development and implementation of a formal training program for concurrent engineering in an aerospace environment." AIAA, AHS, and ASEE, Aircraft Design Systems and Operations Meeting, Baltimore, MD, Sept. 23-25, 1991. 7 p, (1991 9109). English United States IAA9123 AIAA/TIS. 1801382 A91-54070

In the highly competitive aerospace industry, innovative approaches to quality improvement such as Total Quality Management (TQM) and one of its key elements, concurrent engineering (CE), are critical for survival. An effective training and education program is essential for a smooth transition to a concurrent engineering environment. The methodology and approach to instructional design used at McDonnell Douglas Space Systems Company (MDSSC) led to a concurrent engineering training program that stimulates interest in using concurrent engineering principles and tools. Other aerospace companies can adapt this training program to fit their specific needs. Author

16. Wernick, Steve. "The Path to TQS in a Small Company." Quality. v30n5. 14-17, (May 1991). QUA English. 00550873

While many companies view total quality management (TQM) as a cost improvement program that operates somewhat outside of day-to-day operations, others recognize that TQM is a key to survival in today's highly competitive, customer-oriented business environment. For All-

Power Manufacturing Co. (Santa Fe Springs, California), a producer of aircraft bushings, TQM was a self-imposed condition and, in fact, a way to stay in business and prosper. Jim Rankine, All-Power's president, recognized that, if All-Power were to survive and prosper, steps would have to be taken to improve quality and productivity. Understanding who the customer is and what the customer wants is the most important step in installing a TQM program. As a result of its experience with TQM, All-Power has a pragmatic view of TQM and the associated quality management tools. Pointing out that the job of TQM is never done, Rankine insists that everyone's job at All-Power is getting easier as the obstacles to their productivity continue to be removed.

### APPLIED TQM

17. "Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings." Seminar sponsored by Institute of Environmental Sciences and Aerospace Corp. Mount Prospect, IL, Institute of Environmental Sciences, 1990, 239 p. For individual items see A91-29690 to A91-29721, (1990 9000). English United States IAA9111 AIAA/TIS. 1764977 A91-29689

Recent developments in the technology and management of testing in the U.S. aerospace industry are discussed in reviews and reports. Sections are devoted to the impact of Total Quality Management on testing, risk and cost management, innovative testing and lessons learned, improved testing for launch systems, Space Station testing, and software issues in testing. Particular attention is given to eliminating waste in the test process, satellite environmental testing cost benefits, motion- and force-controlled vibration testing, Shuttle and Shuttle-C mixed-fleet processing operations, environmental interactions on the Space Station, integrated testing of the Space Station ECLSS at NASA Marshall, a comprehensive software package for thermal vacuum test monitoring, and real-time instrumentation control applications for satellite system tests. Diagrams, drawings, graphs, photographs, and tables of numerical data are provided. T.K.

18. Anonymous. "Giving TQM an Environmental Spin at ICI Americas." *Environmental Manager*. v2n12. 5-6, 16, (Jul 1991). ENM English. 00566228

About 4 years ago, ICI Americas Inc. (Wilmington, Delaware) started to integrate total quality management (TQM) principles with its manufacturing units - those businesses that manufacture agricultural chemicals, specialty chemicals, and polyester films. About 18 months ago, it became obvious that the corporate staff, such as Safety, Health, and Environmental Affairs (SHEA), were critical players in the quality effort. They were "suppliers" to the businesses and had to be included in the effort. The objective in involving staff with TQM was to create service excellence. ICI, the \$4-billion to \$5-billion US subsidiary of UK-based Imperial Chemicals Industries PLC, is working on service excellence on 2 levels: 1. the infrastructure, which will sustain the TQM effort over time, and 2. every individual in the organization, who receives TQM training.

19. Baatz, Elizabeth B. "Who Says Small-Fry Can't Compete for the Baldrige?" *Electronic Business*. v17n19. 50, (Oct 7, 1991). ELB English. 00577243

With just \$13 million in annual sales, Marlow Industries Inc. won a site visit in its first attempt at the Malcolm Baldrige Award. Owner and president Ray Marlow believes that total quality management is a matter of corporate survival. According to chief operating officer Chris Whitzke, being small meant that, when managers listed a weakness on their section of the award application, they could immediately solve the problem. Management's commitment to empowering the employees is another key to the success. With upper management acting only as mentors and champions, each department team has a louder voice than is typical in US industry.

20. Berkman, Barbara N. "European Electronics Goes Green." *Electronic Business*. v17n16. 50-54, (Aug 19, 1991). ELB English. 00566219

With the environmental revolution moving into the European electronics industry, many top companies are striving to increase the recyclability of their products. Siemens AG, Telefon LM Ericsson, IBM Europe, and other companies are changing the design of their products to reflect environmental values. Some companies are even introducing environmental benchmarks into total quality management (TQM) reviews of operations and suppliers. Despite the European electronics industry's recycling successes, it is considerably behind other industries in its approach to plastics recycling, according to consultant Eric Johnson of Chem Systems Ltd. Both IBM Europe and Siemens have introduced programs which aim to recover and recycle old and obsolete equipment.

21. Betts, Mitch. "99% Perfect Not Enough for General Dynamics." *Computerworld*. Section 2. 41, 43, (Oct 8, 1990). COW English. 00518439

At General Dynamics Corp., the US' number 2 defense contractor, total quality management (TQM) means building tank hatches with a 100% seal and building information systems (IS) that exactly meet the requirements of the business units. As a general rule, it means making continuous process improvements to ensure that things are done right the first time. No one claims that General Dynamics has reached perfection in any area, but the fact that it tries so hard may help to explain why it ranks as the top aerospace company in the *Computerworld* Premier 100 for the 2nd straight year. The biggest change in General Dynamics IS unit over the last few years is that it has moved even more toward a business orientation as opposed to being technology-driven. Richard Howard, the top IS executive at Northrop Corp., says that General Dynamics' real strength is having a clearly stated vision for IS management. A list of the top 10 aerospace firms in *Computerworld's* Premier 100 ranking is provided.

22. Brownlee, J. C. "Process of Excellence: A History of Quality in the Air Force Logistics Command Rept. for 1907-1989." (Aug 89). Air Force Logistics Command, Wright-Patterson AFB, OH. 000808000 012300 English GRAI9108 United States. 1511466 AD-A227 628/5/XAB

This document describes the evolution of 'quality', through centralization and decentralization, as applied in the Air Force Logistics Command, from the Wright Brothers to 1989. It depicts the practical application of the 'quality movement', from the Industrial Revolution of the mid-19th century to the present, and how that movement impacted the maintenance and repair of USAF weapon systems. Keywords: TQM, Management planning and control, Quality control, Management, TQM (Total Quality Management), Quality management, Total quality management, Logistics quality, Centralization. (Author) (kr)

23. Bull, Steven. "Total Quality Management in a Redundancy Situation." European Management Journal. v9n3. 288-294, (Sep 1991). EMJ English Charts|Graphs. 00578633

Interox Chemicals Ltd. (UK) has been involved in a turnaround process, adopting total quality management (TQM) as the key to change. The management and staff recognized that the program had considerable redundancy implications, but it was believed that TQM could lead to beneficial cultural and attitude changes. The Business Improvement Plan was communicated to all employees in a positive manner. A crucial part of the planning was the introduction of TQM before the announcement of the plan. TQM was introduced at a time when the staff was suffering from the emotional attitudes associated with doubt and uncertainty. A comprehensive briefing document called Interox Chemicals Ltd., Total Quality was given to each employee at the briefing session. Workshops reinforced the commitment to TQM and educated staff on the subject.

24. Caudron, Shari. "The Importance of Being Earnest." *Electronic Business*. v17n19. 150-154, (Oct 7, 1991). ELB English. 00577255

Programs that encourage employee involvement, group participation, training, performance recognition, and staff morale are the new focus of quality from a human resource (HR) perspective. One of the more dramatic and successful efforts at empowering employees is taking place at Martin Marietta's Astronautics Group (MMAG) in Denver, Colorado. Two years ago, MMAG instituted a total quality management (TQM) process, an ongoing effort to improve customer satisfaction. To build employee support for the quality effort, MMAG dropped its pyramid hierarchy of management in favor of a flatter structure and more participative management approach. High-performance work teams were organized to empower people closest to the work to make decisions about how that work is performed. The team approach has resulted in more than \$15 million in production-area savings in 1990. Less tangible benefits include improved morale. Interviews with MMAG employees yielded strong positive feelings about their work and their employer.

25. CHAMBERLAIN, ROGER A. (Martin Marietta Astronautics Group, Denver, CO). "ALS - A unique design approach." *AIAA, Space Programs and Technologies Conference*, Huntsville, AL, Sept. 25-27, 1990. 12 p, (1990 9009). English United States IAA9101 AIAA/TIS. 1736491 A91-10223

An advanced launch system (ALS), which is intended to be flexible and to deliver a wide range of payloads at a reduced cost, is discussed. The ALS concept also features total quality management, modular subsystems, standardized interfaces, standardized missions, and off-line payload encapsulation. The technological improvements include manufacturing of dry structures, use of composite materials, adaptive guidance and control systems, and laser-initiated radar systems. The operational improvements range from paperless management, to rocket engine leak detection devices and automated ground operations. B.P.

26. CHITESTER, BRIAN J. (United Technologies Corp., Pratt and Whitney Group, West Palm Beach, FL). "Lessons learned when implementing total quality management." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 5 p, (1990 9007). English United States IAA9018 AIAA/TIS. 1719418 A90-42205

Despite being called by some the 'alphabet soup program of the year'. TQM is accelerating throughout the aerospace industry. However, organizational inertia can ground even the most soundly designed processes. Critical TQM implementation barriers and lessons learned have been accumulated and expounded on in this paper. Dealing with organizational culture is one of the most difficult issues. In high-technology environments, where people have been task-oriented and product-focused, engineers and scientists often struggle to embrace a process orientation that focuses on participative involvement and prevention. Successful implementation requires a fundamental change in the way companies are structured to do business. Active executive involvement and leadership are paramount to achieving this cultural leap. Without this senior level commitment and accountability TQM will not flourish. Author

27. Clark, H. J. "Total Quality Management: An Application in a Research and Development Laboratory Final technical paper Dec 88-Sep 89." (Dec 89). Air Force Human Resources Lab., Brooks AFB, TX. 026411000 404415 English GRAI9008 United States. 1437037 AD-A215 808/7/XAB 9981 03

In September 1988, the Air Force Human Resources Laboratory (AFHRL) took initial steps to set up a Total Quality Management (TQM) program in the Laboratory. The implementation procedure used was the Method for Generating Efficiency and Effectiveness Measures (MGEEM). This procedure focuses on satisfying customer requirements, identifying Key Result Areas (KRAs), and tracking progress in those KRAs through Mission Effectiveness Indicators. This report outlines how TQM was implemented in AFHRL, and describes the lessons learned in the process. Lessons learned address: TQM versus Total Quality Control (TQC), applying TQM in an R&D organization, sustaining TQM, process action teams, and the acceptance of MGEEM as a method for implementing TQM. The survey feedback intervention technique, the confrontation meeting, and work teams are recommended for establishing TQM



in an R&D organization. The procedures allow both managers and workers to develop a sense of ownership in the TQM process. This in turn increases the likelihood of sustaining the program and insuring its long-term effectiveness. (AW)

28. "Defense Depot Mechanicsburg Total Quality Management Implementation Plan." (Jun 89). Defense Depot, Mechanicsburg, PA. 095772000 420903 English GRAI9003 United States. 1425281 AD-A212 964/1/XAB

This document discusses the implementation of TQM by Defense Depot Mechanicsburg. It seeks to infuse the principles of TQM throughout DDMP. The phases of TQM implementation at DDMP are determination, commitment/planning, implementation, training, recognition, and maintenance. Keywords: Continuous process improvement. (KR)

29. "Defense Depot Tracy Total Quality Management Plan." (Jul 89). Defense Depot, Tracy, CA. 095775000 420904 English GRAI9003 United States. 1425280 AD-A212 963/3/XAB

This document discusses the implementation of TQM by Defense Depot Tracy. DDTC will focus TQM efforts on customer support, people, depot transition - facilities and programs, quality audits of products and operations, and assets management. Keywords: Financial management; Continuous process improvement. (KR)

30. "Department of the Navy Total Quality Management Implementation Plan Quality management (Draft)." (24 Apr 89). Department of the Navy, Washington, DC. 001840000 English GRAI9109 United States. 1517613 PB91-153957/XAB

The report represents the beginning of a fundamental shift in the Navy's approach to leadership and management. It provides guidance for implementation of TQM throughout the Department of the Navy; establishes goals for TQM implementation and for continuation of Total Performance Improvement efforts; includes existing value-added strategies into the TQM philosophy to achieve continuous improvement in the DON (Department of the Navy) acquisition process; and establishes responsibility and publishes the strategies for meeting the goals outlined in the plan.

31. "DRMS (Defense Reutilization and Marketing Service) Total Quality Management (TQM) Implementation Plan." (Jul 89). Defense Reutilization and Marketing Service, Battle Creek, MI. 095779000 419178 English GRAI9003 United States. 1425255 AD-A212 937/7/XAB

This document discusses the implementation of TQM at the Defense Reutilization and Marketing Service. The purpose of the plan is to provide a structured method to achieve the DRMS vision of pursuing continuous improvement in service provided to the Armed Forces and the public. The document includes guiding principles, goals and guidelines to problem solving. Keywords: Continuous process improvement. (KR)

32. "DSAC (Defense Systems Automation Center) TQM (Total Quality Management) Implementation Plan." (Jul 89). Defense Systems Automation Center, Columbus, OH. 095780000 420906 English GRAI9003 United States. 1425279 AD-A212 962/5/XAB

This document discusses the implementation of Total Quality Management. It includes TQM concepts, methodology, goals and strategies, and milestones. DSAC's overarching strategic goal is to improve support to the customer. Keywords: Continuous process improvement. (KR)

33. Eckerson, Wayne. "Total Quality Mgmt. Paying Off for Users." Network World. v7n16. 25, 28, (Apr 16, 1990). NWW English. 00493591

An emphasis on total quality management (TQM) is paying big dividends for network departments at many major corporations. These departments have cut communication costs, improved customer service, and boosted departmental morale by using TQM principles to improve the effectiveness of internal work processes. While TQM involves a variety of techniques and tools, it essentially refers to building a commitment among workers and managers to improve the quality of products and services. Since applying TQM principles in 1986, Xerox Corp.'s corporate telecommunications department has cut an average of \$8.5 million annually from its budget. At the same time, it has improved the quality of service it provides. Like Xerox, McDonnell-Douglas Aerospace Information Services Co. puts all its employees through classes that explain the

importance of a commitment to quality and teach cooperation and teamwork. After one year, quality management has already boosted teamwork and camaraderie in McDonnell-Douglas' telecommunications department.

34. EDWARDS, JOHN W. (Thiokol Corp., Brigham City, UT). "ASRM nozzle design and development." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 27th, Sacramento, CA, June 24-26, 1991. 6 p, (1991 9106). English United States IAA9118 AIAA/TIS. 1786465 A91-44112

The objectives of the Advanced Solid Rocket Motor (ASRM) Nozzle Program are to improve performance, reliability, and flight safety. A program has been implemented which will achieve the goal through application of the methods of Total Quality Management to develop a simpler, more robust design for the nozzle and its manufacturing processes. Substantial weight reductions have been achieved through the use of low-density carbon-cloth phenolic in the aft exit cone and a lighter weight flex seal. Subscale, prototype, and development and qualification motor tests will be used to develop and validate the materials, processes, and designs. Author

35. Edwards, Mark R. "Accurate Performance Measurement Tools." HRMagazine. v36n6. 95-98, (Jun 1991). PAD English. 00557146

Because performance and promotability information comes primarily from a worker's immediate supervisor, that information may suffer from bias, inflation, unfairness, and inaccuracy. In the future, performance measurement will have a different look. Multiple-rater teams, making continuous measures over a variety of criteria, will provide high-quality information on individuals' performance. The use of multiple raters combined with computer analysis will provide many safeguards that are not possible with single-rater systems. Artificial intelligence built into multiple-rater systems can spot measurement unreliability where it exists. Intelligence built into measurement systems can also enhance career development by showing the strengths and developmental needs for each employee. Employee performance measurement in the future will help create a more self-directed workforce.

36. Eisman, Regina. "Government Gridlock." Incentive. v164n1. 24-28, (Jan 1990). IMK English Graphs. 00482436

Government officials and outside analysts believe that the federal bureaucracy's comprehensive productivity and quality program will make it easier for businesses and citizens to deal with agencies. Some say that the cost savings could ultimately cut the deficit and lower taxes. Several billion dollars have already been saved due to employee suggestions and the increased use of principles and tactics borrowed from private industry. Skeptics say real gains are not possible in a bureaucracy, partly because of the size of government. The National Association of Government Employees, the federal workers' union, is generally opposed to merit pay programs, quality circles, and other total quality management (TQM) components. Efforts to improve productivity have intensified with the formation in June 1988 of the Federal Quality Institute, whose mission is to apply the principles of TQM, a customer-driven system that requires extensive employee involvement. The Office of Personnel Management is exploring the idea of using incentives to reward employees.

37. Eubanks, Paula. "Gainsharing: Reveal Financial Data to Employees." Hospitals. v65n13. 74, (Jul 5, 1991). HPT English. 00558964

Quality experts are encouraging administrators to share financial data with lower level employees who are participating in gainsharing and other financial incentive programs. Sharing such data runs counter to long-standing industry tradition, but it enables an employee participating in a gainsharing program to make the connection between an individual's job and the future of the institution. Michael Bice of Allegheny Health System says that employees can relate best to financial basics, such as the bottom line, profit and loss statements, and savings and investment figures. Robert Roeder of William M. Mercer Inc. says that teaching employees how to use financial data to make decisions is a critical element of sharing financial information. It takes a knowledgeable workforce to be empowered and to understand how quality is truly achieved, according to Roeder.

38. Farquhar, Carolyn R. "A Vision for Quality." Canadian Business Review. v18n2. 7-15, (Summer 1991). CAB English. 00563496

In an interview, Xerox Canada Inc. Chairman David R. McCamus shared his insights into creating and sustaining total quality management. In 1989, Xerox Canada won the first Gold Award for Quality. Xerox's journey toward quality began in the late 1970s and early 1980s, when the company realized that the competition was implementing something called quality. In those days, quality was primarily focused on manufacturing. Xerox learned how to apply quality beyond the manufacturing confines into all the functions in the organization. To initiate the necessary culture change and create an organization that is flexible, a vision must be created of what is to be accomplished. Xerox's management did not proclaim its vision. It challenged the employees to create their vision. McCamus is confident that Xerox can sustain the quality momentum because the company has made the transition from quality being something on the surface to being something very fundamental.

39. Giles, Eileen. "Seeking Out Dolphins." Industrial & Commercial Training. v23n2. 12-16, (1991). ICT English References. 00553921

Focusing on the need for transformational leaders in organization, animal metaphors are used to identify 3 types of leaders commonly found: 1. sharks, those who like to win at all costs, 2. carp, those who keep a low, passive profile, and 3. dolphins, those who are proactive, learn from setbacks, and use breakthrough thinking to solve problems. Dolphin thinking is in short supply but urgently needed in a world of constant change and uncertainty. Some promising signs of dolphin thinking among leaders are found in total quality management, 2. mentoring, and 3. Training and Enterprise Councils. Human resource specialists should help to increase the supply of dolphin thinking through encouragement of more open attitudes to recruitment and through generating a learning orientation in their directors and organizations and in themselves. David Kearns, Chairman of Xerox, appears to display all of the characteristics of a transformational leader. Kearns undertook

the role of change agent and believes in the importance of employee involvement.

40. Haedicke, Jack Feil, David. "In a DOD Environment: Hughes Aircraft Sets the Standard for ABC." *Management Accounting*. v72n8. 29-33, (Feb 1991). NAA English Charts. 00536257

Hughes Aircraft Co.'s activity-based costing (ABC) project is helping bring in a new era of contractor and government cooperation. Cost competition among contractors is intensifying as a result of changes in US Department of Defense (DOD) procurement policies and current global politics. Hughes Aircraft' has evolved its systems carefully over a period of 5 years, thereby allowing local auditors to grow and learn with the company as equal partners. In essence, this transition recognizes that, in today's environment, activities rather than products are the absorbers of cost. The company's goal is to obtain accurate product cost information. The steps to making the transition to ABC involve: 1. multiple burden centers, 2. central service allocations, and 3. activity accounting. The full implementation of ABC in a DOD contracting environment will require accounting changes.

41. HAUSSMANN, AL; DEPHILIPPIS, BOB Aerojet, Propulsion Div., Sacramento, CA). "The Process Team concept." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 27th, Sacramento, CA, June 24-26, 1991. 5 p, (1991 9106). English United States IAA9117 AIAA/TIS. 1783032 A91-41692

The organizational responsibilities and operational aspects of the Process Team concept are presented. The overall objective of the Process Team is to reduce the time to complete an operation or to reduce the span time of a product by utilizing cost-effective total quality management principles and practices while meeting customer requirements. Organizations that have properly implemented this process team concept have achieved improved quality, safety, cost, and schedule performance while experiencing improved morale. R.E.P.

42. Hayes, Glenn E. "Three Views of TQM." *Quality*. v29n4. 19-24, (Apr 1990). QUA English. 00494628

Three companies were surveyed with regard to their management practices, how they put total quality management (TQM) to work, and what they expect to achieve in the coming years through the use of TQM. Ed Dunford of TRW Space & Defense Sector stated that TQM makes sense from a business standpoint - it improves quality, reduces costs, and enhances productivity. TQM cuts through cumbersome problems so that good products can be manufactured, with a potential of saving 30% and creating a pleasant workplace. A. M. Lovelace of General Dynamics believes that global competition and the increased demand for quality make TQM essential. According to Mike Wintermute of M/A-COM Government Systems Division, being a government supplier is an incentive to adopting TQM because the government requires that its suppliers use the concept. Management must let employees know it is serious about TQM.

43. Heller, Karen. "Changing a Company's Mind-Set." *Chemical Week*. v149n8. 48-49, (Sep 25, 1991). CEM English. 00572280

Chemical process industries (CPI) executives decide to institute quality management techniques for many reasons, one of which is to improve operations. Consultant groups, such as Philip Crosby Associates (PCA), often assist CPI firms in the establishment of quality management. PCA's Larry McFadin says that the hardest task is getting management to accept that quality is their responsibility. Chemical companies can use quality techniques to meet environmental pressures. Defining customers is key in instituting quality processes, and the chemical industry is realizing that the general public is one of its customers. Total quality management and the Chemical Manufacturer's Association's Responsible Care programs work well together. Both have continuous improvement as a fundamental premise and are self- and peer-regulating.

44. Henry, Craig A. "Does the United States Need Quality Awards?" *Quality Progress*. v23n12. 26-27, (Dec 1990). QPR English. 00528660

Each year, it becomes clearer that the US needs quality awards. Programs like the NASA Excellence Award for Quality and Productivity, the Malcolm Baldrige National Quality Award, and others provide a variety of benefits. These include: 1. increasing the value of goods and services purchased by consumers, 2. providing motivation for continuous improvement, and 3. returning pride to using the label "Made in the USA." These programs, by necessity, have focused attention on continuous improvement and total quality management (TQM). The most quality-conscious organizations recognize that they must devote as much time to the processes that ensure continued improvement as to the products and services themselves. The message is spreading, due in large part to the sharing of hundreds of companies that participate in these prestigious programs, not to win an award, but to be recognized for the level of performance they already have achieved.

45. Houghton, James R. "Quality: Beyond the Corporate Walls." *Executive Speeches*. v5n9. 19-24, (Apr 1991). EXS English. 00546910

Despite economic, political, and social problems, the US is on its way back, with the people of industry as the prime movers. US industry is closing in on the competition, with the Japanese prodding the US into action. A quality explosion is occurring in the US with something more important than industrial improvement happening. Quality is an ethical behavioral system as well as a business process. US business quality programs are beginning to have a significant benefit "spill over" effect on other institutions in society. Corning Inc. uses a Total Quality Management System that includes the following strategies: 1. Provide unquestioned leadership. 2. Focus on customer results. 3. Train and retrain all employees. 4. Achieve and recognize wide employee participation. 5. Communicate about quality internally and externally. 6. Provide the quality process and the quality tools.



46. Howe, Maynard A. Dawson, Carman L. Gaeddert, Dec. "Expert Training That's Free." Personnel Journal. v70n3. 59-63, (Mar 1991). PEJ English. 00541170

In 1991, corporate America will spend more than \$40 billion to provide employee training courses that often will prove inappropriate or ineffective when evaluated by measuring improved performance. There are some notable examples of training excellence. One of these successes was a program developed by General Dynamics' Convair Division (San Diego, California). Three years ago, the organization's research and engineering (R&E) department launched a voluntary training program after normal work hours for its technical and management leaders. Through careful planning and the use of available resources, the company not only has sustained its competitive advantage by enhancing the performance of individual engineering leaders and improving morale, but it has also saved \$2.5 million. The plan was equipped with an R&E strategic model having 8 phases, including: 1. Assess enrollment and design needs. 2. Design curriculum. 3. Select instructors. 4. Evaluate effectiveness. 5. Celebrate success.

47. Howland, Jennifer. "10 Savviest Production Executives." Folio: The Magazine for Magazine Management. v20n6. 73-76, (Jun 1, 1991). FOL English. 00552592

The 10 savviest production executives, as determined by a poll of 1,000 of their peers, became the best at magazine production by taking risks, pushing on the edge of technology, believing in the worth of their employees, and taking time to enjoy life. Angelo Rivello of Newsweek is a doer and not a follower; he is a shrewd negotiator, but a fair one. Michael Arpino of Cahners consumer entertainment division pioneered the use of selectronic binding for consumer magazines at Games. Kit Taylor of Times-Mirror Magazines believes that management must surround itself with very qualified and professional people. Vito Colaprico of The New York Times Co. Magazine Group has a great vision of the technology of the future but never loses sight of day-to-day operations. Rosemary Sullivan of Lang Communications urges the view of production as a profit, not just a cost, center.

48. Knorr, Robert O./Thiede, Edward F., Jr. "Making New Technologies Work." *Journal of Business Strategy*. v12n1. 46-49, (Jan/Feb 1991). JST English. 00532934

New technologies have resulted in astounding increases in quality, productivity, and customer satisfaction. Companies in manufacturing, service, and information industries have been reaping the benefits of improvements in these areas. In particular, corporate America is emerging from its initial experience with such new technologies as concurrent engineering, flexible production-manufacturing, just-in-time cycle time reduction, and total quality management. Three major strategic changes needed in order for these technologies to succeed are: 1. the adoption of an enterprise viewpoint that includes customers, suppliers, distributors, and makers of complementary goods and services, 2. an emphasis on production as the hub of the enterprise, and 3. the structuring of the enterprise to respond quickly to the full spectrum of customer demands at ever higher levels of performance. Industry leaders are shifting to radically different ways of thinking as they adopt the new technologies. At the core are 4 revolutionary changes: simultaneity, flexibility, self-management, and continuous improvement.

49. Kwok, Daniel. "TQM and Australian CEOs." *Quality*. v29n11. 14-15, (Nov 1990). QUA English. 00523554

Although quality control using statistical analysis is common among Australia's manufacturers, awareness of total quality management (TQM) doctrine as a tool for service and manufacturing industries remains relatively low. According to a recent survey of 320 chief executive officers (CEO) of major Australian organizations, the most commonly experienced barriers to implementing and maintaining TQM programs were: 1. convincing management and staff of the long-term value, and 2. competing demands on time for the CEO and other managers in the organization. Some major corporations are implementing companywide TQM, including such multinationals as Fisher Controls, Amdahl, and Union Carbide. The survey also highlights that intense competition has forced many companies, particularly manufacturing exporters, to adopt TQM. It became apparent shortly after entering the Asian markets that there is a distinct

relationship between quality improvement and survival, says Kevin Miller of Containers Packaging, a food and beverage can manufacturer.

50. Lavy, Nachman. "The View from Israel . . . Quality for Competitiveness." *Journal for Quality & Participation*. v14n4. 86-87, (Jul/Aug 1991). QCJ English. 00569198

Several shared characteristics between Israeli managers and employees, such as democracy and equality, sharing and collaboration, and personal opinion, have made the Israeli culture and tradition suitable for successful implementation of participation in producing quality. In the early 1980s at Periclas - Dead Sea, a chemical manufacturing company that exports 100% of its output, the first quality circles in Israel began to function. The Institute of Productivity helped Periclas' management to implement quality circles. By the late 1980s, about 50 organizations in Israel had quality circles; a portion of these began implementing total quality management (TQM). The foundation of the Israel Quality Circles Society and the success of previous implementations proved to be the catalysts for this change in Israel. Companies that demonstrate the characteristic of those implementations are Electro-Optical Industries, Motorola Israel, and Teva Pharmaceutical Industries.

51. Lee, Chris. "The Customer Within." *Training*. v28n7. 21-26, (Jul 1991). TBI English. 00560642

Total quality management focuses on the internal customer as well as the external. The needs of employees must be met so that they, in turn, can provide excellent service for the external customer. At Westinghouse Electric Corp., for example, the internal customer-supplier approach has proven to be a powerful catalyst for corporate quality improvement efforts that began a decade ago, according to Carl Arendt of the Westinghouse Productivity and Quality Center. He says that the most profound effect is an attitude change. The first steps in the quality process are to identify the customers and to meet with them. A support function, such as a management information systems department, might want to establish service-level agreements with internal customers. Whether agreements between internal customers and

suppliers are formal or informal, advocates of the approach agree that the process for reaching them must be flexible.

52. Majumdar, Amit Smolenyak, Megan/Yencho, Nancy. "Planting the Seeds of TQM." National Productivity Review. v10n4. 491-497, (Autumn 1991). NLP English. 00574267

Great challenges face a company locked in a regulated climate. Even under such trying circumstances, many corporate entities have found the key to competitive success in the implementation of a total quality management (TQM) program and philosophy. The Steel Authority of India Ltd. (SAIL) is one such company that is currently undergoing a total quality transformation. Poor quality had cost the company in terms of greater inventory, scrap costs, and by-product ratings, and therefore values had been degraded. SAIL's new companywide TQM program focuses on quality of products and services, human resources, continuous innovation, customer service and satisfaction, and capitalization of corporate resources.

53. McGovern, John P. "Quality: The Spirit of Europe." Journal for Quality & Participation. v14n4. 18-20, (Jul/Aug 1991). QCJ English Charts. 00569186

"Quality: The Spirit of Europe" is the conference theme of the European Organization for Quality's (EOQ) 36th Annual Conference, which will be held in Brussels, Belgium, in June 1992. It is apparent that Europe has been recognizing the competitive potential and necessity of quality management and is doing something about it. At the 34th Annual EOQ Conference in 1990, subject areas included: 1. implementing software quality, 2. the quality improvement process, and 3. training, development, and motivation. EOQ priorities for 1992 include the harmonization of all different European Community country standards to the ISO 9000 series of quality standards and the certification of industry and business quality systems to ISO 9000. The requirements being established by the EOQ are creating a sturdy bridge to total quality management (TQM) in Europe. In the US, past winners of the Malcolm Baldrige National Quality Award

could form a National Advisory Council to formulate a national agenda for continuous improvement in TQM.

54. Muller, Frank. "A New Engine of Change in Employee Relations." *Personnel Management*. v23n7. 30-33, (Jul 1991). PMA English. 00564147

Rover's powertrain plant at Longbridge, which produces the new K series engine among other things, has been developing a whole new approach to employee relations. Teamwork, total quality management, flexible working practices, employee involvement, corporate reorganization, and a restructuring of the plant's relations with its suppliers have been brought together into one integrated, mutually reinforcing initiative. The UK company's initiative, known as "Teamwork in engineering," directly addresses product development issues. Line responsibility is shifted from components to projects, providing a product focus and allowing individuals to identify more with the outcome of their work, thus building commitment. Communication is improved by reducing hierarchical layers and encouraging cross-functional contacts. This, in turn, builds on Rover's practice of conformance engineering, whereby the process, quality, and industrial engineering functions work together as a resource team reporting directly to the conformance manager, who reports to the manufacturing manager.

55. Nash, Tom. "Quality Management -- Getting It Right." *Chief Executive*. 8-10, (Jan 1987). CEX English. 00352689

Since 1983, UK companies typically have spent between 25% and 40% of their income on quality, trying to ensure defect-free production. Today's Total Quality Manager (TQM) program differs from other traditional approaches to quality improvement by: 1. demanding management commitment, and 2. continually meeting customer requirements by harnessing all organizational efforts. Employees are motivated to eliminate all defects rather than most defects, since the higher costs will be repaid several times over by greater customer satisfaction. Excellent working relationships are vital to TQM programs; thus, many packages include in-house training programs for executives and managers. After diagnosis of a company's strengths and weaknesses, actions are suggested,

including the adoption of numerous primary quality standards. As managers become committed to the standards, they will become the in-house trainers of the various shop-floor workers.

56. Nazaruk, Pam. "Commitment to Quality: Test Process Not Product, Orders the Pentagon." *Electronic Business*. v16n19. 163-164, (Oct 15, 1990). ELB English. 00519538

The Pentagon's shift from testing the product to testing the process is starting to take hold among defense-electronics contractors, which are implementing total quality control to satisfy the Department of Defense's (DOD) new requirements. The Pentagon's total quality management (TQM) strategy consists of: 1. a qualified manufacturing list, 2. a field failure return program, 3. standard military drawings, and 4. a tester independent software support system. Getting on the qualified manufacturing list is a 2-step process. First, the DOD quality team works with an electronics company when it is developing its quality management plan. Then, in a validation visit, a DOD team assesses the effectiveness of quality management by analyzing key TQM tools, such as statistical process control and experiment design. AT&T Co. is the first company on the qualified manufacturing list. Intel Corp. has passed the validation visit, but is awaiting review of its drawings and specifications.

57. O'Lone, Richard G. "Aerospace Suppliers Adopting TQM to Remain Competitive." *Aviation Week & Space Technology*. v133n3. 70-71, (Jul 16, 1990). AWS English. 00506204

Firms at all levels of the aerospace supplier network seem to be embracing total quality management (TQM) principles more as a means of improving their commercial business base than in response to government pressure in the defense sector. To compete effectively in the booming commercial aerospace markets, suppliers must provide high-quality products on time and at competitive prices. A number of West Coast suppliers either have a TQM culture in place or are developing one. Leach Corp. (Buena Park, California) is a clear leader in making TQM work, demonstrating both financial and qualitative benefits. Other suppliers have been introduced to TQM techniques by vendors offering

specialized services, such as Micro-Frame Technologies Inc. (Ontario, California). Aerospace manufacturing is so important in California that its Department of Commerce, Employment Training Panel, and community colleges have joined to develop a program aimed at developing TQM training for small and medium-sized aerospace manufacturers.

58. O'Lone, Richard G. | Dornheim, Michael A. | Scott, William A. | Klass, Philip J. "Boeing 777 Transport: A Risky Development Approach." *Aviation Week & Space Technology*. v134n22. 34-61, (Jun 3, 1991). AWS English Charts/Graphs. 00553393

Boeing Commercial Airplane Group's development of the 777 transport represents an attempt to produce an evolutionary aircraft at a time of nearly revolutionary internal change. The 777 family is designed to do a job that no passenger twin has done before - hauling wide-body loads of passengers on lengthy flights over oceans. Boeing has adopted a continuous quality improvement program as its own version of total quality management. Improvement goals include: 1. emphasizing workforce concerns, 2. striving for 100% digital definition of the 777, 3. producing a service-ready aircraft, 4. involving suppliers in the design process, and 5. incorporating a high degree of customer input in producing top-quality aircraft. Boeing is building the 777 in order to compete with the Airbus Industrie A330/A340 and the McDonnell Douglas MD-11. Boeing will use the Dassault Systemes/IBM CATIA 3-dimensional computerized modeling system and will not make physical mockups of the 777.

59. O'Lone, Richard G. "Boeing, Douglas Face Penalties over Deficiencies Cited in FAA Audit." *Aviation Week & Space Technology*. v134n25. 38, (Jun 24, 1991). AWS English. 00557399

Boeing and McDonnell Douglas face possible penalties as a result of Federal Aviation Administration (FAA) audits that revealed deficiencies in the way they manufacture aircraft. The shortcomings were revealed during detailed inspections of Boeing and McDonnell Douglas commercial transport manufacturing facilities as part of the FAA's quality assurance systems analysis review. The inspections could result in enforcement actions ranging from a mild rebuke to fines to criminal procedures.

While there were no implications that aircraft safety was impaired at either company, the findings came at a time when both US airframe builders are putting great emphasis on quality improvement. McDonnell Douglas' Douglas Aircraft Co. has conducted a sweeping and controversial total quality management program that triggered considerable internal upheaval. Boeing has been implementing at a more measured pace a similar continuous quality improvement effort.

60. PATTERSON, DOUGLAS O. (U.S. Navy, Washington, DC). "Saying is one thing, doing is another DoD critical path templates and Total Quality Management in relation to industrial processes associated with material acquisition." IES, Journal (ISSN 1052-2883), vol. 34, Jan.-Feb. 1991, p. 17-20, (1991 9102). English United States IAA9110 AIAA/TIS. 1761115 A91-26847

This paper briefly reviews the origins of the DOD templates and their relationship to the industrial processes associated with material acquisition. The principal features of the TQM initiative are then summarized, with emphasis on the DOD and Navy interpretations currently being implemented. Focusing on the Navy material acquisition function, the templates and TQM are shown to represent an integrated approach which offers maximum benefit to both the government and industry. Some 'traps' in the DOD implementation of TQM are identified, along with some thoughts on how to escape. Author

61. Peacher, M.; Lager, F.; Magee, D. "Strategy for Improvement: U.S. Internal Revenue Service Quality management (Final)." (1987). Internal Revenue Service, Washington, DC. 016648000 English GRAI9110 United States. 1520575 PB91-154062/XAB

The report outlines the strategy planned by the Internal Revenue Service in conjunction with the National Treasury Employees Union to implement their quality improvement process. It was used to provide background and instruction for IRS staff attending quality improvement process training. Definitions of quality and customers are included, as well as discussion of several steps the IRS has taken to improve quality, the IRS approach to quality, and quality improvement process teams.



62. Penzer, Erika. "Making a Federal Case for Quality." Incentive. v165n8. 29-30, 107, (Aug 1991). IMK English. 00566408

In the government, total quality management (TQM) faces regulations and outdated policies that hinder its success. Most of the government agencies involved in TQM hesitate to talk about financial rewards because whatever they claim to save, the Office of Management and Budget immediately takes back. Still, some government operations have quantified their TQM successes. For example, the Internal Revenue Service (IRS) Service Center in Cincinnati saved more than \$270,000 in 1989 by helping citizens file their returns electronically rather than on paper. NASA's Johnson Space Center saved more than \$12 million by reducing the thickness criteria for its Space Shuttle Thermal Control System blankets, a suggestion that came from a quality team.

63. Portanova, P. L.; Tomei, E. J. "Quality Function Deployment in Launch Operations." (23 Nov 90). Aerospace Corp., El Segundo, CA. 000512000 009500 English GRAI9113 United States. 1526695 AD-A230 983/9/XAB F04701-88-C-0089

The goal of the Advanced Launch System (ALS) is a more efficient launch capability that provides a highly reliable and operable system at substantially lower cost than current launch systems. Total Quality Management (TQM) principles are being emphasized throughout the ALS program. A continuous improvement philosophy is directed toward satisfying users' and customer's requirements in terms of quality, performance, schedule, and cost. Quality Function Deployment (QFD) is interpreted as the voice of the customer (or user), and it is an important planning tool in translating these requirements throughout the whole process of design, development, manufacture, and operations. This report explores the application of QFD methodology to launch operations, including the modification and addition of events (operations planning) in the engineering development cycle, and presents an informal status of study results to date. QFD is a technique for systematically analyzing the customer's (Space Command) perceptions of what constitutes a highly reliable and operable system and functionally breaking down those attributes to identify the critical characteristics that determine an efficient launch system capability. In applying the principle

of QFD, a series of matrices or charts are developed with emphasis on the one commonly known as the House of Quality (because of its roof-like format), which identifies and translates the most critical information. There are four key types of charts or phases that are developed during the QFD process: product planning, part deployment, process planning, and production planning. QFD is a team process.

64. "Quality Improvement Prototype Workshop. Held in Washington, DC. on August 24, 1990 Quality management (Final)." (24 Aug 90). National Aeronautics and Space Administration, Houston, TX. Lyndon B. Johnson Space Center. 019042004 English GRAI9110 United States. 1520626 PB91-155101/XAB

Hard copy of the slides presented in a one-day workshop on the Lyndon B. Johnson Space Center which received an Executive Office of the President 1990 Quality Improvement Prototype Award. The slides cover a perspective on the Johnson Space Center (JSC), participative strategic planning and implementation, the Team Excellence initiative, contractor partnerships, a JSC survey, management of technology, and lessons learned and future directions. Presentations were made by JSC and NASA staff.

65. Sclesinger, Leonard A. "The Service-Driven Service Company." Harvard Business Review, (September-October 1991).

Most service failures are not failures: they have been designed into the system. At Sears, shifting the sales force from 70% full-time employees to 70% part-timers cut costs-and customer satisfaction. Managers at Merck & Co. found that the total costs of turnover are 1.5 times an employee's annual salary. At taco Bell, both frontline workers and their managers focus on serving customers, not on manufacturing meals. The work force at pioneering service companies is homogeneous on the one dimension that what matters is the ability to provide excellent service. Sooner or later, new technology becomes available to everyone. Customer-oriented employees are a lot harder to copy or buy.

66. "Total Quality Management Implementation at the Defense Technical Information Center." (Sep 89). Defense Technical Information Center, Alexandria, VA. 062640000 394981 English GRAI9003 United States. 1425226 AD-A212 908/8/XAB

This document discusses the implementation of TQM by the Defense Technical Information Center. It includes TQM concepts, methodology, goals and milestones. The DTIC plan embraces the principles and supports the goals of the DLA TQM Master Plan, the DLA-S TQM Plan and productivity improvement programs. Keywords: Continuous process improvement, Collection and dissemination of TQM reports. (KR)

67. Velocci, Tony Childs, John. "French Aerospace: Global Leadership." Aviation Week & Space Technology. v133n9. S5-S24, (Aug 27, 1990). AWS English. 00511912

The aerospace industry in France has an impressive range of products, including civil and military fixed-wing and rotor aircraft, missiles, rockets, jet engines, the Concorde, and, in the near future, the space shuttle Hermes. The French aerospace industry is ranked first worldwide in terms of both its highly trained workforce of 120,000 employees and its annual sales, which were nearly \$14.9 billion in 1989. French firms have had a 40-year policy of systematic modernization in production and research. High product quality has been enhanced by aerospace technologies that French industries have pioneered, including: 1. computer-aided design and production, 2. robotics, and 3. microelectronics. Each year, more than 60% of French military and civil aerospace production is exported to some 120 countries. The symbol of France's success with total quality management in the aerospace industry is the Airbus A320, which has a technical reliability rating of 98%.

68. VLAY, GEORGE J. (Ford Aerospace Corp., Palo Alto, CA); BREKKA, LAWRENCE T. BDM International, Inc., McLean, VA). "Risk management integration with system engineering and program management." AIAA, Space Programs and Technologies Conference, Huntsville, AL, Sept. 25-27, 1990. 12 p. 6, (1990 9009). English United States IAA9101 AIAA/TIS. 1736407 A91-10139

The integration of computerized risk management into a system engineering and program management processes is discussed. Program management using Total Quality Management (TQM) is reviewed, and the ways that such management can be improved by computerized risk management are shown using the BDM Risk Analysis and Management System (BRAMS). The application of BRAMS to assess the risk of achieving launch on schedule of a hypothetical satellite system is examined. The role of TQM in system engineering management is discussed. C.D.

69. Wernick, Steve. "The Path to TQS in a Small Company." Quality. v30n5. 14-17, (May 1991). QUA English. 00550873

While many companies view total quality management (TQM) as a cost improvement program that operates somewhat outside of day-to-day operations, others recognize that TQM is a key to survival in today's highly competitive, customer-oriented business environment. For All-Power Manufacturing Co. (Santa Fe Springs, California), a producer of aircraft bushings, TQM was a self-imposed condition and, in fact, a way to stay in business and prosper. Jim Rankine, All-Power's president, recognized that, if All-Power were to survive and prosper, steps would have to be taken to improve quality and productivity. Understanding who the customer is and what the customer wants is the most important step in installing a TQM program. As a result of its experience with TQM, All-Power has a pragmatic view of TQM and the associated quality management tools. Pointing out that the job of TQM is never done, Rankine insists that everyone's job at All-Power is getting easier as the obstacles to their productivity continue to be removed.

70. Whiting, Rick. "Engineers Say "Prove It!"" Electronic Business. v17n19. 89-92, (Oct 7, 1991). ELB English. 00577248

Since engineers view quality improvement as standards, controls, and a loss of freedom, managers face problems in instilling a quality culture among engineers. A critical step is reassuring engineers that total quality management (TQM) and continuous improvement apply to the engineering process, not the creative aspects of their jobs. One way companies are doing this is to break down quality improvement into more specific, cause-and-effect issues that engineers can understand. Another facet of instilling quality in engineers is to make them more aware of their customers. For example, when a customer has a problem with a Sun Microsystems workstation, the company tries to have the customer work directly with the designing engineer. Giving engineers the right tools and training are critical aspects of quality improvement. It is also important to give engineers the right incentives to think quality is equally crucial.

71. Ziegler, K. R.; Twilley, J. T. "Let's Join the Quality Revolution Research rept." (May 89). Air War Coll., Maxwell AFB, AL. 001030000 014550 English GRAI9010 United States. 1444659 AD-A217 473/8/XAB

A 'Quality Revolution' is occurring in American industry today prompted, primarily, but the necessity to remain competitive in the world marketplace. The Japanese have led the Quality Revolution by applying managerial and quality principles learned from Americans such as Dr. W. Edwards Deming, Joseph M. Juran and others. Although taught by these men, American managers did not generally begin applying their principles until the 1980s. In 1987 the Secretary of Defense published direction to all Services and Defense Agencies to begin applying the principles of Total Quality Management (TQM) in their day-to-day operation. Within the USAF, the Air Force Logistics Command has vigorously applied TQM in all aspects of the command. However, very little application of TQM is evident in the other Air Force Commands. A suggested application of TQM principles is presented, aimed at the flightline maintenance activity throughout the Air Force.

72. CROY, HAROLD; ECKHOLT, JOHN O. (Boeing Aerospace and Electronics, Seattle, WA). "Development operations - A TQM process." IN: Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 13-15, (1990 9000). English United States IAA9111 AIAA/TIS. 1764981 A91-29693

The application of Total Quality Management (TQM) methods in an aerospace development program is briefly characterized. The approach involves the formation of 8-12-member Product Development Teams; the members have different areas of expertise but all receive extensive training in such TQM skills as quality awareness and improvement, process management, statistical process control, Taguchi methods, team leadership, and departmental task analysis. The teams are organized before proposals are submitted, when possible, and are responsible for requirements development, design, fabrication, test, delivery and postdelivery support of the specified product. T.K.

#### BALDRIGE AWARD

73. Reimann, Curt W. "Winning Strategies for Quality Improvement." Business America. v112n6. 8-11, (Mar 25, 1991). CT English. 00543088

Evaluation of the quality programs of applicants for the Malcolm Baldrige National Quality Award has revealed key excellence areas that should be guides for companies as they dedicate themselves to continual improvement. In the area of leadership, the leaders are highly visible and very committed and knowledgeable about quality. The successful companies in the information and analysis area are examples of effective and comprehensive information and analysis systems. Quality planning and business planning should be so closely linked that it is impossible to talk about one without the other. In the human resource area, the successful quality companies have internalized the customer satisfaction

factors. In the quality assurance area, there is a great deal of attention to the quality of design, not only in the focus on response time, but on building in quality. In the quality results area, the companies that did well in the award competition report a very broad base of improvements in products, services, and operations. In the customer satisfaction area, the biggest differentiation is the fact that the high-scoring companies are very proactive in terms of customer expectations.

74. Henry, Craig A. "Does the United States Need Quality Awards?" *Quality Progress*. v23n12. 26-27, (Dec 1990). QPR English. 00528660

Each year, it becomes clearer that the US needs quality awards. Programs like the NASA Excellence Award for Quality and Productivity, the Malcolm Baldrige National Quality Award, and others provide a variety of benefits. These include: 1. increasing the value of goods and services purchased by consumers, 2. providing motivation for continuous improvement, and 3. returning pride to using the label "Made in the USA." These programs, by necessity, have focused attention on continuous improvement and total quality management (TQM). The most quality-conscious organizations recognize that they must devote as much time to the processes that ensure continued improvement as to the products and services themselves. The message is spreading, due in large part to the sharing of hundreds of companies that participate in these prestigious programs, not to win an award, but to be recognized for the level of performance they already have achieved.

75. LESTER, JAMES; NASH, SARAH H. "A survey of Total Quality Management (TQM) resource centers Final Report." (1990 9003). Institute for Defense Analyses, Alexandria, VA. English United States STAR9109 DTIC. 1760656 N91-17831 MDA903-89-C-0003

This document describes a study of various models of Total Quality Management Resource Centers that have been established, and is intended to assist in the development of a design for a Department of Defense (DoD) TQM

Resource Center. The Institute for Defense Analyses (IDA) surveyed eight organizations with TQM Resource Centers for their designs and operations. While a precise set of organizations models did not emerge from the data collected, three critical design issues did: the level of activity, the degree of centralization, and the philosophy of operation. Moreover, the data from the study did not argue for or against the establishment of a DoD TQM Resource Center, nor was IDA asked to make this determination. Although the organizations surveyed have successfully used TQM Resource Centers to improve quality, at least two organizations who were winners of the prestigious Baldrige Award for Quality did not invest in TQM Resource Centers. Further study is required by the DoD to determine whether a DoD TQM Resource Center is needed and who its customers would be. GRA

76. Manning, Mitch. "Managing TQM Information Overload." *Journal for Quality & Participation*. 76-77, (Dec 1990). QCJ English Charts. 00531999

Managers are trying to keep abreast of the rapid growth of information on total quality management (TQM) in an environment of accelerating social, economic, and political change. Experience has proven that the key to managing information is to develop and use a logical and easy-to-remember filing system. There are many information filing systems available for TQM. For example, the Malcolm Baldrige National Quality Award (MBNQA) criteria can be used to form an excellent system. The MBNQA system has 7 categories: 1. leadership, 2. information and analysis, 3. strategic quality planning, 4. human resources utilization, 5. quality assurance of products and services, 6. quality results, and 7. customer satisfaction. The MBNQA filing system for TQM can enhance management performance just by helping managers organize their thoughts as well as information.

77. McGovern, John P. "Quality: The Spirit of Europe." *Journal for Quality & Participation*. v14n4. 18-20, (Jul/Aug 1991). QCJ English Charts. 00569186

"Quality: The Spirit of Europe" is the conference theme of the European Organization for Quality's (EOQ) 36th Annual Conference, which will be held in Brussels, Belgium, in June 1992. It is apparent that Europe has been



recognizing the competitive potential and necessity of quality management and is doing something about it. At the 34th Annual EOQ Conference in 1990, subject areas included: 1. implementing software quality, 2. the quality improvement process, and 3. training, development, and motivation. EOQ priorities for 1992 include the harmonization of all different European Community country standards to the ISO 9000 series of quality standards and the certification of industry and business quality systems to ISO 9000. The requirements being established by the EOQ are creating a sturdy bridge to total quality management (TQM) in Europe. In the US, past winners of the Malcolm Baldrige National Quality Award could form a National Advisory Council to formulate a national agenda for continuous improvement in TQM.

78. Morris, Gregory DL. "Baldrige Award Pays Off." *Chemical Week*. v149n8. 34-36, (Sep 25, 1991). CEM English. 00572277

Although no major US chemical companies have ever won a Malcolm Baldrige National Quality Award, those who have applied and/or instituted principles of the Baldrige process agree that there are many benefits of doing so. The award, which is considered apolitical, is open to all for-profit companies and divided into manufacturing, small business, and service categories. According to Eastman Chemical's Francis Jackson, the time and effort spent on the Baldrige application should focus on identifying a firm's strengths and weaknesses. Dow Chemical, which has a quality program that is similar to the Baldrige program, is focusing its efforts on its customers and the internal program. Companies that have done well in the application process state that the feedback from examiners often is a confirmation of what they already have discovered themselves.

79. Overman, Stephenie. "Teamwork Boosts Quality at Wallace." *HRMagazine*. v36n5. 30-34, (May 1991). PAD English. 00553059

In the mid-1980s, when the oil industry was in one of the worst slumps in recent history, Wallace Co. Inc. avoided short-term panaceas and concentrated on long-term quality improvement with an emphasis on employee training and customer service. Sales per employee have climbed

steadily for 6 years, while the number of employees has remained stable. Wallace distributes pipe and other products to the refining, chemical, and petrochemical industries. The firm won the Malcolm Baldrige National Quality Award in 1990. The changes that led to the Baldrige Award had their roots in the quality circles that Wallace started in 1985. Those quality circles slowly evolved into the fully empowered Quality Improvement Process team network at Wallace today. Wallace says that more than 80% of the day-to-day decisions there are made through the team process. The company has invested about \$2 million in formal training between 1987 and the end of 1990.

80. Cayer, Shirley. "Quality 1991 - Buying Quality: Why Reinvent the Wheel?" *Purchasing*. v110n1. 89, 91, (Jan 17, 1991). PRG English. 00535300

Motorola Inc., a 1988 winner of the Malcolm Baldrige National Quality Award, demands that its suppliers put themselves in a position to apply for the award. The tough stand comes after a decade of concentrating its own energies on quality procurement and proving that it works. Annual sales for Motorola in 1989 exceeded \$9.6 billion, with roughly 40% earned outside the US. According to Motorola's Ken Stork, the value of the Baldrige award is derived from involvement in the examination, which is a quantifiable, impartial, and rigorous quality assessment process. The award covers the spectrum of requirements necessary to achieve total quality management: prevention, appropriate and effective policy deployment, and measured results. Former chairman Robert Galvin estimates that US gross national product would increase a minimum of 0.5% if the Baldrige system were adopted as a national standard.

81. Kathawala, Yunus Elmuti, Dean/Toepp, Laura. "An Overview of the Baldrige Award: America's Tool for Global Competitiveness." *Industrial Management*. v33n2. 27-29, (Mar/Apr 1991). IM English Charts|References. 00545751

US companies have been criticized for shortsightedness and a lack of quality in their products and services, and foreign competitors have capitalized on the US' quality weaknesses. To bring the issue of quality to the forefront, the federal government established the Malcolm Baldrige National Quality Improvement Act of 1987. The Malcolm Baldrige National Quality Award recognizes companies that have shown exemplary achievement in quality improvement. The purpose of the award is to promote quality and offer a guideline for outstanding quality systems that will improve both productivity and efficiency - systems that will give companies the ability to compete both domestically and globally. The award criteria are: 1. leadership, 2. planning, 3. human resource utilization, 4. results from quality assurance of products and services, and 5. customer satisfaction.

82. Kiely, Thomas. "'Q' Tips." *CIO*. v4n11. 26-32, (Aug 1991). CIO English. 00569645

According to Curt Reimann, director of the Malcolm Baldrige National Quality Award program and director for quality programs at the National Institute of Standards and Technology, the total quality management (TQM) era could prove to be both the best and the worst of times for chief information officers (CIO). CIOs will find the corporate pledge to quality the "worst of times," because making good on that promise will test the information systems (IS) department's mettle. As CIOs study the Baldrige Award criteria, they will realize that TQM often is their responsibility. Since quality programs are dependent on good information systems, CIOs have the opportunity to play an integral and highly visible role in shaping the quality of the corporation. The Baldrige Award is concerned specifically with a corporation's mechanisms for delivering quality value to the customer. In regard to quality results, Baldrige examiners observe how companies internally calibrate relationships with the customer.

## BASICS

83. Houghton, James R. "Quality: Beyond the Corporate Walls." Executive Speeches. v5n9. 19-24, (Apr 1991). EXS English. 00546910

Despite economic, political, and social problems, the US is on its way back, with the people of industry as the prime movers. US industry is closing in on the competition, with the Japanese prodding the US into action. A quality explosion is occurring in the US with something more important than industrial improvement happening. Quality is an ethical behavioral system as well as a business process. US business quality programs are beginning to have a significant benefit "spill over" effect on other institutions in society. Corning Inc. uses a Total Quality Management System that includes the following strategies: 1. Provide unquestioned leadership. 2. Focus on customer results. 3. Train and retrain all employees. 4. Achieve and recognize wide employee participation. 5. Communicate about quality internally and externally. 6. Provide the quality process and the quality tools.

## CUSTOMER SERVICE

84. Anonymous. "Giving TQM an Environmental Spin at ICI Americas." Environmental Manager. v2n12. 5-6, 16, (Jul 1991). ENM English. 00566228

About 4 years ago, ICI Americas Inc. (Wilmington, Delaware) started to integrate total quality management (TQM) principles with its manufacturing units - those businesses that manufacture agricultural chemicals, specialty chemicals, and polyester films. About 18 months ago, it became obvious that the corporate staff, such as Safety, Health, and Environmental Affairs (SHEA), were critical players in the quality effort. They were "suppliers" to the businesses and had to be included in the effort. The objective in involving staff with TQM was to create service excellence. ICI, the \$4-billion to \$5-billion US subsidiary of UK-based Imperial Chemicals Industries PLC, is working on service excellence on 2 levels: 1. the infrastructure, which will sustain the

TQM effort over time, and 2. every individual in the organization, who receives TQM training.

85. Krone, Bob. "Total Quality Management: An American Odyssey." *Bureaucrat*. v19n3. 35-38, (Fall 1990). BUR English References. 00529970

In a panel discussion, 6 Americans discussed total quality management (TQM). Customers' needs and expectations drive TQM systems. McDonnell Douglas Astronautics Co.'s Gil Mosard said that, for his company, TQM has 4 major elements: customer satisfaction, supportive cultural environment, people teams and partnerships, and disciplined systems and processes. According to the University of Southern California's Bob Krone, if TQM can be successfully implemented in US industry, government, defense, and education, there will be a profound positive improvement in US total national security and stability. The largest barrier to implementation of TQM for Americans may be patience. Successful quality programs take time and tenacity. Mosard said that the only way TQM will be effective in the US is if there is a partnership between the academic world, the business world, and the government world to teach and implement it.

86. Lee, Chris. "The Customer Within." *Training*. v28n7. 21-26, (Jul 1991). TBI English. 00560642

Total quality management focuses on the internal customer as well as the external. The needs of employees must be met so that they, in turn, can provide excellent service for the external customer. At Westinghouse Electric Corp., for example, the internal customer-supplier approach has proven to be a powerful catalyst for corporate quality improvement efforts that began a decade ago, according to Carl Arendt of the Westinghouse Productivity and Quality Center. He says that the most profound effect is an attitude change. The first steps in the quality process are to identify the customers and to meet with them. A support function, such as a management information systems department, might want to establish service-level agreements with internal customers. Whether agreements between internal customers and

suppliers are formal or informal, advocates of the approach agree that the process for reaching them must be flexible.

87. Lorinc, John. "Dr. Deming's Traveling Quality Show." *Canadian Business*. v63n9. 38-42, (Sep 1990). CB English. 00516291

In 1950, W. Edwards Deming taught the Union of Japanese Scientists and Engineers the theory of total quality management. According to Deming's teachings, quality is the predictable absence of error. It is a customer-oriented result achieved only when management decides to work out system-bound flaws in production rather than blame employees for poor workmanship. It is a never-ending process of continuous improvement that will lower costs and improve productivity and, finally, profitability. John Perry, vice-president of training and quality development for Canada's Reimer Express Enterprises Ltd., discovered that employees spend 40% of their time fixing mistakes. When he returned from one of Deming's 4-day seminars, he had no trouble selling the ideas to top management. Reimer established a quality steering committee and devised a 7-stage plan that called for extensive training programs, a means of measuring mistakes precisely, and channels of communication to let employees know what is going on. Employees are encouraged to make suggestions without fear of reprisal. Since implementing Deming's teachings, Reimer's proportion of revenue used to cover damaged freight has dropped to half the industry average.

88. Macdonald, John. "The Japan of Europe: Which Country Will Earn the Title?" *Management Decision*. v25n1. 38-42, (1987). MGD English References. 00370839

The success of Japan's economic growth can largely be attributed to the emphasis they have put on quality since World War II. In 1946, the Japanese launched a long-term national plan of dedication to the production of quality products -- with the projected market being the world. They began by developing a hybrid Japanese/American total quality management system which was American in philosophy and Japanese in practice. They focused on a performance standard of zero defects rather than the western attitude of "acceptable quality levels." Although

Japan is ahead of Europe in its recognition that quality must take precedence over cost and scheduling, it is not yet too late for these manufacturing nations to work for a share of the world market. The country that will become the "Japan of Europe" will have to focus on quality in production, market research, design, marketing, industrial relations, and training. Also, the 3 necessary elements of determination, education, and implementation must be present at all personnel levels.

89. Maddux, Gary A. | Amos, Richard W. | Wyskida, Alan R. "Organizations Can Apply Quality Function Deployment as Strategic Planning Tool." *Industrial Engineering*. v23n9. 33-37, (Sep 1991). INE English Charts. 00572664

Total quality management (TQM) has introduced an array of simple and complex tools into the workforce. One tool receiving notice as a result of the shift toward a TQM philosophy is quality function deployment (QFD). QFD's fundamental objectives are to identify the customer, what the customer wants, and how to fulfill the customer's wants. The Production Engineering Division (PED) of the US Army Missile Command used QFD in formulating a strategy to implement and manage a program called Production Engineering (PE) Tools. After an initial brainstorming session in which the customers of the product were identified, the QFD team defined the quality characteristics, or technical requirements, that would be necessary to meet the customers' needs successfully. Based on the results of the QFD exercise, PED management can now develop a more coherent strategy for implementing the PE Tools program.

90. Maher, Dan. "Service Guarantees: Double-Barreled Standards." *Training*. v28n6. 27-30, (Jun 1991). TBI English. 00555279

In an age in which quality is defined as meeting or exceeding customer expectations, exceptional service is best accomplished by training the customer. There is no better way to train customers than with a service guarantee, a simple vow to deliver error-free service. Service guarantees set criteria for customers and create a standard to which workers can be trained, thereby ensuring that the company delivers

premium-quality service. Hollow promises or guarantees for less than the customer already expects do not work. A guarantee must be a value-added part of a company's service. It must be unrestricted, specific and clear, meaningful, hassle-free, and quick to pay out. In general, companies that guarantee their services have not been hit excessively by payouts, and they have reaped significant benefits in increased efficiency, customer retention, and employee morale. Guarantees have helped companies find the roots of service delivery problems, leading to greater success - and fewer payouts - as a program continues.

91. Majumdar, Amit Smolenyak, Megan|Yencho, Nancy. "Planting the Seeds of TQM." National Productivity Review. v10n4. 491-497, (Autumn 1991). NLP English. 00574267

Great challenges face a company locked in a regulated climate. Even under such trying circumstances, many corporate entities have found the key to competitive success in the implementation of a total quality management (TQM) program and philosophy. The Steel Authority of India Ltd. (SAIL) is one such company that is currently undergoing a total quality transformation. Poor quality had cost the company in terms of greater inventory, scrap costs, and by-product ratings, and therefore values had been degraded. SAIL's new companywide TQM program focuses on quality of products and services, human resources, continuous innovation, customer service and satisfaction, and capitalization of corporate resources.

92. Manning, Mitch. "Managing TQM Information Overload." Journal for Quality & Participation. 76-77, (Dec 1990). QCJ English Charts. 00531999

Managers are trying to keep abreast of the rapid growth of information on total quality management (TQM) in an environment of accelerating social, economic, and political change. Experience has proven that the key to managing information is to develop and use a logical and easy-to-remember filing system. There are many information filing systems available for TQM. For example, the Malcolm Baldrige National Quality Award (MBNQA) criteria can be used to form an excellent system. The MBNQA system has 7 categories: 1. leadership, 2. information and analysis, 3.



strategic quality planning, 4. human resources utilization, 5. quality assurance of products and services, 6. quality results, and 7. customer satisfaction. The MBNQA filing system for TQM can enhance management performance just by helping managers organize their thoughts as well as information.

93. Muller, Wolfgang. "Gaining Competitive Advantage Through Customer Satisfaction." *European Management Journal*. v9n2. 201-211, (Jun 1991). EMJ English Charts/Graphs/References. 00562545

In general, successful European companies consider customer satisfaction as the most important profit stimulant, as a powerful competitive defense, and as a tool of differentiation for dealers. A framework for the successful management of a total customer ownership cycle includes the following elements: 1. measuring customer satisfaction and defining targets, 2. matching key value propositions with customer expectations, 3. introducing service innovations, 4. establishing proactive distribution management, and 5. focusing the entire business system on satisfying customers. Customer satisfaction management involves integrating the various elements of the business into a customer-oriented network. One way of accomplishing such integration is total quality management, which aims to satisfy all customers, both internal and external. Another approach is to implement cross-functional task forces.

94. Nash, Tom. "Quality Management -- Getting It Right." *Chief Executive*. 8-10, (Jan 1987). CEX English. 00352689

Since 1983, UK companies typically have spent between 25% and 40% of their income on quality, trying to ensure defect-free production. Today's Total Quality Manager (TQM) program differs from other traditional approaches to quality improvement by: 1. demanding management commitment, and 2. continually meeting customer requirements by harnessing all organizational efforts. Employees are motivated to eliminate all defects rather than most defects, since the higher costs will be repaid several times over by greater customer satisfaction. Excellent working relationships are vital to TQM programs; thus, many packages include in-

house training programs for executives and managers. After diagnosis of a company's strengths and weaknesses, actions are suggested, including the adoption of numerous primary quality standards. As managers become committed to the standards, they will become the in-house trainers of the various shop-floor workers.

95. Odiorne, George S. "The New Breed of Supervisor: Leaders in Self-Managed Work Teams." *Supervision*. v52n8. 14-17, (Aug 1991). SUP English. 00563253

The work world of the 1990s is leaning toward participative management, work teams, and self-managed work groups. Reasons why firms are making this move include: 1. The old division of labor idea has proved to be a source of apathy, anger, and alienation to the people at the bottom. 2. The US economy has shifted from being production-centered to service-centered. 3. Marketing has changed from the individual salesperson selling to the individual purchasing agent, to team buying and selling. Some pitfalls that can arise in changeover to self-management teams are: 1. Supervisors and managers see participative management as diluting their power and authority. 2. Moving too fast with changes leads to hesitancy and a lower productivity and quality. 3. Teams of 15 or so have a tendency to split into smaller interest groups. A system of self-directed work groups leaves the first-line supervisor with a new set of roles and functions, such as: 1. serving as a planner, organizer, and facilitator for a larger population, 2. monitoring and advising upon the legal requirements of employment law issues, and 3. managing information flow.

96. Overman, Stephenie. "Teamwork Boosts Quality at Wallace." *HRMagazine*. v36n5. 30-34, (May 1991). PAD English. 00553059

In the mid-1980s, when the oil industry was in one of the worst slumps in recent history, Wallace Co. Inc. avoided short-term panaceas and concentrated on long-term quality improvement with an emphasis on employee training and customer service. Sales per employee have climbed steadily for 6 years, while the number of employees has remained stable. Wallace distributes pipe and other products to the refining,

chemical, and petrochemical industries. The firm won the Malcolm Baldrige National Quality Award in 1990. The changes that led to the Baldrige Award had their roots in the quality circles that Wallace started in 1985. Those quality circles slowly evolved into the fully empowered Quality Improvement Process team network at Wallace today. Wallace says that more than 80% of the day-to-day decisions there are made through the team process. The company has invested about \$2 million in formal training between 1987 and the end of 1990.

97. Pastor, Joan Gechtman, Risa. "Nurturing the Teamwork Culture: Internal Customer Service." *Supervisory Management*. v36n4. 10, (Apr 1991). SPM English. 00543882

Company employees who internalize company goals and who support one another strongly contribute to the success of an organization. To create a healthy team in any organization, it is important to cultivate a team that thinks of fellow workers as customers. Employees who are willing to give more and who do what is best for the team find out that what they do for fellow workers comes back to them. This practice is called internal customer service. Departments must work at satisfying the requirements of other departments before the ultimate goal of satisfying the external customer can occur. The responsibility for keeping in touch with one's internal customers lies with the individuals of a department, and a supervisor can foster this sharing of time and information. When a department establishes relations with another, the supervisor is responsible for ensuring that everyone keeps the commitments made to internal customers.

98. Schlossberg, Howard. "Customer Satisfaction: Not a Fad, but a Way of Life." *Marketing News*. v25n12. 18-19, (Jun 10, 1991). MNW English. 00554087

According to experts speaking at the American Marketing Association/ASQC Customer Satisfaction and Quality Measurement Conference, customer satisfaction is becoming a way of life in corporate America. Christopher Hart of the TQM Group predicted that customer satisfaction will become embedded in corporate cultures. Using customer satisfaction as a competitive weapon has proven worthwhile for Xerox Corp. The firm was rated number one in its industry in product

reliability and service, according to Dataquest. Another company that has benefited from its commitment to customer satisfaction is MBNA America Bank NA. Steve Boyden, senior vice-president of the credit card lender, noted that the difference between the company's customer retention costs and the industry's saved the company \$20 million in 1991. One key to these companies' commitments is recognizing that achieving customer satisfaction is a never-ending quest.

99. Sclesinger, Leonard A. "The Service-Driven Service Company." Harvard Business Review, (September-October 1991).

Most service failures are not failures: they have been designed into the system. At Sears, shifting the sales force from 70% full-time employees to 70% part-timers cut costs-and customer satisfaction. Managers at Merck & Co. found that the total costs of turnover are 1.5 times an employee's annual salary. At taco Bell, both frontline workers and their managers focus on serving customers, not on manufacturing meals. The work force at pioneering service companies is homogeneous on the one dimension that what matters is the ability to provide excellent service. Sooner or later, new technology becomes available to everyone. Customer-oriented employees are a lot harder to copy or buy.

100. "Total Quality Management, January 1990-July 1991 (Citations from the NTIS Database) Rept. for Jan 90-Jul 91." (Jul 91). National Technical Information Service, Springfield, VA. 055665000 English GRAI9117 United States. 1541443 PB91-800227/XAB

The bibliography contains citations concerning planning, development, and management of quality programs. The improvement of quality in products and the improvement of quality in service have become highly visible national priorities. Topics include strategic planning, customer service, employee participation, quality assurance, program management and case studies in Federal Government agencies. (Contains 152 citations with title list and subject index.)

## DEMING

101. Lorinc, John. "Dr. Deming's Traveling Quality Show." *Canadian Business*. v63n9. 38-42, (Sep 1990). CB English. 00516291

In 1950, W. Edwards Deming taught the Union of Japanese Scientists and Engineers the theory of total quality management. According to Deming's teachings, quality is the predictable absence of error. It is a customer-oriented result achieved only when management decides to work out system-bound flaws in production rather than blame employees for poor workmanship. It is a never-ending process of continuous improvement that will lower costs and improve productivity and, finally, profitability. John Perry, vice-president of training and quality development for Canada's Reimer Express Enterprises Ltd., discovered that employees spend 40% of their time fixing mistakes. When he returned from one of Deming's 4-day seminars, he had no trouble selling the ideas to top management. Reimer established a quality steering committee and devised a 7-stage plan that called for extensive training programs, a means of measuring mistakes precisely, and channels of communication to let employees know what is going on. Employees are encouraged to make suggestions without fear of reprisal. Since implementing Deming's teachings, Reimer's proportion of revenue used to cover damaged freight has dropped to half the industry average.

## EMPOWERMENT

102. Hammons, Charles Maddux, Gary A. "Total Quality Management in the Public Sector." *Management Decision*. v28n4. 15-19, (1990). MGD English. 00509023

The US is in serious trouble with respect to national productivity. To resolve this dilemma, the US must rely not only on the private sector, but on the public sector as well. The implementation of a new managerial philosophy, total quality management, requires fundamental changes in many managerial attitudes, along with the elimination of many

prejudices and preconceived ideas pertaining to the work environment. Quality must be incorporated into the design of products. There must be cooperation within and among departments, as well as cooperation with external entities. Employees must be treated as the most important resource. The public sector manager should take action to implement positive change in the workplace. There are no quick solutions to problems; training, education, trust, and cooperation are long-term activities. While their benefits are substantial and lasting, they are not instantaneous.

103. McLaughlin, Curtis P./Kaluzny, Arnold D. "Total Quality Management in Health: Making It Work." *Health Care Management Review*. v15n3. 7-14, (Summer 1990). HCM English Charts/References. 00540761

Total quality management (TQM) is being implemented by a growing number of hospitals and health maintenance organizations. TQM calls for continuous and relentless improvement in the total process that provides care. The nature of the organizational change required to implement TQM can be outlined by contrasting TQM with professional bureaucracy and evaluating points of conflict. Points of conflict include: 1. individual versus collective responsibility, 2. clinical versus managerial leadership, 3. autonomy versus accountability, 4. administrative authority versus participation, and 5. rigid versus flexible planning. The implementation of TQM requires that administrative and medical managers mediate areas of conflict. Action guidelines for the implementation of TQM include: 1. Redefine the role of the professional. 2. Redefine the corporate culture. 3. Redefine the role of management. 4. Empower the staff to analyze and solve problems. 5. Change organizational objectives. 6. Make the TQM program a model for continuous improvement.

## GLOBAL STRATEGIES

104. Lavy, Nachman. "The View from Israel . . . Quality for Competitiveness." *Journal for Quality & Participation*. v14n4. 86-87, (Jul/Aug 1991). QJ English. 00569198

Several shared characteristics between Israeli managers and employees, such as democracy and equality, sharing and collaboration, and personal opinion, have made the Israeli culture and tradition suitable for successful implementation of participation in producing quality. In the early 1980s at Periclas - Dead Sea, a chemical manufacturing company that exports 100% of its output, the first quality circles in Israel began to function. The Institute of Productivity helped Periclas' management to implement quality circles. By the late 1980s, about 50 organizations in Israel had quality circles; a portion of these began implementing total quality management (TQM). The foundation of the Israel Quality Circles Society and the success of previous implementations proved to be the catalysts for this change in Israel. Companies that demonstrate the characteristic of those implementations are Electro-Optical Industries, Motorola Israel, and Teva Pharmaceutical Industries.

105. LaPlante, Alice. "Global Information Officers Entering IS Picture." *Computerworld*. v25n33. 70, (Aug 19, 1991). COW English. 00567247

As more US corporations grow international in scope, top information systems (IS) executives are finding that they must take a more team-oriented, cooperative approach to solving complex technological and organizational issues. Companies unable to optimize their IS resources on a global scale will find themselves at a significant competitive disadvantage. Problems that skilled global information officers are expected to address include: 1. the duplication of high-cost systems development efforts at multiple sites, 2. the implementation of systems incapable of connecting to each other or to the main data center

without hassle and expense, and 3. the inability to serve the strategic business needs of a worldwide organization in a timely manner. Global information officers must balance the need for some sort of global IS game plan with a decentralized and flexible management style.

106. Schaaf, Dick. "Beating the Drum for Quality." Training. Supplement. 5-12, (Mar 1991). TBI English. 00541349

In a roundtable discussion, a group of businesspeople addressed concepts of quality as they apply to US business. According to Louis E. Schultz, chief executive officer of Process Management International, quality means meeting and exceeding the customer's needs and expectations - and then continuing to improve. Tom Varian, vice-president of communications of Organizational Dynamics Inc., stated that it is important to take into account the whole customer-supplier chain that functions within an organization, defining quality at each link in that chain so that it functions as near to perfectly as possible in meeting the needs of the external customer. The consensus of the panelists is that quality is here to stay because it has become literally a life-and-death issue for the modern corporation. Joseph M. Juran, founder and chairman emeritus of the Juran Institute Inc., stressed that, in the worldwide market, a business cannot be successful unless it gives its customers what they want.

#### GOVERNMENT

107. Hayes, Glenn E. "Three Views of TQM." Quality. v29n4. 19-24, (Apr 1990). QUA English. 00494628

Three companies were surveyed with regard to their management practices, how they put total quality management (TQM) to work, and what they expect to achieve in the coming years through the use of TQM. Ed Dunford of TRW Space & Defense Sector stated that TQM makes sense from a business standpoint - it improves quality, reduces costs, and enhances productivity. TQM cuts through cumbersome problems so that good products can be manufactured, with a potential of saving 30% and creating a



pleasant workplace. A. M. Lovelace of General Dynamics believes that global competition and the increased demand for quality make TQM essential. According to Mike Wintermute of M/A-COM Government Systems Division, being a government supplier is an incentive to adopting TQM because the government requires that its suppliers use the concept. Management must let employees know it is serious about TQM.

### INTERNAL CUSTOMER

108. Rose, Frank. "Now Quality Means Service Too." *Fortune*. v123n8. 97-111, (Apr 22, 1991). FOR English Graphs. 00544404

After being viewed as a manufacturing problem for most of the past decade, quality has become a service issue. The idea is total quality management (TQM) in the offering itself and in all the services that come with it. Poor service has become an issue for managers for the same reason shoddy goods did: competition. If product quality is essentially the same across the industry, service becomes the distinguishing factor. Because service quality can be gauged only by customer satisfaction, TQM has redefined quality as "what feels right to the customer." The TQM effort depends on a willingness to see the world from the customer's point of view and an eagerness to move swiftly. Within any company, TQM theory holds, is a whole chain of internal customers, culminating with the person at the cash register. The trick is to get everyone working together while keeping this ultimate customer in focus.

### JAPANESE MANAGEMENT STYLE

109. Lorinc, John. "Dr. Deming's Traveling Quality Show." *Canadian Business*. v63n9. 38-42, (Sep 1990). CB English. 00516291

In 1950, W. Edwards Deming taught the Union of Japanese Scientists and Engineers the theory of total quality management. According to Deming's teachings, quality is the predictable absence of error. It is a

customer-oriented result achieved only when management decides to work out system-bound flaws in production rather than blame employees for poor workmanship. It is a never-ending process of continuous improvement that will lower costs and improve productivity and, finally, profitability. John Perry, vice-president of training and quality development for Canada's Reimer Express Enterprises Ltd., discovered that employees spend 40% of their time fixing mistakes. When he returned from one of Deming's 4-day seminars, he had no trouble selling the ideas to top management. Reimer established a quality steering committee and devised a 7-stage plan that called for extensive training programs, a means of measuring mistakes precisely, and channels of communication to let employees know what is going on. Employees are encouraged to make suggestions without fear of reprisal. Since implementing Deming's teachings, Reimer's proportion of revenue used to cover damaged freight has dropped to half the industry average.

110. Macdonald, John. "The Japan of Europe: Which Country Will Earn the Title?" *Management Decision*. v25n1. 38-42, (1987). MGD English References. 00370839

The success of Japan's economic growth can largely be attributed to the emphasis they have put on quality since World War II. In 1946, the Japanese launched a long-term national plan of dedication to the production of quality products -- with the projected market being the world. They began by developing a hybrid Japanese/American total quality management system which was American in philosophy and Japanese in practice. They focused on a performance standard of zero defects rather than the western attitude of "acceptable quality levels." Although Japan is ahead of Europe in its recognition that quality must take precedence over cost and scheduling, it is not yet too late for these manufacturing nations to work for a share of the world market. The country that will become the "Japan of Europe" will have to focus on quality in production, market research, design, marketing, industrial relations, and training. Also, the 3 necessary elements of

determination, education, and implementation must be present at all personnel levels.

111. Eisman, Regina. "When Cultures Clash." Incentive. v165n5 (Section 1). 65-70, (May 1991). IMK English. 00550655

Because cultural differences affect attitudes about money, work hours, performance reviews, on-the-job communication, and incentives, Japanese and American firms display vastly different management styles. One of the most striking corporate differences between the 2 cultures is the way they reward and recognize their employees. Generally, firms from Japan give salary raises and bonuses based on factors other than performance. Gender, seniority, and marital status tend to matter most, according to S. Brian Burkhalter of the University of South Florida. Another reason for across-the-board salaries is that the Japanese tend to stress company- or group-wide goals rather than individual goals, whereas Americans are far more interested in self-gratification, according to consultants. In many cases, the Japanese are offended by incentives because they feel they already have a solid work ethic. Instead of tangible incentives, Japanese firms tend to confer recognition. Some Japanese managements are adapting their styles for the US market in the areas of incentives and performance-related pay.

112. Mooney, Sean F. "Gearing Up for the 21st Century." Insurance Review. v52n1. 26-28, (Jan 1991). III English. 00531587

On the international front, US insurance companies trying to redefine their role in the early 1990s will embrace the "bigger is better" philosophy, leading to a number of acquisitions and mergers. Such activity will diminish by the mid-1990s, and the global network approach of cross-country links and relationships will be the dominant form of providing global coverage. The Japanese will have a significant presence in US insurance markets and may develop a total care service. A number of forces are pushing consolidation in personal lines: 1. There is a need

for more personalized service, which will be met by more technology. 2. Proposed changes in the McCarran-Ferguson Act and the move by Insurance Services Office away from final advisory rates are forces that favor larger companies. 3. Regulatory pressures on prices are pushing many less committed players out of the business. In the 1990s, many US companies will adopt the total quality management (TQM) approach. Three basic principles of TQM are: 1. a concentration on service to the customer as the top priority, 2. management of the total process, and 3. management for continuous improvement of the process.

113. Stocker, Gregg D. "Reducing Variability - Key to Continuous Quality Improvement." *Manufacturing Systems*. v8n3. 32-36, (Mar 1990). MFS English Graphs|References. 00490463

Quality has become a strategic focus for companies expecting to do business in the 1990s and beyond. In 1988, the US Department of Defense released the Total Quality Management (TQM) Master Plan to achieve continuous improvement of its products and services. Statistically, every process experiences variation that can lead to quality problems. Statistical process control (SPC) is used to measure variability of a process and to determine its capability to produce a particular part. The Taguchi Method, developed by Genichi Taguchi, combines engineering and statistics to reduce natural variation. The premise is that cost can be reduced by improving quality and that quality automatically improves by reducing variation. In accordance with TQM, Taguchi has improved product-process design by concentrating on the process itself. Taguchi Methods are slowly gaining popularity in the US.

114. Tobin, Lawrence M. "The New Quality Landscape: Total Quality Management." *Journal of Systems Management*. v41n11. 10-14, (Nov 1990). JSM English. 00525453

The source of Japan's success in product quality, technology, and ingenuity is total quality management (TQM), the totally integrated effort for gaining competitive advantage by continuously improving every component of organizational culture. TQM differs from traditional management in that: 1. traditional management's focus is on its own requirements,

while TQM focuses on the customer, 2. TQM takes the view that profits follow quality, while traditional management views profits as its first responsibility, 3. TQM considers quality as multidimensional and customer-oriented, while traditional management defines quality in terms of a single dimension, 4. TQM encourages every employee to find better ways to work, while, with traditional management, workers work and managers manage, and 5. TQM takes a long-term, process-oriented approach to improving process quality, while traditional management strives for short-term, results-oriented gains. To implement TQM, information systems (IS) professionals must develop a new definition of quality, expand methodologies, develop new systems, and expand into the business environment.

### JIT

115. Chandra, Dinesh Somaiya, D. K. "Just-In-Time in India." *Production & Inventory Management*. v11n7. 30-32, (Jul 1991). PIA English. 00568032

India is a land of utmost contrasts, where the very ancient and ultramodern coexist. In the past, Indian industries had generally been protected from international competition, which led to low productivity and quality levels. In the past decade, the government's process of decontrol and liberalization has resulted in a competitive environment. Japan brought just in time (JIT) to India in terms of technology, while US collaborations brought the concepts of total quality management (TQM). Under TQM, many Indian firms are now working toward manufacturing excellence. The Indianization of JIT-TQC is now taking place in 50 to 100 small to large companies. Although many top managers are not yet clear about the philosophy and modes of operation of JIT, they are impressed with the results. Tvs-Suzuki has introduced a suggestion scheme, statistical process control, and cross functional teams. Maruti Udyog Ltd. has implemented an aggressive vendor development program. Indians are learning that JIT is more than just the technology; it is the management philosophy of respecting the individual and developing trusting relationships between workers and managers for continuous improvement.

116. Resnick, Rosalind. "A Top Gun Comes to the Rescue of CPI." *Electronic Business*. v17n17. 80-84, (Sep 9, 1991). ELB English Charts. 00571118

When John Lemasters became chairman and chief executive officer of Computer Products Inc. (CPI), the company was about to fail because of numerous problems. All he had to work with was CPI's core businesses of power supplies and related subsystems for computer original equipment manufacturers and chemical process-control equipment. Much of CPI's growth in the early 1980s was based on overly ambitious acquisitions. Lemasters downsized the company by trimming excess manufacturing capacity, cutting personnel by 20%, and discarding businesses that were not likely to show a profit in 3 years. He also began a major campaign to improve product quality that involved regaining customer support and instituting a total quality management program and just-in-time manufacturing. While CPI is back on solid ground, challenges remain. Higher profits must now come from higher sales, not cost cutting.

117. Rusk, P. S. "The Role of the Bill of Material in Manufacturing Systems." *Engineering Costs & Production Economics*. v19n1-3. 205-211, (May 1990). EPE English Charts|Graphs. 00508595

In order to meet domestic and foreign competition, manufacturers must become more flexible and responsive in meeting customer needs. This requires that reductions be made in stock levels, customer lead times, product introduction, and engineering change timescales. To achieve these goals, effective communication and control of information both inside and outside the organization are essential. ICL, the information subsidiary of STC PLC, has developed a total quality management (TQM) and just-in-time (JIT) environment that has enabled it to become a world-class manufacturer. A key element for ICL in achieving this environment is the bill of material (BOM). Recognizing that how the BOM is managed, controlled, and structured can directly influence company success, ICL developed an integrated system to tackle this problem. The company's extensive change control system is organized to coordinate the marketing, finance, engineering, manufacturing, planning, and control functions of the business.

118. Sheridan, John H. "JIT Spells Good Chemistry at Exxon." Industry Week. v240n13. 26, 28, (Jul 1, 1991). IW English. 00557861

Butyl Polymers Americas (BPA), a unit of Exxon Chemical Co., was one of 4 winners of the 1991 Shingo Prize for excellence in manufacturing. Among BPA's achievements is that it has learned how to make just-in-time (JIT) concepts meaningful in a chemical-industry setting. Raymond C. Floyd, BPA's business-unit manager, says that he and his unit took all of the JIT technologies, reduced them to a theory, and reconstructed the theory for application within chemicals. In essence, the objective of JIT manufacturing is to transform discrete manufacturing into a flow process. Among the payoffs for BPA has been a 65% reduction in cycle time at its Baytown, Texas, plant. Using quick-changeover methods, BPA plants now can produce specific products more frequently and in smaller batches. Among the Exxon unit's other accomplishments are a 50% reduction in total inventory and an 18% decrease in energy consumption.

119. Sutton, John R. "New Cost Management Tools Offer Competitive Advantage." Industrial Engineering. v23n9. 20-23, (Sep 1991). INE English Charts. 00572661

Traditional cost accounting systems now in use were developed more than 50 years ago to control labor, then a scarce resource. Fundamental changes are occurring in manufacturing with the advent of just in time, total quality management, supplier programs, greater employee involvement, and decentralized organizations. These changes are altering the behavior of costs. To motivate desirable behaviors and make change happen, managers need: 1. operating information linked to strategic goals, 2. a forward look, 3. a horizontal (pipeline) view of the organization, 4. accurate product cost information, 5. simple information for easy analysis and fast action, and 6. lower cost of obtaining information. Moving to a new paradigm of cost management is a significant undertaking that requires a well-planned approach.

NASA

120. ACKERMAN, ARTHUR W., JR. (Loral Space Systems, Palo Alto, CA). "Total quality excellence - The multidimensional approach." IN: Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 3-10, (1990 9000). English United States IAA9111 AIAA/TIS. 1764979 A91-29691

The application of Total Quality Management-type strategies requiring 'profound' system knowledge to the design, development, manufacturing, and testing processes for a communication satellite is discussed on the basis of the author's personal experience and illustrated with extensive graphs and diagrams. Consideration is given to the design definition phase, the problem of timely acquisition of high-quality components, computerized techniques for the identification of rework and nonconformance rates in manufacturing and test operations, the need for very rigorous testing of high-power RF and dc components such as TWTAs, and the importance of detailed design reviews in preventing design-related component failures. T.K.

121. Adams, Johanna Library Association Record Geography, Los Angeles, CA). "New approaches to launch vehicle system development." AIAA, Aerospace Engineering Conference and Show, Los Angeles, CA, Feb. 13-15, 1990. 8 p. 11, (1990). English United States IAA9009 AIAA/TIS. 1694866 A90-25171

DOD and NASA seek launch capabilities that are more dependable and flexible in operation and which increase vehicle cargo lift capabilities. The Advanced Launch System (ALS) has been developing new approaches to system design and operation which promise increased operational capabilities at reduced costs. The joint ALS program is addressing these goals of reduced launch costs, efficient and flexible launch operations, and enhanced industrial productivity. The new approaches to space launch capability, development, and operation established by the ALS program are summarized. Modular, simplified designs reduce complexity, labor, and costs. Total quality management principles are being applied to build in quality from



inception, match system capabilities to user needs, and achieve new economies. R.E.P.

122. "Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings." Seminar sponsored by Institute of Environmental Sciences and Aerospace Corp. Mount Prospect, IL, Institute of Environmental Sciences, 1990, 239 p. For individual items see A91-29690 to A91-29721, (1990 9000). English United States IAA9111 AIAA/TIS. 1764977 A91-29689

Recent developments in the technology and management of testing in the U.S. aerospace industry are discussed in reviews and reports. Sections are devoted to the impact of Total Quality Management on testing, risk and cost management, innovative testing and lessons learned, improved testing for launch systems, Space Station testing, and software issues in testing. Particular attention is given to eliminating waste in the test process, satellite environmental testing cost benefits, motion- and force-controlled vibration testing, Shuttle and Shuttle-C mixed-fleet processing operations, environmental interactions on the Space Station, integrated testing of the Space Station ECLSS at NASA Marshall, a comprehensive software package for thermal vacuum test monitoring, and real-time instrumentation control applications for satellite system tests. Diagrams, drawings, graphs, photographs, and tables of numerical data are provided. T.K.

123. CHAMBERLAIN, ROGER A. (Martin Marietta Astronautics Group, Denver, CO). "ALS - A unique design approach." AIAA, Space Programs and Technologies Conference, Huntsville, AL, Sept. 25-27, 1990. 12 p, (1990 9009). English United States IAA9101 AIAA/TIS. 1736491 A91-10223

An advanced launch system (ALS), which is intended to be flexible and to deliver a wide range of payloads at a reduced cost, is discussed. The ALS concept also features total quality management, modular subsystems, standardized interfaces, standardized missions, and off-line payload encapsulation. The technological improvements include manufacturing of dry structures, use of composite materials, adaptive guidance and control systems, and laser-initiated radar systems. The operational improvements range from paperless management, to rocket engine leak detection devices and automated ground operations. B.P.

124. GAVERT, RAYMOND B. (NASA, Space Station Freedom Program Office, Reston, VA). "Space Station Freedom - Configuration management approach to supporting concurrent engineering and total quality management for NASA Space Station Freedom Program." IN: Space Logistics Symposium, 3rd, Colorado Springs, CO, Apr. 30-May 2, 1990, Proceedings (A91-10901 01-12). Huntsville, AL, Society of Logistics Engineers, 1990, 13 p. 6, (1990 9000). NASA Space Station Program Office, Reston, VA. English United States IAA9101 AIAA/TIS. 1737176 A91-10908

Some experiences of NASA configuration management in providing concurrent engineering support to the Space Station Freedom program for the achievement of life cycle benefits and total quality are discussed. Three change decision experiences involving tracing requirements and automated information systems of the electrical power system are described. The potential benefits of concurrent engineering and total quality management include improved operational effectiveness, reduced logistics and support requirements, prevention of schedule slippages, and life cycle cost savings. It is shown how configuration management can influence the benefits attained through disciplined approaches and innovations that compel consideration of all the technical elements of engineering and quality factors that apply to the program development, transition to operations and in operations. Configuration management experiences involving the Space Station program's tiered management structure, the work package contractors, international partners, and the participating NASA centers are discussed. R.E.P.

125. Henry, Craig A. "Does the United States Need Quality Awards?" Quality Progress. v23n12. 26-27, (Dec 1990). QPR English. 00528660

Each year, it becomes clearer that the US needs quality awards. Programs like the NASA Excellence Award for Quality and Productivity, the Malcolm Baldrige National Quality Award, and others provide a variety of benefits. These include: 1. increasing the value of goods and services purchased by consumers, 2. providing motivation for continuous improvement, and 3. returning pride to using the label "Made in the USA." These programs, by necessity, have focused attention on continuous improvement and total quality management (TQM). The most quality-conscious organizations recognize that they must devote as much time to

the processes that ensure continued improvement as to the products and services themselves. The message is spreading, due in large part to the sharing of hundreds of companies that participate in these prestigious programs, not to win an award, but to be recognized for the level of performance they already have achieved.

126. Jarrett, Joyce R. "Long Term Strategy . . . A Commitment to Excellence." *Journal for Quality & Participation*. 28-33, (Jul/Aug 1990). QCI English. 00513871

When the office was created in the early 1980s, the 2 main objectives of NASA's Productivity Improvement and Quality Enhancement (PIQE) Office were to: 1. focus and coordinate internal PIQE efforts, and 2. promote continuous quality and productivity improvement to US industries. NASA's PIQE initiatives have evolved into a multiprogram approach incorporating total quality management concepts. Collectively referred to as the Quality and Productivity Improvement (Q/PI) programs, they comprise guidelines for effective quality planning and management. NASA's contractor workforce accounts for about 60% of the agency's total workforce, and these contracting organizations are making substantial contributions to Q/PI programs. The most ambitious external initiative is the NASA Excellence Award for Quality and Productivity. This award stimulates public awareness of the importance of quality and productivity to the US' industries.

127. "Managing Quality and Productivity in Aerospace and Defense." (Nov 89). Virginia Productivity Center, Blacksburg, VA. 088364000 417206  
Superintendent of Documents, GPO, Washington, DC 20402. PC \$15.00.  
Microfiche furnished to DTIC and NTIS users. English GRAI9007 United States. 1434213 AD-A215 186/8/XAB MDA903-85-C-0237

This document has been designed to provide management teams and leaders in the aerospace and defense (A&D) contracting community with state-of-the-art and practice quality and productivity management concepts, theories, strategies, and techniques. The document is the product of a five-phase, six-year study funded by the DoD; a multi-disciplinary and diverse group of A&D contractors, academicians, military service acquisition elements of the

DoD, and the Defense Systems Management College were involved. A simple, conceptual model around which the document is designed is used to facilitate understanding of the quality and productivity management process. The document begins with challenges facing the A&D contractor community. Next, the importance of the need for visions of the organization of the future are discussed. The document then turns to an innovative and effective way to strategically plan for performance improvement. A conceptual overview of present, emerging, and future improvement strategies and techniques is presented; emphasis is placed on Total Quality Management, the management of participation, and gainsharing, Measurement theory, approaches, and techniques are presented. Reflections on continuous improvement and maintaining excellence end the document. An extensive listing of references and suggested readings are included to facilitate the reader's further study. Keywords: TQM, Total quality management. (kr)

128. Penzer, Erika. "Making a Federal Case for Quality." Incentive. v165n8. 29-30, 107, (Aug 1991). IMK English. 00566408

In the government, total quality management (TQM) faces regulations and outdated policies that hinder its success. Most of the government agencies involved in TQM hesitate to talk about financial rewards because whatever they claim to save, the Office of Management and Budget immediately takes back. Still, some government operations have quantified their TQM successes. For example, the Internal Revenue Service (IRS) Service Center in Cincinnati saved more than \$270,000 in 1989 by helping citizens file their returns electronically rather than on paper. NASA's Johnson Space Center saved more than \$12 million by reducing the thickness criteria for its Space Shuttle Thermal Control System blankets, a suggestion that came from a quality team.

129. Portanova, P. L.; Tomei, E. J. "Quality Function Deployment in Launch Operations." (23 Nov 90). Aerospace Corp., El Segundo, CA. 000512000 009500 English GRAI9113 United States. 1526695 AD-A230 983/9/XAB F04701-88-C-0089

The goal of the Advanced Launch System (ALS) is a more efficient launch capability that provides a highly reliable and operable system at

substantially lower cost than current launch systems. Total Quality Management (TQM) principles are being emphasized throughout the ALS program. A continuous improvement philosophy is directed toward satisfying users' and customer's requirements in terms of quality, performance, schedule, and cost. Quality Function Deployment (QFD) is interpreted as the voice of the customer (or user), and it is an important planning tool in translating these requirements throughout the whole process of design, development, manufacture, and operations. This report explores the application of QFD methodology to launch operations, including the modification and addition of events (operations planning) in the engineering development cycle, and presents an informal status of study results to date. QFD is a technique for systematically analyzing the customer's (Space Command) perceptions of what constitutes a highly reliable and operable system and functionally breaking down those attributes to identify the critical characteristics that determine an efficient launch system capability. In applying the principle of QFD, a series of matrices or charts are developed with emphasis on the one commonly known as the House of Quality (because of its roof-like format), which identifies and translates the most critical information. There are four key types of charts or phases that are developed during the QFD process: product planning, part deployment, process planning, and production planning. QFD is a team process.

130. "Quality Improvement Prototype Workshop. Held in Washington, DC. on August 24, 1990 Quality management (Final)." (24 Aug 90). National Aeronautics and Space Administration, Houston, TX. Lyndon B. Johnson Space Center. 019042004 English GRAI9110 United States. 1520626 PB91-155101/XAB

Hard copy of the slides presented in a one-day workshop on the Lyndon B. Johnson Space Center which received an Executive Office of the President 1990 Quality Improvement Prototype Award. The slides cover a perspective on the Johnson Space Center (JSC), participative strategic planning and implementation, the Team Excellence initiative, contractor partnerships, a JSC survey, management of technology, and lessons learned and future directions. Presentations were made by JSC and NASA staff.

131. SCHUTZENHOFER, L. A.; MCCONNAUGHEY, P. K.; MCCONNAUGHEY, H. V.; WANG, T. S.

(NASA, Marshall Space Flight Center, Huntsville, AL). "Management of a CFD organization in support of space hardware development." IN: AIAA Computational Fluid Dynamics Conference, 10th, Honolulu, HI, June 24-27, 1991, Technical Papers (A91-40701 17-34). Washington, DC, American Institute of Aeronautics and Astronautics, 1991, p. 21-31. 7, (1991 9100). National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL. English United States IAA9117 AIAA/TIS. 1782044 A91-40704

The management strategy of NASA-Marshall's CFD branch in support of space hardware development and code validation implements various elements of total quality management. The strategy encompasses (1) a teaming strategy which focuses on the most pertinent problem, (2) quick-turnaround analysis, (3) the evaluation of retrofittable design options through sensitivity analysis, and (4) coordination between the chief engineer and the hardware contractors. Advanced-technology concepts are being addressed via the definition of technology-development projects whose products are transferable to hardware programs and the integration of research activities with industry, government agencies, and universities, on the basis of the 'consortium' concept. O.C.

## PARTICIPATORY MANAGEMENT

132. Anonymous. "Malcolm Baldrige National Quality Award: Marlow Industries." Business America. v112n21. 4-5, (Oct 21, 1991). CT English. 00578543

Despite its success in the customized thermoelectric cooler market, in 1987, Marlow Industries (Dallas, Texas) initiated a structured, evolving system of continuous improvement through total quality management (TQM). Marlow's TQM system takes a top-down approach to continuous improvement, with the emphasis on quality beginning with Chief Executive Officer Raymond Marlow. Employee involvement is fostered through a flat organizational structure and a number of participatory mechanisms. Marlow uses a well-integrated, systematic approach for assuring the quality of products and services. It cultivates long-

term supplier partnerships and includes the technological expertise of valued suppliers at the start of its product and process improvement efforts. Marlow Industries is a 1991 winner of the Malcolm Baldrige National Quality Award.

## PUBLIC SECTOR

133. McWilliams, Gary. "The Public Sector: A New Lesson Plan for College." Business Week. Special Issue. 144-145, (Oct 25, 1991). BWE English. 00578284

Pressured by dwindling enrollments and budget worries, a small but growing number of colleges and universities are looking to business and adopting techniques, strategies, and the language of quality management. Executives have been lobbying universities to teach quality management to business and engineering students. While still unknown at many universities, such concepts as total quality management (TQM) influence how a few are run. According to University of Michigan provost Gilbert R. Whitaker, Jr., TQM techniques can help schools use their schedule, facilities, and human resources better. However, advocates of quality management do not think that faculty will be quick to relinquish such traditions as lifetime tenure and peer review of their teaching. Nevertheless, others say that change is coming fast.

134. Sensenbrenner, Joseph. "Quality for Cities." Nation's Business. v79n10. 60, 62, (Oct 1991). NAB English. 00574250

The largest, most complex service industry in the US is local government. Like US industry, local governments can use the total quality management movement to provide better police protection, street maintenance, and health services, often at a lower cost to taxpayers. This approach has already worked in Madison, Wisconsin. Many local governments could eliminate or reallocate 10%-25% of their program costs within 3-5 years by adopting the quality approach. Such savings are routine for private companies that have embraced it, and large savings are showing up in public agencies as well. Saving tax dollars is just one

benefit; another is the installation of a concept of service in government.

### TQM ACADEMIA

135. Bechtell, Michele L. "Teaching Management for Quality Improvement." *Journal for Quality & Participation*. 92-96, (Jun 1990). QCJ English Charts|References. 00504183

While business leaders continue to express the need for business schools to incorporate total quality management concepts into their management curricula, few schools have responded to the request. The Arthur D. Little Management Education Institute, a graduate school of business, has brought these concepts into the classroom with a course structured around content as well as process. The Managing for Quality Improvement course focuses solely on the managerial aspects of total quality management. Taught in 18 one-and-a-half-hour sessions, the course has been offered since 1988 as a 2-credit graduate level elective course in the 3rd phase of the master's program. The course is taught from an international perspective using examples from both manufacturing and service industries. Heavy emphasis is placed on team learning, team building, and the development of group leadership skills. Although the course addresses the numbers side of quality improvement, it focuses primarily on the people side of quality.

136. Bemowski, Karen. "Restoring the Pillars of Higher Education." *Quality Progress*. v24n10. 37-42, (Oct 1991). QPR English References. 00577933

Although US colleges and universities are recognized worldwide for education and research, a number of problems threaten their strength and stability. These include: 1. increasing costs and decreasing funding, 2. a decreasing number of high school graduates, and 3. competition. One source of competition is Europe, Japan, and other countries, where world-class schools are being built. The 2nd source of competition is major companies, such as Motorola and General Electric Co., which are educating their executives internally. Several colleges and universities



have recognized their precarious state and have begun using the principles and practices of total quality management (TQM) to improve how they educate and generate knowledge. For example, Columbia University (New York) has incorporated TQM into its curriculum with education modules, courses on TQM, and a TQM master's degree program. To be successful, US colleges and universities need to reevaluate their curricula, research, and operations.

137. Bruzzese, Anita. "What Business Schools Aren't Teaching." Incentive. v165n3. 29-31, (Mar 1991). IMK English. 00543381

As total quality and teamwork replace traditional management methods in the real world, educators and executives are stressing the urgency for curricula teaching total quality management (TQM). Companies such as Motorola and Xerox charge that the majority of business schools do not immerse students in the concept of TQM or give them the people skills needed to motivate a US workforce reeling from recession, layoffs, and tough foreign competition. One reason business schools have neglected TQM is that many consider it only a buzzword for traditional subject matter. Nevertheless, with the advent of the Malcolm Baldrige National Quality Award and the proliferation of total quality seminars, some campuses are beginning to incorporate TQM into their curricula. At the University of Chicago, the LEAD (leadership, education, and development) program has some 500 students who work in 10 groups called cohorts. These groups take classes together and function as a social network.

138. KURSTEDT, H. A., JR.; MALLAK, L. A.; HOWARD, E. M.; KURSTEDT, P. S. "Why engineers must know and manage organizational culture." (1990 9000). Virginia Polytechnic Inst. and State Univ., Blacksburg. English United States STAR9120 DOE. 1793750 N91-29071 DE-FG02-88DP-48058

The engineering manager's success is being judged more and more on qualitative measures concerning the human elements of their work. These new measures require engineers to become as skilled and at ease with the tools, methods, and techniques for qualitative issues as they are with more traditional quantitative tools, methods, and techniques. To achieve success toward these qualitative measures demands nothing short of a new way of thinking, indeed a new culture embodying new values and traditions.

Engineering managers must use culture change mechanisms along with their other management tools so they can better understand and manage culture. They must view concepts such as just-in-time, total quality management, and continuous performance improvement as integral to culture change efforts; these concepts and corresponding programs require an underlying culture to create an environment for change. Engineers who want to manage and change culture and communicate these changes must become comfortable with hoopla and symbolism to add drama and life to their words and plans. Engineers must understand the elements of culture, become effective communicators, and master the tools, methods, and techniques of culture change. DOE

139. McWilliams, Gary. "The Public Sector: A New Lesson Plan for College." *Business Week*. Special Issue. 144-145, (Oct 25, 1991). BWE English. 00578284

Pressured by dwindling enrollments and budget worries, a small but growing number of colleges and universities are looking to business and adopting techniques, strategies, and the language of quality management. Executives have been lobbying universities to teach quality management to business and engineering students. While still unknown at many universities, such concepts as total quality management (TQM) influence how a few are run. According to University of Michigan provost Gilbert R. Whitaker, Jr., TQM techniques can help schools use their schedule, facilities, and human resources better. However, advocates of quality management do not think that faculty will be quick to relinquish such traditions as lifetime tenure and peer review of their teaching. Nevertheless, others say that change is coming fast.

#### TQM APPLICATION

140. ACKERMAN, ARTHUR W., JR. (Loral Space Systems, Palo Alto, CA). "Total quality excellence - The multidimensional approach." IN: *Aerospace Testing Seminar*, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 3-10, (1990 9000). English United States IAA9111 AIAA/TIS. 1764979 A91-29691

The application of Total Quality Management-type strategies requiring 'profound' system knowledge to the design, development, manufacturing, and testing processes for a communication satellite is discussed on the basis of the author's personal experience and illustrated with extensive graphs and diagrams. Consideration is given to the design definition phase, the problem of timely acquisition of high-quality components, computerized techniques for the identification of rework and nonconformance rates in manufacturing and test operations, the need for very rigorous testing of high-power RF and dc components such as TWTAs, and the importance of detailed design reviews in preventing design-related component failures. T.K.

141. Adams, Johanna Library Association Record Geography, Los Angeles, CA). "New approaches to launch vehicle system development." AIAA, Aerospace Engineering Conference and Show, Los Angeles, CA, Feb. 13-15, 1990. 8 p. 11, (1990). English United States IAA9009 AIAA/TIS. 1694866 A90-25171

DOD and NASA seek launch capabilities that are more dependable and flexible in operation and which increase vehicle cargo lift capabilities. The Advanced Launch System (ALS) has been developing new approaches to system design and operation which promise increased operational capabilities at reduced costs. The joint ALS program is addressing these goals of reduced launch costs, efficient and flexible launch operations, and enhanced industrial productivity. The new approaches to space launch capability, development, and operation established by the ALS program are summarized. Modular, simplified designs reduce complexity, labor, and costs. Total quality management principles are being applied to build in quality from inception, match system capabilities to user needs, and achieve new economies. R.E.P.

142. Allen, Linda G. "Costs & Inspection Time Nosedive as Quality Takes Off." Automation. v37n12. 32, (Dec 1990). PDE English. 00533164

When faced with rising costs and growing inspection requirements, Custom Craft, a 50-year-old producer of precision sheet-metal components for the defense and aerospace industry, implemented total quality management. The company did so in an environment of special

processes, strict customer requirements, and medium to low-volume production. According to general manager Tim Jones, the problem was to satisfy customer demand for quality systems, improve quality awareness in the company, and foster a sense of ownership of quality at all organizational levels. Inspection was also a problem as it was a major cost component of the product. An intensive 6-month training program was launched to enhance productivity and employee skills. Quality and productivity improvement teams participated in the training and implementation. The teams developed performance measurements and established a system for reporting to management. Process-control procedures and corrective-preventive action matrices also were developed to provide a closed-loop system of evaluation and control. While long-term success of the program requires constant work, results already have been dramatic.

143. Aly, Nael A. Maytubby, Venetta J. Elshennawy, Ahmad K. "Total Quality Management: An Approach & a Case Study." *Computers & Industrial Engineering*. v19n1-4. 111-116, (1990). CIE English Charts/References. 00534680

For the last decade, US firms have been playing catch-up in the areas of quality and productivity. Japanese companies and other foreign competitors have entered markets once dominated by US companies by producing higher quality products. The problem in the US has been the misdirection of quality and improvement programs and the lack of total management commitment. Total quality management (TQM) is considered an effective method for achieving higher quality levels and increasing productivity. The purpose of TQM is to implement a process that is long term and continuous, in which all management participates in establishing continuous improvement initiatives throughout an organization, starting with their own functions. TQM integrates the fundamental techniques and principles of quality function deployment, Taguchi methods, statistical process control, just in time, and existing management tools into a structured approach. The primary goal is to incorporate quality and integrity into every function at every level of an organization. A case study is presented of Walsh International Corp., a major defense contractor, which currently is implementing TQM.

144. Barksdale, James L. "The Curtain Goes Up Every Night." *Executive Excellence*. v8n2. 5-7, (Feb 1991). EEX English. 00535829

For Federal Express Corp., winning the Malcolm Baldrige National Quality Award has made the company take a closer look at itself and its quality processes. One of the things it realized is that the real purveyors of quality are its employees. Federal Express recognized that, if it expects its employees to put people first, it must provide that same atmosphere for employees. To foster this idea, the company began with 3 basic quality concepts: 1. empowering its people, 2. giving employees the right tools to manage and measure their performance, and 3. developing a candid, open, 2-way communication environment. To reach its goals, the company keeps employees well informed, focusing the communication effort on the front line managers.

145. Baxter, Colin. "Total Quality Management and the Role of the Utility Industry." *Transmission & Distribution*. v43n6. 10, (Jun 1991). TMD English. 00557297

In the electric utility industry, quality of service historically has been defined in terms of availability of power and maintenance of voltage and frequency within predetermined limits. However, because of the changing nature of the customer's load equipment and the demands of these loads on the electrical system, expectations and the definition of quality have changed. The message of the total quality approach for all US industries, including the utility industry, is that a close focus on the customer's perceptions and needs is paramount. Central Maine Power Co. is one company that has adopted a system of quality. Central Maine's president, Joe C. Collier, Jr., coined "Total Power Quality" as a systematic approach to solving problems, identifying opportunities, and making improvements. In the future, utilities will be challenged to position themselves as champions of power quality and experts to which end users can turn for information, analysis, and recommendations.

146. Campbell, J. A. "Quality Improvement: Does the Air Force Systems Command Practice What It Preaches." (Mar 90). Air Univ., Maxwell AFB, AL. Airpower Research Inst. 082899000 395803 English GRAI9023 United States. 1483299 AD-A224 615/5/XAB

Production inefficiencies in many defense industries have resulted in significant cost growth for major weapon systems. These costs have not gone unnoticed. DOD has implemented many programs in an attempt to reduce these inefficiencies, but these efforts have met with little apparent success. Recently the Defense Department has adopted a philosophy--total quality management--that could finally lower these costs. This approach will require a re-education and cultural change of both the DOD and contractor work forces. In this study, the author uses a survey questionnaire to determine to what degree the AFSC acquisition work force understands what is causing these production inefficiencies and if it is applying management techniques that can reduce the cost of these inefficiencies. He surveys program directors, program managers, and quality assurance personnel at AFSC's five major product divisions. The most significant result of this study is that it establishes an important baseline that we can use to measure our commitment to addressing these production inefficiencies. The data strongly supports the notion that the TQM philosophy using continuous improvement is not well understood by the acquisition work force. The data also indicate that the work force does not understand the magnitude of these production inefficiencies. A communication problem in the program offices inhibits the work force from applying those management techniques that can minimize these inefficiencies. (EDC)

147. Chandra, Dinesh Somaiya, D. K. "Just-In-Time in India." *Production & Inventory Management*. v11n7. 30-32, (Jul 1991). PIA English. 00568032

India is a land of utmost contrasts, where the very ancient and ultramodern coexist. In the past, Indian industries had generally been protected from international competition, which led to low productivity and quality levels. In the past decade, the government's process of decontrol and liberalization has resulted in a competitive environment. Japan brought just in time (JIT) to India in terms of technology, while US collaborations brought the concepts of total quality management (TQM). Under TQM,

many Indian firms are now working toward manufacturing excellence. The Indianization of JIT-TQC is now taking place in 50 to 100 small to large companies. Although many top managers are not yet clear about the philosophy and modes of operation of JIT, they are impressed with the results. Tvs-Suzuki has introduced a suggestion scheme, statistical process control, and cross functional teams. Maruti Udyog Ltd. has implemented an aggressive vendor development program. Indians are learning that JIT is more than just the technology; it is the management philosophy of respecting the individual and developing trusting relationships between workers and managers for continuous improvement.

148. Coate, L. Edwin. "TQM at Oregon State University." *Journal for Quality & Participation*. 90-101, (Dec 1990). QCI English Charts. 00532002

Total quality management (TQM) requires strong leadership at all levels. Of particular importance is leadership that empowers people to work toward achieving their shared vision. At Oregon State University (OSU), President John V. Byrne has made a personal commitment to lead the university into a TQM program. The objective is to implement TQM throughout the university by 1994. The implementation of TQM at OSU has moved through 9 phases: 1. exploration of the TQM concept, 2. the formation of a TQM pilot study team, 3. the definition of customer needs through quality function deployment, 4. the use of top management breakthrough planning, 5. the use of breakthrough planning by divisions, 6. the formation of daily management teams, 7. the creation of cross-functional pilot projects, 8. the use of cross-functional management, and 9. the introduction of monthly reports, team recognition strategies, and awards programs.

149. CROY, HAROLD; ECKHOLT, JOHN O. (Boeing Aerospace and Electronics, Seattle, WA). "Development operations - A TQM process." IN: Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 13-15, (1990 9000). English United States IAA9111 AIAA/TIS. 1764981 A91-29693

The application of Total Quality Management (TQM) methods in an aerospace development program is briefly characterized. The approach involves the formation of 8-12-member Product Development Teams; the members have different areas of expertise but all receive extensive training in such TQM skills as quality awareness and improvement, process management, statistical process control, Taguchi methods, team leadership, and departmental task analysis. The teams are organized before proposals are submitted, when possible, and are responsible for requirements development, design, fabrication, test, delivery and postdelivery support of the specified product. T.K.

150. "Defense Communications Agency: Vision Twenty-One; Total Quality Management Quality management." (Oct 89). Defense Communications Agency, Arlington, VA. 042844000 Available from the Federal Quality Institute, P.O. Box 99, Washington, DC. 20044. English GRAI9110 United States. 1520611 PB91-154898

Hard copy of slides presented in a briefing on the Vision 21/Total Quality Management effort at the Defense Communications Agency (DCA). The slides cover DCA background and mission, the creation of Vision 21, the TQM journey, current status, and guiding principles.

151. "DLA-X Total Quality Management (TQM) Implementation Plan." (Jul 89). Defense Logistics Agency, Alexandria, VA. 051748000 410447 English GRAI9003 United States. 1425229 AD-A212 911/2/XAB

This document describes the DLA Office of Administration TQM implementing plan. The plan establishes policy, defines responsibility and identifies specific improvement goals for DLA-X. Keywords: Continuous process improvement. (KR)



152. Freundlich, Naomi Schine, Eric|Smith, Geoffrey|Carey, John. "Research & Development: Getting Everybody into the Act Weapons to Plowshares "A Warm Feeling Inside" "The Courage to Fail"." Business Week. Special Issue. 148-160, (Oct 25, 1991). BWE English. 00578285

Hundreds of companies, such as Alcoa, are starting to apply total quality management to their research laboratories. The objective is to break down the barriers between researchers hunting for discoveries and others further down the product-development line. Companies, including Westinghouse Electric Corp., are trying to move faster and trim expenses using multidiscipline teams that reduce cycle time. The biggest challenge in implementing quality in a research lab is getting the message across to scientists. Sandia National Laboratories president Al Narath has launched an ambitious quality program that is designed to do everything from accelerating the lab's research projects to improving the handling of hazardous wastes. Corning Inc. considers its quality program a key element in its emergence as a leader in markets heavily contested by the Japanese. At the cutting edge of research there are 2 seemingly conflicting definitions of quality. Steven A. Rosenberg of the National Cancer Institute is meeting those definitions in his work in the battle against cancer.

153. GAVERT, RAYMOND B. (NASA, Space Station Freedom Program Office, Reston, VA). "Space Station Freedom - Configuration management approach to supporting concurrent engineering and total quality management for NASA Space Station Freedom Program." IN: Space Logistics Symposium, 3rd, Colorado Springs, CO, Apr. 30-May 2, 1990, Proceedings (A91-10901 01-12). Huntsville, AL, Society of Logistics Engineers, 1990, 13 p. 6, (1990 9000). NASA Space Station Program Office, Reston, VA. English United States IAA9101 AIAA/TIS. 1737176 A91-10908

Some experiences of NASA configuration management in providing concurrent engineering support to the Space Station Freedom program for the achievement of life cycle benefits and total quality are discussed. Three change decision experiences involving tracing requirements and automated information systems of the electrical power system are described. The potential benefits of concurrent engineering and total quality management

include improved operational effectiveness, reduced logistics and support requirements, prevention of schedule slippages, and life cycle cost savings. It is shown how configuration management can influence the benefits attained through disciplined approaches and innovations that compel consideration of all the technical elements of engineering and quality factors that apply to the program development, transition to operations and in operations. Configuration management experiences involving the Space Station program's tiered management structure, the work package contractors, international partners, and the participating NASA centers are discussed. R.E.P.

154. "Managing Quality and Productivity in Aerospace and Defense." (Nov 89). Virginia Productivity Center, Blacksburg, VA. 088364000 417206 Superintendent of Documents, GPO, Washington, DC 20402. PC \$15.00. Microfiche furnished to DTIC and NTIS users. English GRAI9007 United States. 1434213 AD-A215 186/8/XAB MDA903-85-C-0237

This document has been designed to provide management teams and leaders in the aerospace and defense (A&D) contracting community with state-of-the-art and practice quality and productivity management concepts, theories, strategies, and techniques. The document is the product of a five-phase, six-year study funded by the DoD; a multi-disciplinary and diverse group of A&D contractors, academicians, military service acquisition elements of the DoD, and the Defense Systems Management College were involved. A simple, conceptual model around which the document is designed is used to facilitate understanding of the quality and productivity management process. The document begins with challenges facing the A&D contractor community. Next, the importance of the need for visions of the organization of the future are discussed. The document then turns to an innovative and effective way to strategically plan for performance improvement. A conceptual overview of present, emerging, and future improvement strategies and techniques is presented; emphasis is placed on Total Quality Management, the management of participation, and gainsharing, Measurement theory, approaches, and techniques are presented. Reflections on continuous improvement and maintaining excellence end the document. An extensive listing of references and suggested readings are included to facilitate the reader's further study. Keywords: TQM, Total quality management. (kr)

155. Noble, C. L. "Planning and Implementing Total Quality Management in the Royal Australian Air Force: A Multiple Case Study Analysis Master's thesis." (Sep 90). Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics. 000805004 012250 English GRAI9111 United States. 1521092 AD-A229 628/3/XAB

The Royal Australian Air Force (RAAF) is committed to the world-wide challenge to constantly improve quality. Total Quality Management (TQM) is one initiative being investigated by the RAAF to achieve continuous improvement of its processes. The purpose of this thesis was to examine the elements of a TQM program, and provide guidelines for introducing TQM into the RAAF. To accomplish the research objectives, a literature review of quality-related material was conducted. Quality principles and techniques were discussed, as was development of strategies of continuous process improvement. In addition, multiple case study analysis of select U.S. DOD organizations which have implemented TQM, was used to highlight the problems associated with introducing TQM in a military environment. The study found that TQM appears to be an effective strategy for achieving continuous improvement in quality and productivity. The guidelines provided for implementation of TQM in the RAAF focused on five fundamental elements: culture, management direction, organization, people, and continuous process improvement. The integration of these five elements forms a strategy for TQM implementation in the RAAF. (kr)

#### TQM APPLICATION

156. "DIPEC (Defense Industrial Plant Equipment Center) Total Quality Management Implementation Plan." (Jul 89). Defense Industrial Plant Equipment Center, Memphis, TN. 095777000 405393 English GRAI9003 United States. 1425219 AD-A212 901/3/XAB

This document outlines the Defense Industrial Plant Equipment Center's, concept and strategy for implementing TQM at all levels within the Command. It includes a methodology for implementation, TQM goals and milestones. Keywords: Continuous process improvement. (KR)

157. "DISC (Defense Industrial Supply Center) TQM (Total Quality Management) Operations Plan." (Jul 89). Defense Industrial Supply Center, Philadelphia, PA. 069825000 411181 English GRAI9003 United States. 1425223 AD-A212 905/4/XAB

This document represents the continuance of the Defense Industrial Supply Center implementation of Total Quality Management which began in 1986. It outlines how DISC intends to emphasize process improvement through the integration of all TQM initiatives. Quality management at DISC prescribes defining quality through customer expectations, eliminating rework, data driven decision making, total employee involvement. Keywords: Continuous process improvements. (KR)

### TQM ASSISTANCE

158. Hamson, Ned. "The FQI Story: Today and Tomorrow." Journal for Quality & Participation. 46-49, (Jul/Aug 1990). QJ English. 00513875

The Federal Quality Institute (FQI) was created to help federal agencies implement total quality management (TQM) by: 1. introducing senior officials to TQM concepts, 2. establishing a vehicle to help agencies contract for TQM implementation services in a timely manner, and 3. providing information on quality management through a resource center. One of the strategies used by the FQI to accomplish its mission was to participate in a variety of quality conferences in which the expected attendance by federal employees would be significant. For instance, the FQI participated in the planning of and then exhibited at the Association for Quality and Participation's Capital Chapter Conference held in December 1989. The FQI's quality improvement prototype awards and Presidential Quality Award also help make the FQI the focal point for federal quality and participation efforts and the leading edge for continuous improvement in the federal government.

## TQM BASICS

159. Rehder, Robert Ralston, Faith. "Total Quality Management: A Revolutionary Management Philosophy." *Advanced Management Journal*. v49n3. 24-33, (Summer 1984). AMJ English. 00246647

Since 1965, the US share of world trade has declined significantly, and more than half of the goods sold in the US in 1980 were manufactured abroad. To recoup market share, US business must institute a total quality control management system that is a hybrid of outstanding Japanese and American concepts and methods. This system can be termed total quality control/management (TQC/M). According to Kaoru Ishikawa, TQC pioneer, TQC embraces 5 strategic goals: 1. Quality must be sought before profits. 2. The infinite human potential of employees must be developed through education, training, delegation, and positive reinforcement. 3. A long-term consumer orientation must be fostered within and outside the organization. 4. Facts and statistical data must be used to communicate throughout the organization, and measurement must be used as motivation. 5. A companywide TQC/M system should be developed with the focus of all employees on quality implications of every decision and action.

160. Schaaf, Dick. "Beating the Drum for Quality." *Training*. Supplement. 5-12, (Mar 1991). TBI English. 00541349

In a roundtable discussion, a group of businesspeople addressed concepts of quality as they apply to US business. According to Louis E. Schultz, chief executive officer of Process Management International, quality means meeting and exceeding the customer's needs and expectations - and then continuing to improve. Tom Varian, vice-president of communications of Organizational Dynamics Inc., stated that it is important to take into account the whole customer-supplier chain that functions within an organization, defining quality at each link in that chain so that it functions as near to perfectly as possible in meeting the needs of the external customer. The consensus of the panelists is that quality is here to stay because it has become literally a life-and-death issue for the modern corporation.

Joseph M. Juran, founder and chairman emeritus of the Juran Institute Inc., stressed that, in the worldwide market, a business cannot be successful unless it gives its customers what they want.

161. Aalbrecht, R. John Hejka, John A. McNeely, Princeton K. "TQM: How Do You Do It?" Automation. v38n8. 30-32, (Aug 1991). PDE English Diagrams. 00570351

A framework should be developed that illustrates an overview of total quality management (TQM). The framework should be a clear picture of leadership's goals for the organization. Management must then weave the new goals and objectives into formal management systems, including planning, budgeting, performance measurement, reward and recognition, and other systems used to monitor and control business. Management needs to apply TQM principles throughout the organization and develop a comprehensive quality assurance program covering all aspects of the product life cycle. Getting all functional areas incorporated into the effort is an important step in moving beyond the production-conformance view of quality. Choosing tools for a quality assurance system entails matching specific data requirements with methods to obtain data. Also, any system must be sufficiently flexible to adjust to future changes in business requirements.

162. Ahluwalia, R. S. "Proceedings of National Symposium on the Role of Academia in National Competitiveness and Total Quality Management (1st) Held in Morgantown, West Virginia on 18-20 July 1990." (20 Jul 90). Defense Systems Management Coll., Fort Belvoir, VA. 062178000 410036 Prepared in collaboration with West Virginia Univ., Morgantown. English GRAI9114 United States. 1529707 AD-A231 625/5/XAB

The purpose of the First National Symposium on the Role of Academia in National Competitiveness and Total Quality Management was to examine academia's role in the education of future managers and engineers in TQM philosophy and to establish a national network of individuals from industry, academia and government, interested in the promotion and adoption of TQM

principals. The book includes speeches by prominent leaders from industry, academia and government that provide a national perspective on the symposium topic. Significant time was spent in team discussions. The presentations and discussions focused on teaching and practice of TQM. This book of proceedings documents symposium activities. It is divided into six sections: I -- Executive Summary; II -- Correspondence; III -- Speakers, IV -- Panels; V -- Team Reports; VI -- Appendix. The table of contents provides details of each section. The proceedings include letters from Vice President J. Danforth Quayle and Senator Robert C. Byrd.

163. Aly, Nael A. Maytubby, Venetta J. Elshennawy, Ahmad K. "Total Quality Management: An Approach & a Case Study." *Computers & Industrial Engineering*. v19n1-4. 111-116, (1990). CIE English Charts/References. 00534680

For the last decade, US firms have been playing catch-up in the areas of quality and productivity. Japanese companies and other foreign competitors have entered markets once dominated by US companies by producing higher quality products. The problem in the US has been the misdirection of quality and improvement programs and the lack of total management commitment. Total quality management (TQM) is considered an effective method for achieving higher quality levels and increasing productivity. The purpose of TQM is to implement a process that is long term and continuous, in which all management participates in establishing continuous improvement initiatives throughout an organization, starting with their own functions. TQM integrates the fundamental techniques and principles of quality function deployment, Taguchi methods, statistical process control, just in time, and existing management tools into a structured approach. The primary goal is to incorporate quality and integrity into every function at every level of an organization. A case study is presented of Walsh International Corp., a major defense contractor, which currently is implementing TQM.

164. Anderson, Craig A. Daigh, Robin D. "Quality Mind-Set Overcomes Barriers to Success." *Healthcare Financial Management*. v45n2. 20-32, (Feb 1991). HFM English References. 00534929

A health care facility needs a long-term, organization-wide strategy to remove hindrances to fiscal strength. Total quality management (TQM) offers a solution. TQM's management philosophy requires a hospital to: 1. adopt a workable definition of quality, 2. develop a customer orientation, 3. form organizational teams to study and revise work processes, 4. involve all employees in quality efforts, and 5. strive for continuous improvements. In the 1980s, health care financial managers concentrated on productivity, cost management, and other strategies to counteract declining revenues and rising costs. Short-term cost reduction strategies can be effective for immediate financial problems, but they often lead hospitals to devote fewer resources to running the same inefficient processes. In health care, TQM requires a revised mind-set, and organizations that have actively adopted and integrated the lessons of quality experts have changed management styles.

165. Anonymous. "Learning Through Sharing." *Quality Progress*. v23n6. 61-62, (Jun 1990). QPR English References. 00502151

Support groups can be vital in overcoming personal problems and can also be of help in overcoming another critical problem in the US: the loss of competitive position. Referred to as consortia, initiatives, or councils, these support groups give people the opportunity to share information and experiences. A quality support group has people from industry, academia, and government sharing information on quality methodologies and tools and their experiences with implementing them. Although the organization, members, and activities of quality support groups are diverse, the groups share a dedication and desire to become the best through quality improvement. In February 1990, seven companies in Massachusetts formed The Center for Quality Management in cooperation with faculty from the Leaders for Manufacturing program at the Massachusetts Institute of Technology. This consortium is establishing a learning network that encourages the widespread use of total quality management methodologies in business and throughout society.



166. Anonymous. "Malcolm Baldrige National Quality Award: Marlow Industries." Business America. v112n21. 4-5, (Oct 21, 1991). CT English. 00578543

Despite its success in the customized thermoelectric cooler market, in 1987, Marlow Industries (Dallas, Texas) initiated a structured, evolving system of continuous improvement through total quality management (TQM). Marlow's TQM system takes a top-down approach to continuous improvement, with the emphasis on quality beginning with Chief Executive Officer Raymond Marlow. Employee involvement is fostered through a flat organizational structure and a number of participatory mechanisms. Marlow uses a well-integrated, systematic approach for assuring the quality of products and services. It cultivates long-term supplier partnerships and includes the technological expertise of valued suppliers at the start of its product and process improvement efforts. Marlow Industries is a 1991 winner of the Malcolm Baldrige National Quality Award.

167. Anonymous. "Total Quality Management." Aviation Week & Space Technology. v133n25. S1-S10, (Dec 17, 1990). AWS English. 00526810

Despite the fact that total quality management (TQM) was one of the most talked about manufacturing management approaches of the 1980s, it remains puzzling to managers encountering it for the first time. Essentially, TQM involves: 1. breaking down the barriers to communication that arise between different company disciplines and setting up new cross-disciplinary quality teams, 2. establishing quantifiable measurements for these teams to measure progress, and 3. motivating teams to push for continuous improvement. Harris Corp.'s Electronic Systems Sector is one example of a company with a successful TQM program. At Harris, teams have made such changes as having the responsibility for running the cable assembly process turned over to the workers, instead of having supervisors organize the workflow. After the workers reached a labor division they liked, cable output was doubled. At Martin Marietta Electronic Systems, efforts to improve supplier performance have shown major results in recent years. In 1989, the division had 28 qualified suppliers, all with a history of 100% acceptable products.

168. Anonymous. "What's Next on the Quality Agenda?" Training. Supplement. 42, (Mar 1991). TBI English. 00541355

In a roundtable discussion, a group of businesspeople discussed the future of quality in US business. Philip Crosby of Crosby Associates stated that, even in a recession, if companies are giving their customers exactly what they want, the companies do not have to worry much about losing business. However, international pressures may continue to aggravate long-standing problems in American business, especially at the management level. The Forum Corp.'s Richard Whiteley stated that not enough companies are really willing to totally dedicate themselves to quality improvement programs. Joseph Juran of the Juran Institute expressed concern that defeatist attitudes may persist and perhaps even deepen in a recession, but he professed optimism overall. Juran stated that corporate America's problem is not how to reorganize its culture to compete at world-class levels, but to scale up what it knows can be done.

169. Arajs, Bridget Kinsella. "Testing the Teamwork Theory." Graphic Arts Monthly. v63n6. 76, (Jun 1991). BGR English. 00555372

To more graphic arts managers, team building is an intricate and vital element of the total quality management process. Forward-looking companies recognize that, when workers are included in decision making, quality and productivity can both improve. According to Mark DuPre of Rochester Institute of Technology's Technical and Education Center, managing for total quality requires both the statistical measurement of processes and enough leadership on the part of upper management to delegate responsibilities. Teams bring out a group's energies and harvest its collective wisdom so that management can determine what best to do with the data. Terry Pickett, a professor at Iowa State University and member of the Association of Graphic Arts Training, teaches 5 basic stages to team development: 1. establishing a need for team building, 2. clarifying goals and mission, 3. agreeing on roles and responsibilities, 4. assessing group dynamics, procedures, and processes, and 5. improving relationship and interpersonal skills.

170. Asbury, Ron. "Caveat Emptor." CIO. v4n11. 100-103, (Aug 1991). CIO English. 00569657

In the 1990s, quality is both a virtue and a competitive necessity. While all companies want it, many do not have the in-house ability to develop it. As a result, a number of quality consultants have appeared, offering to help implement continuous improvement in US businesses. The majority of these consultants are well-qualified and have helped companies implement successful programs of total quality management. However, some are attempting to sell an expertise that they do not possess. An unqualified consultant does little to help a company achieve its goals and can set the organization back by wasting time and money and by alienating employees. Less qualified firms give warnings to a company's quality director when the following practices are used: 1. inflated advertising, 2. offers of a one-stop shopping approach to quality improvement, 3. attempts to sell a ready-made, inflexible plan, and 4. plans to stay locked into an organization for a long time.

171. Atkinson, Philip. "Leadership Total Quality and Cultural Change." Management Services. v35n6. 16-19, (Jun 1991). MNS English. 00559174

Commitment is the foundation of an effective total quality management (TQM) initiative. Leadership is the key issue in promoting commitment. Leaders should be charismatic, flexible, and inspiring - especially with regard to those they manage. Leaders must be able to inspire others to create and manage change, to take responsibility, and, above all, to take risks. Involving, participating, and actively listening to others is the only way managers can create genuine improvement. Transformational leaders are independent, visionary, and inspirational and are driven by long-term goals, visions, and objectives. They are interested in ends rather than means. Transactional managers, in contrast, are especially good at achieving short-term results, fostering teamwork, and working in a practical manner. Clearly, transformational leaders and transactional managers need to work together. What they do with their people will determine the success they achieve.

172. Atkinson, Philip E. "Why Do Companies Pursue Total Quality Management?" Management Services. v30n11. 8-12, (Nov 1986). MNS English Charts/References. 00340250

The managers of Western manufacturers must plan strategically to maintain traditional markets. For example, the arrival of Nissan in the UK will force British manufacturers to meet higher quality standards in order to compete successfully. Consumers today place a higher value on quality than on loyalty to home-based manufacturers or on price. As a result, organizations will need to improve quality to survive. Traditional quality control techniques are inadequate, however. Rather, managers should recognize that quality is created through design and that many quality problems originate in service or administrative areas. The cost of quality is composed of 3 key elements: 1. the cost of errors, 2. the cost of inspection, and 3. the cost of prevention. A company's total quality drive must involve the development of a planning mentality that focuses on problem prevention. Preventive actions will reduce the overall cost of quality.

173. Aune, A. "Quality Improvement Process." (Nov 89). Selskapet for Industriell og Teknisk Forskning, Trondheim (Norway). Div. of Production Engineering. 084057011 See also PB90-167099. Presented at the EFQM European Quality Management Forum, Montreux, Switzerland, October 19, 1989. English GRAI9013 Norway. 1457300 PB90-202987/XAB

The paper presents the Quality Improvement Process; how it is implemented and maintained, the biggest road blocks and some results. It emphasizes education and training activities, quality measurement, and how the improvement process fits into the Total Quality Management structure.

174. Axline, Larry L. "TQM: A Look in the Mirror." Management Review. v80n7. 64, (Jul 1991). MRV English. 00556978

Total quality management (TQM) is a synthesized, pervasive, and unwavering commitment to quality through continuous process improvement by all members in the organization. In the cases where TQM has been most effective, there has been a true team concept based on an

environment that encourages candor, trust, and ethics. When organizations say one thing but do another, a significant credibility gap occurs that does not foster commitment to TQM or many other organizational priorities. The ethics of management must demonstrate an openness to questions. If management fails to eliminate fear or gives only token support to the process, the ethics of the organization come under scrutiny by both internal and external customers. A look in the mirror at TQM presents an image of obstacles that, when genuinely resolved, present significant opportunities for providing proactive leadership rather than defensive reactions.

175. Ayers, Allan F. "Function vs. Form: The Logistics Dilemma." *Transportation & Distribution*. v31n11. 10-14, (Oct 1990). HLS English Charts. 00528193

While a total quality management (TQM) program requires broad-based support, logistics managers can begin the process by developing the TQM culture within their own organizations. A manager should think about function rather than organization and the impact that logistics can have on manufacturing. TQM is a prerequisite for the implementation of just-in-time (JIT) programs. The results of TQM improvements, including reduced setup times, improved flexibility, and more reliable production output, contribute to JIT success. JIT is a continuous improvement process that focuses on inventory reduction and higher flexibility to respond to the changing needs of the marketplace. The implications of the global economy are contradictory to the philosophy of JIT due to global pipeline distances and the complex movement of goods. The responsibilities of logistics managers are broadening and the physical distribution and materials management functions are merging as companies reduce inventory buffers and learn to control the flow of inventory through a pipeline.

176. Baatz, Elizabeth B. "Who Says Small-Fry Can't Compete for the Baldrige?"  
Electronic Business. v17n19. 50, (Oct 7, 1991). ELB English. 00577243

With just \$13 million in annual sales, Marlow Industries Inc. won a site visit in its first attempt at the Malcolm Baldrige Award. Owner and president Ray Marlow believes that total quality management is a matter of corporate survival. According to chief operating officer Chris Whitzke, being small meant that, when managers listed a weakness on their section of the award application, they could immediately solve the problem. Management's commitment to empowering the employees is another key to the success. With upper management acting only as mentors and champions, each department team has a louder voice than is typical in US industry.

177. BACHERT, ROBERT F. (USAF, Wright-Patterson AFB, OH); GALLAWAY, GLEN R. (Joshua, Group, Inc., Beavercreek, OH). "Preparing the enterprise for total quality management - Defining, planning, and empowering." IN: NAECON 90; Proceedings of the IEEE National Aerospace and Electronics Conference, Dayton, OH, May 21-25, 1990. Vol. 2 (A91-30851 12-01). New York, Institute of Electrical and Electronics Engineers, Inc., 1990, p. 812-818. 9, (1990 9000). English United States IAA9112 AIAA/TIS. 1767262 A91-30959

The authors discuss the need for an enterprise to begin the development of a TQM (total quality management) process by better understanding its structures, functions, and performance in the context of a total/integrated operation. From this knowledge-base the enterprise can set objectives, define strategies, and plan an effective application of the TQM process and the use of resources that match an enterprise's strengths and weaknesses. The methodology, techniques, and tools for analyzing, planning, and changing management that empower an enterprise to effectively apply TQM are presented and discussed. It is noted that when planning and developing a new enterprise special care should be taken to design-in TQM. I.E.

178. BACHERT, ROBERT F.; LINDHOLM, TENNY A.; LYTTLE, DONALD D. (USAF, Aeronautical, Systems Div., Wright-Patterson AFB, OH). "The training enterprise - A view from the top." SAE, Aerospace Technology Conference and Exposition, Long Beach, CA, Oct. 1-4, 1990. 11 p. 16, (1990 9009). English United States IAA9121 AIAA/TIS. 1793989 A91-48616

The Air Force is developing methodology for the development of 'total' training systems/enterprises. The methodology is based on the concepts of the systems approach and adaptive evolutionary systems. This paper discusses these concepts, the methodology, and their application to the planning, design, and evaluation of training systems. Areas emphasized include the application of the Total Quality Management, needs/requirements analysis, and the Instructional Systems Development (ISD) process. Author

179. Backaitis, N.; Rosen, H. H. "Readings on Managing Organizational Quality Final rept. Apr-Nov 89." (May 90). Navy Personnel Research and Development Center, San Diego, CA. 055029000 390772 English GRAI9023 United States. 1483572 AD-A224 888/8/XAB

This volume of readings has been compiled for those interested in learning about new management philosophies that are helping to bring about the transformation of American industry and that are enabling firms to meet competitive challenges successfully with novel strategies. The new management philosophy is based on assumptions that better reflect the ground rules of today's global economy than do the assumptions upon which much of current management practice is based. This set of readings emphasizes the role of leadership at various levels of the organization in bringing about effective organizational response to the new competitive challenge. It describes changes in policies, in organizational structure, in the management of relationships with customers and suppliers, and in the management of relationships within organizations that will help them to create and sustain competitive advantage. Keywords: Quality; Management; Productivity; Leadership; Network analysis(management).

180. Badiru, Adedeji B. "A Systems Approach To Total Quality Management." Industrial Engineering. v22n3. 33-36, (Mar 1990). INE English Diagrams. 00491337

An integrated awareness of the importance of quality throughout an organization is facilitated by a systems approach to total quality management (TQM). A systems approach to TQM considers every interaction necessary between the various elements of an organization. The supporting cooperative actions of subsystems complement each other and, therefore, the overall effectiveness of the system is higher than the sum of the individual outputs from the subsystems. Total quality management should cover the systems integration of all the functions in a product life cycle such as: 1. design, 2. planning, 3. production, 4. distribution, and 5. field service. Each of these function, in turn, need to be integrated with respect to quality objectives. The Triple C concept of project management may then be applied to ensure that cooperation, communication and coordination functions are carried out to facilitate total quality management.

181. Ballantyne, David. "Turning the Wheel of Quality Improvement - Continuously." International Journal of Bank Marketing. v8n2. 3-11, (1990). IJB English Charts|References. 00504794

Improving the quality of service is viewed as the key to a competitive advantage. Total quality management is a philosophy that focuses on all work processes and the way they connect with customer needs. Failures are not caused by the worker but by failures of the process that supports work performance. ANZ Bank in Australia began its Customer Care program based on 3 elements: 1. troubleshooting, 2. customer service improvement, and 3. changes in management-staff relations. Diagnostic groups were built and hierarchies were flattened out. Workshop programs emphasized creative approaches to service issues and promoted a sense of fun and kinship. Quality was measured with a mix of 5 components: 1. customer service research study, 2. branch quality maintenance index, 3. branch silent shopper, 4. staff climate monitor, and 5. risk point analysis. ANZ also motivated its employees through a formalized reward structure.



182. Bechtell, Michele L. "Teaching Management for Quality Improvement." *Journal for Quality & Participation*. 92-96, (Jun 1990). QCI English Charts/References. 00504183

While business leaders continue to express the need for business schools to incorporate total quality management concepts into their management curricula, few schools have responded to the request. The Arthur D. Little Management Education Institute, a graduate school of business, has brought these concepts into the classroom with a course structured around content as well as process. The Managing for Quality Improvement course focuses solely on the managerial aspects of total quality management. Taught in 18 one-and-a-half-hour sessions, the course has been offered since 1988 as a 2-credit graduate level elective course in the 3rd phase of the master's program. The course is taught from an international perspective using examples from both manufacturing and service industries. Heavy emphasis is placed on team learning, team building, and the development of group leadership skills. Although the course addresses the numbers side of quality improvement, it focuses primarily on the people side of quality.

183. Benson, Tracy E. "Challenging Global Myths." *Industry Week*. v240n19. 12-25, (Oct 7, 1991). IW English Graphs. 00576264

As a result of years of global competition and the ensuing exploration of quality, it is now common knowledge that the pursuit of quality products, services, and processes results in lower cost, higher productivity, and greater market share. The International Quality Study (IQS), a joint research effort launched by the American Quality Foundation and Ernst & Young, is the first known attempt to assess the level of quality practices across industries and across national borders. The study has found that companies in Japan behave far differently in the face of quality and related issues than was previously believed in the US. Companies in the US consistently report that they intend to dramatically step up efforts on all fronts in the quality arena. Fewer than half of the IQS respondents have elevated customer satisfaction measurements to a primary status on the strategic-

planning level. The key to harnessing the complexity of a company's quality efforts for the business payoff is in its integration.

184. Benson, Tracy E. "The Gestalt of Total Quality Management." *Industry Week*. v240n13. 30, 32, (Jul 1, 1991). IW English Charts. 00557862

Stephen L. Yearout, national director of operations and quality management for Ernst & Young's management consulting group, refers to bringing the specific components of total quality management into focus and then backing away to understand fully how the elements must work in harmony as "the gestalt of total quality management (TQM)." Some organizations apply several tools at once in a frenzy to continuously improve. The problem is that too few leaders in these enterprises distance themselves to observe just how individual initiatives mesh into the overall quality objective. Just as the TQM program in general must be viewed from a distance, so must each of its elements be examined in its own breadth and scope. In many cases, the actual structure of the company must be altered to allow for a greater exchange between and across departments. The Ernst & Young International Quality Study will provide a backdrop against which organizations can at least gauge their approach to TQM.

185. Berger, Sally Sudman, Susan K. "Making Total Quality Management Work." *Healthcare Executive*. v6n2. 22-25, (Mar/Apr 1991). HEE English. 00551538

The health care industry is talking about extending the standard of quality that people expect in clinical care into every aspect of a hospital's services and management systems. The concept, called total quality management (TQM), involves a pervasive, across-the-board integration of quality of care, quality of services, and quality of an administrative system, synchronized to deliver ever higher standards of performance in everything a hospital does. TQM may require a virtual revolution in a hospital's management style, pervasive change in the culture of the organization, and a time frame long enough to make such great change happen. Signs that warn executives that a quality-improvement program is either getting off to a bad start or likely to fail before it can deliver the anticipated results include: 1.

inadequately measuring results, 2. mistaking the program initiative, 3. failing to develop a change strategy, and 4. failing to allow enough time to implement TQM. Health care by definition demands quality, and the rigors of today's competitive environment demand total quality.

186. Biggar, J. L. "Total Quality Management in Construction." American Association of Cost Engineers Transactions. Q.1.1-Q.1.4, (1990). AEE English References. 00534442

Because of the complex nature and ever-changing environment of constructed projects, the management system must be flexible, sensitive to effective communications, and continually improved. Total quality management (TQM) is the key to the implementation of an effective management system. TQM often is defined as a complete management philosophy that permeates every aspect of a company and places quality as a strategic issue. W. Edwards Deming, Joseph M. Juran, and Roland A. Dumas all have developed principles pertaining to quality. In studying US industries, Dumas found a correlation between the maturity of a firm's approach to quality management and the definition of quality used. The final level of maturity is reaching the "it develops" stage. At this stage, the firm strives to develop its customers through education and exposure to ways of better utilizing its products and receiving greater value. The Chemicals Division of Eastman Kodak Co. has begun to be recognized as a leader in the implementation of an effective TQM program.

187. Blum, James L. "Developing People by Sharing Responsibility." Bureaucrat. v19n4. 57-58, (Winter 1990-1991). BUR English. 00534625

A large number of government managers receive training informally, by observing how other managers handled different situations and by trial and error. A number of persons may play an important part in influencing an individual's management style. It has been the experience of one manager that some people taught him lessons on how to manage, while others taught him lessons on how not to manage. The lessons learned involve: 1. the value of customer service, 2. the importance of communicating with work associates in a gentle manner, 3. the importance of direct and open communication with staff, 4. the need to

encourage staff to act on their own initiative and to reward and recognize work well done, 5. the benefits of sharing responsibility, which allows agencies to be more responsive, and 6. the need to train staff to sharpen their skills and develop their potential. These various elements are integral parts of the latest management initiative in the federal government - Total Quality Management.

188. Boone, Greg Merlyn, Vaughan. "Getting the Process Right." Computerworld. v25n23. 75-77, (Jun 10, 1991). COW English. 00554625

While most companies are managing pilot computer-aided software engineering (CASE) programs effectively, it is during full-scale implementation that the real problems become apparent. Problems such as resistance and skepticism are the result of the failure of many software development organizations to recognize that CASE does not just speed up existing software development activities but transforms the software development process. The challenge for information systems managers is to concentrate on the software development process, not just the technology, managing the quality improvements and organizational changes that are likely to occur. One improvement approach, for example, is called continuous process improvement. Continuous process improvement relies on a stable process, a process that is consistently followed and repeatable and that provides reasonably consistent results. Only by taking the process improvement view can real breakthroughs in productivity be obtained.

189. Botterill, Meaghan. "Why You Should Implement TQ." Management Services. v34n12. 18-21, (Dec 1990). MNS English. 00529587

In September 1990, David Hutchins & Associates presented a Users' Convention on Total Quality. During the 2-day conference, delegates from 12 UK companies delivered case studies that detailed their experiences in initiating a total quality (TQ) program. Like many others, these companies have been forced to change their organizations and to become more cost-effective because of increasing competition, loss of market share, or government legislation and policies. The companies have adopted TQ management (TQM) in order to face outside influences.

With TQM, the aim is to get it right the first time, every time, and to understand who the customers are, what they want, and when they want it. The implementation of TQ involves: 1. a strategic plan, 2. commitment for TQ from top management on down, 3. education and training, 4. measurement, and 5. communication. Quality circles empower people to be creative, imaginative, and industrious. They offer solutions from first-hand work experience.

190. Bradt, Jeffrey A. "Pay for Impact." *Personnel Journal*. v70n5. 76-79, (May 1991). PEJ English. 00548722

For any performance management system to be successful, it must tap into the key determinants of employee motivation. Vroom's expectancy theory maintains that the valence (positive, neutral, or negative predisposition) to perform a task is a function of the perceived probabilities and consequences of success and failure and the valence of each. To overcome the ambivalence created by the difficulty of predicting success, organizations must increase the valence of the perceived consequences of success. One of the best ways of doing this is by emphasizing a task's importance. Directing an employee's attention to each task's importance through the use of impact analysis would maximize the correlation between a task's valence and its potential benefit to the organization. Impact analysis is designed to be performed in a total quality management environment and in organizations that are in managerial control.

191. Breisch, Walter E. Breisch, Roger E. "Employee Involvement." *Quality S-* v29n5. 49-51, (May 1990). QUA English. 00496619

Total quality management (TQM) is a system composed of 3 potentially independent subsystems: employee involvement, customer focus, and the tools of quality. It is only when these critical subsystems operate synergistically that TQM is successful. Employee involvement (EI) is the management system on which TQM should be built. It is the most important of the 3 elements and also the most complex. True EI is created when every employee is motivated and empowered to make changes that support the strategic needs of the organization. When meeting customer needs becomes

the strategic operational issue (SOI) around which EI operates, the organization approaches a good TQM system. This SOI must be translated into measurable goals at every level in the organization. Once the customers' needs have been identified, each employee can apply the most appropriate tools available to identify obstacles and implement solutions.

192. Brown, Mark Graham. "Measuring Your Company Against the Baldrige Criteria." *Journal for Quality & Participation*. v14n3. 82-88, (Jun 1991). QCI English. 00570441

Many companies use the Malcolm Baldrige National Quality Award as a set of standards or guidelines for improving quality in their own organizations. The criteria for the award are extremely thorough and difficult to meet. By evaluating one's organization with a self-assessment questionnaire, weak areas can be diagnosed and improved. The award examination process is based on an assessment of 7 categories of data about an organization. Up to 6 examiners independently review and score applications for the Baldrige Award and provide a company with a detailed feedback report. A questionnaire is provided that offers immediate feedback and saves the investment of time and money required to prepare an actual award application. The survey can be used to: 1. familiarize executives with the Baldrige criteria, 2. introduce people to the requirements in training sessions or meetings, 3. gauge employee perception about how well the organization implements total quality management, and 4. familiarize suppliers with the Baldrige criteria.

193. Brown, Mark Graham|Svenson, Ray. "What "Doing" Total Quality Management Really Means." *Journal for Quality & Participation*. 32-38, (Sep 1990). QCI English Charts|References. 00520974

It is believed that total quality management (TQM), a broad term that may be used in a number of ways to describe an organization's efforts to approach quality improvement as a systematic process, is too broad and needs to be more precisely defined. The emphasis should be on total - meaning that the organization's approach to quality improvement is integrated into all functions and levels in the organization, not just the

shop floor. More than simply a program, TQM is a way of running a business. Two attributes found in organizations that have effectively implemented TQM are a policy-philosophy statement regarding quality in the company and a strategic quality plan. Themes involved in the process relate to: 1. visions and values, 2. commitment and participation, 3. quality measurement, 4. continuous improvement, 5. human resources development, 6. technology and systems, and 7. rewards. In addition, many large companies offer their vendors incentives for exceeding predetermined quality standards.

194. Brown, Tom. "Larry Miller: The Cover on a Jigsaw-Puzzle Box." *Industry Week*. v240n10. 12-19, (May 20, 1991). IW English. 00552722

In an interview, consultant-author Larry Miller expressed his views on management. He believes that executives are entering a 3rd era of how they organize and think about the management process. The first era was the craft shop. It was kind of a pull-through system that did not keep much inventory. The 2nd stage was the evolution of the so-called factory or mass-production model. In this stage, standardization became critical. In the 3rd stage, executives have learned how to combine the efficiency of factories and the intimacy and the bonding of the family farm and small craft shop. Miller believes the concept of supervision is increasingly becoming irrelevant. Instead, there will be a need for teams made up of subject matter experts (SME). Miller argues that every company in the world should be: 1. working at continuous improvement, 2. creating a culture where people work together in groups, and 3. creating a culture where everyone knows the customer and tracks performance.

195. Brownstone, Robert B. | Stonefield, Peter. "Is TQM Enough?" *Journal for Quality & Participation*. 34-36, (Jul/Aug 1990). QCJ English. 00513872

Total quality involvement (TQI), unlike total quality management (TQM), means more than training managers or constructing a parallel organization to drive the total quality process. Involvement means training virtually everyone in group process, meeting management, and quality enhancement skills, and then putting them on teams. With this approach, everyone is more fully empowered and integrated in the

organization and has a stake in maintaining momentum. The Employment Standards Administration (ESA) of the US Department of Labor has implemented TQI in 3 agencies and found that energizing the total quality enhancement process with real involvement builds employee confidence, motivation, flexibility, and creativity. ESA also found that anything less than real involvement is incongruent with its mission and that the highly interactive nature of the field investigators' work with corporations is enhanced by learning and utilizing involvement processes.

196. Bruzzese, Anita. "What Business Schools Aren't Teaching." Incentive. v165n3. 29-31, (Mar 1991). IMK English. 00543381

As total quality and teamwork replace traditional management methods in the real world, educators and executives are stressing the urgency for curricula teaching total quality management (TQM). Companies such as Motorola and Xerox charge that the majority of business schools do not immerse students in the concept of TQM or give them the people skills needed to motivate a US workforce reeling from recession, layoffs, and tough foreign competition. One reason business schools have neglected TQM is that many consider it only a buzzword for traditional subject matter. Nevertheless, with the advent of the Malcolm Baldrige National Quality Award and the proliferation of total quality seminars, some campuses are beginning to incorporate TQM into their curricula. At the University of Chicago, the LEAD (leadership, education, and development) program has some 500 students who work in 10 groups called cohorts. These groups take classes together and function as a social network.

197. Bull, Steven. "Total Quality Management in a Redundancy Situation." European Management Journal. v9n3. 288-294, (Sep 1991). EMJ English Charts|Graphs. 00578633

Interox Chemicals Ltd. (UK) has been involved in a turnaround process, adopting total quality management (TQM) as the key to change. The management and staff recognized that the program had considerable redundancy implications, but it was believed that TQM could lead to beneficial cultural and attitude changes. The Business Improvement Plan was



communicated to all employees in a positive manner. A crucial part of the planning was the introduction of TQM before the announcement of the plan. TQM was introduced at a time when the staff was suffering from the emotional attitudes associated with doubt and uncertainty. A comprehensive briefing document called Interlox Chemicals Ltd., Total Quality was given to each employee at the briefing session. Workshops reinforced the commitment to TQM and educated staff on the subject.

198. Butler, Melvin L. "Quality Leadership Equals Quality Service." *Bureaucrat*. v19n2. 44-46, (Summer 1990). BUR English. 00513117

One proven approach to bringing about a change in the culture of a public service organization is through total quality management (TQM), a process whose chief ingredient is strong leadership. With its emphasis on striving continuously to improve processes as opposed to using quality control and searching for human errors, TQM offers a way to rejuvenate organizations and to involve "internal customers" (employees) in improving the products and services provided them. Managers need to treat the internal customer with the respect and excellent service that is due the external customers. It is important that a leader provide constancy and a sense of commitment to the organization. Managers must be able to involve their subordinates in searching for ways that will make it easier and more rewarding for them to do their jobs. To foster a group cohesiveness and pride, managers need to reward team efforts. The astute manager will make it a point to be available and visible to members of the staff.

199. Callaghan, Chad. "How Security and Quality Go Hand in Hand." *Security Management*. v35n10. 53-55, (Oct 1991). SEM English. 00576680

Quality, as it relates to business management, was introduced by Edwards Deming in the 1950s. Over the years, Deming's ideas have been embraced by US business. For security departments, an organization's shift in philosophy to the quality process can seem confusing and even threatening. However, security managers who understand and support the quality improvement process will not only survive, but thrive. Learning to manage change is the key. The quality improvement process requires a

paradigm shift - a willingness to discard preconceived notions about how things are supposed to be. The degree of flexibility of a security department could determine its destiny. These times of transition and change provide many opportunities for those able to adapt. If it is ready and willing, the security industry can walk hand-in-hand into the future with the quality improvement process.

200. Carter, D. C. "Total Quality Management and Reform of the Military Acquisition System Research rept." (May 90). Air War Coll., Maxwell AFB, AL. 001030000 014550 English GRAI9118 United States. 1541950 AD-A234 905/8/XAB

The author analyzed Total Quality Management (TQM) and the acquisition system and assessed the probability that TQM could help reform the acquisition system. TQM concepts deemed critical to success in Japanese commercial enterprises were noted. Significant differences between commercial and military implementation of TQM in the acquisition system were noted. Then government TQM policies and plans were analyzed and assessed for (1) their congruence with fundamentally important TQM concepts and (2) their consideration of impediments due to differences in the commercial and military environments. An informed conclusion was then reached about the prospects for shortening the time to acquire things as a result of applying TQM within the acquisition system. The author concludes TQM can have a favorable impact on the acquisition system if top civilian leaders hold military leaders strictly accountable for TQM results. If they do, then top military leaders will probably hold their subordinates strictly accountable for TQM results and the TQM culture will take root and the acquisition system should improve. On the other hand, if TQM results do not affect officers promotions and assignments, then TQM will have little chance of significantly improving the acquisition system so that acquisition time is shortened.

201. Caudron, Shari. "The Importance of Being Earnest." *Electronic Business*. v17n19. 150-154, (Oct 7, 1991). ELB English. 00577255

Programs that encourage employee involvement, group participation, training, performance recognition, and staff morale are the new focus of quality from a human resource (HR) perspective. One of the more dramatic and successful efforts at empowering employees is taking place at Martin Marietta's Astronautics Group (MMAG) in Denver, Colorado. Two years ago, MMAG instituted a total quality management (TQM) process, an ongoing effort to improve customer satisfaction. To build employee support for the quality effort, MMAG dropped its pyramid hierarchy of management in favor of a flatter structure and more participative management approach. High-performance work teams were organized to empower people closest to the work to make decisions about how that work is performed. The team approach has resulted in more than \$15 million in production-area savings in 1990. Less tangible benefits include improved morale. Interviews with MMAG employees yielded strong positive feelings about their work and their employer.

202. Cayer, Shirley. "Quality 1991 - Buying Quality: Why Reinvent the Wheel?" *Purchasing*. v110n1. 89, 91, (Jan 17, 1991). PRG English. 00535300

Motorola Inc., a 1988 winner of the Malcolm Baldrige National Quality Award, demands that its suppliers put themselves in a position to apply for the award. The tough stand comes after a decade of concentrating its own energies on quality procurement and proving that it works. Annual sales for Motorola in 1989 exceeded \$9.6 billion, with roughly 40% earned outside the US. According to Motorola's Ken Stork, the value of the Baldrige award is derived from involvement in the examination, which is a quantifiable, impartial, and rigorous quality assessment process. The award covers the spectrum of requirements necessary to achieve total quality management: prevention, appropriate and effective policy deployment, and measured results. Former chairman Robert Galvin estimates that US gross national product would increase a minimum of 0.5% if the Baldrige system were adopted as a national standard.

203. Chen, Chris. "Recruitment: TRW S&D Strives to Be the Preferred Employer." Personnel Journal. v69n7. 70-73, (Jul 1990). PEJ English References. 00505889

With a workforce of more than 25,000, TRW Space and Defense (S&D) is a prime competitor in the knowledge worker labor markets that will be the most competitive during the 1990s. To meet this challenge, the division is committed to being the preferred employer of this decade in all its regional labor markets. During the 1990s, workforce performance will be the key to a competitive advantage. The foundation for that performance is a company's ability to attract and retain workers. Career and personal development has long been a priority at TRW, and the S&D division offers company-sponsored personal and skill-specific development programs as well as full tuition reimbursement. Since 1978, TRW has practiced a flexible time policy. Issues on the agenda for its long-term preferred employer strategy include total quality management, career paths, and esprit de corps. In 1990, TRW S&D plans to implement several steps to satisfy the needs of its employees, including on-site child care, on-site fitness facilities, and housing assistance.

204. CHITESTER, BRIAN J. (United Technologies Corp., Pratt and Whitney Group, West Palm Beach, FL). "Lessons learned when implementing total quality management." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 5 p, (1990 9007). English United States IAA9018 AIAA/TIS. 1719418 A90-42205

Despite being called by some the 'alphabet soup program of the year'. TQM is accelerating throughout the aerospace industry. However, organizational inertia can ground even the most soundly designed processes. Critical TQM implementation barriers and lessons learned have been accumulated and expounded on in this paper. Dealing with organizational culture is one of the most difficult issues. In high-technology environments, where people have been task-oriented and product-focused, engineers and scientists often struggle to embrace a process orientation that focuses on participative involvement and prevention. Successful implementation requires a fundamental change in the way companies are structured to do business. Active executive involvement and leadership are paramount to achieving this cultural leap.

Without this senior level commitment and accountability TQM will not flourish. Author

205. Clark, H. J. "Total Quality Management: Getting Started Technical paper (Final) May-Aug 90." (Aug 90). Air Force Human Resources Lab., Brooks AFB, TX. 026411000 404415 English GRAI9107 United States. 1507945 AD-A225 781/4/XAB 9991 03

This paper gives guidelines for starting a Total Quality Management (TQM) program using Organizational Development (OD) intervention techniques to gain acceptance of the program. It emphasizes human behavior and the need for collaborative management and consensus in organizational change. Lessons learned stress the importance of choosing a skilled TQM facilitator, training process action teams, and fostering open communication and teamwork to minimize resistance to change. Keywords: Management planning and control, Quality control, Quality, Management, Organization change, Organization development, Productivity. (Author) (KR)

206. Clay, J. L. "Air Force Acquisition Stability and the Program Manager Research rept." (May 90). Air War Coll., Maxwell AFB, AL. 001030000 014550 English GRAI9118 United States. 1541603 AD-A234 541/1/XAB

This study answers the question, How can the Air Force program manager (PM) improve weapon acquisition stability. By analyzing acquisition in terms of stability, current weapon procurement problems are better understood. A stable acquisition program is defined as one which has both quality planning and disciplined execution. The instability of Air Force weapon programs is described and documented as a significant deficiency. Fourteen causes of instability, affecting both planning and execution, are described. Included are problems of faulty requirements, strategy disconnects, persistently optimistic estimates, ambiguous plans and objectives, inadequate skills, floating baselines, distraction, and turbulent budgets. Five recommendations are presented which, if adopted by the PM, will improve program stability. They are titled, quality requirements, realistic estimates, plan education, total quality management and contractor commitment. The study does not present any revolutionary solutions to acquisition deficiencies; rather it

analyzes the problem from a new perspective and provides a framework for implementing proven management concepts.

207. Clemmer, Jim. "How Total Is Your Quality Management?" *Canadian Business Review*. v18n1. 38-41, (Spring 1991). CAB English References. 00542949

Substantial and lasting service and quality improvement requires the integrated effort and involvement of external suppliers, frontline performers, and management in every part of the organization. That is total quality management (TQM). Until the service-quality improvement effort changes the systems, processes, and daily work habits of the entire organization, the best training, inspiration, and planning will have little lasting effect. Polls conducted by Lakewood Research have identified the 5 biggest challenges to implementing TQM: 1. getting top management support, 2. obtaining customer feedback-quality measurement, 3. training, 4. designing a TQM system, and 5. implementing the system. Putting the total into quality management requires the systematic pulling together of 3 organizational effectiveness fields: customer service, continuous quality improvement, and organizational development. Zenger-Miller's research of organizations 2 years or more into the implementation of service-quality improvement efforts showed that the majority of ineffective implementations revolved around leadership, skills, strategy, and people issues.

208. Cohen, Jack. "Everyone Should Be a Sales Rep." *Marketing News*. v25n17. 4, 26, (Aug 19, 1991). MNW English. 00568999

To begin on the path to total quality, business leaders must first build unified salesforces that begin with the field salespeople and extend throughout every sales-support and service-support people in the company. Products must be quality products, backed by quality sales support and quality client services. Today, sophisticated, enlightened managers and sales performers realize that prospects buy only when their needs are fulfilled or their problems are solved. People do not buy based on product or price consideration alone. The emotional buying factor is an integral part of the buying decision. Buyers now admit that trust, pride, and enthusiastic personal attention are important factors that influence

their buying choices. Total quality is an operating philosophy that moves companies from product-focus to customer-focus, through employee-focus, all operating as a team.

209. Cook, Brian M. "Quality: The Pioneers Survey the Landscape." *Industry Week*. v240n20. 68-73, (Oct 21, 1991). IW English. 00577517

The US introduced the concept of total quality management (TQM) to the world some 40 years ago. Philip Crosby, an early expert in the field of quality, has now turned his attention to a new business that focuses on helping executives face reality. Most business problems today are caused by managerial arrogance, which separates workers and executives. The leader's job is to make employees and suppliers successful. Armand Feigenbaum, author of Total Quality Control, sees a 2-tiered economy. On top are firms that are leaders in their respective markets. The 2nd-tier firms are facing stiff foreign competition, while at the same time producing products with the promise that they will fix any problem. The fix-it-later approach costs the users and manufacturers enormous sums.

210. Cozart, Jerry Carlisle, TomHoudeshell, Jim. "Management's Role in Process Control." *American Printer*. v204n5. 72-73, (Feb 1990). APR English. 00486716

The 1980s were a time of emendous technological change and revolution in US industries. Color electronic prepress systems, high-speed presses, in-line finishing, and other advances caught up graphic arts firms in the technology revolution. Even with all the new technology, costly production problems and mistakes continue to occur. Many graphic arts managers are not aware of the worldwide management revolution and the benefits it can provide. Examples of new managerial methods are: 1. total quality management supported by statistical process control, 2. just-in-time production methods, and 3. quality function deployment. In the 1990s, the innovative printer will have a companywide quality system focusing on continuous improvement. This quality effort will include partnerships with suppliers and customers and improvements in printing processes, sales, and customer service. All the advanced technology must be managed and absorbed into the company. To do this, the print manager must

create a company culture that allows the best possible mix of technology and human skills.

211. CROY, HAROLD; ECKHOLT, JOHN O. (Boeing Aerospace and Electronics, Seattle, WA). "Development operations - A TQM process." IN: Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 13-15, (1990 9000). English United States IAA9111 AIAA/TIS. 1764981 A91-29693

The application of Total Quality Management (TQM) methods in an aerospace development program is briefly characterized. The approach involves the formation of 8-12-member Product Development Teams; the members have different areas of expertise but all receive extensive training in such TQM skills as quality awareness and improvement, process management, statistical process control, Taguchi methods, team leadership, and departmental task analysis. The teams are organized before proposals are submitted, when possible, and are responsible for requirements development, design, fabrication, test, delivery and postdelivery support of the specified product. T.K.

212. De, Rose Louis J. "Industrial Buying Now Affected by Long-Term Strategy." Marketing News. v24n11. 20, (May 28, 1990). MNW English. 00499273

Higher management now views purchasing as a basic business process rather than a narrow specialized function. As such, the process requires the integrated activity of engineering, production, quality, and cost control, which must take place in the context of overall business and management strategy. Industrial purchasing is being influenced more by longer term strategic considerations than by short-term operational ones. This development has been steadily evolving, but it has accelerated rapidly in recent years for 4 reasons: 1. Companies are outsourcing more of their products and services. 2. Rapidly changing technology and intense foreign competition are steadily shortening product life cycles. 3. Reacting primarily to Japanese competition, manufacturers have implemented total quality management and just-in-time (JIT) controls. 4. The pursuit of total quality and JIT service



with outside suppliers has led to a sharply reduced supply base. Therefore, the only viable strategy for industrial Emarketers to follow is to sell value, which demands that 2 criteria be met: 1. Seller offerings must satisfy implied and specified purchase requirements. 2. Seller offerings must be cost-effective.

213. "Defense Communications Agency: Vision Twenty-One; Total Quality Management Quality management." (Oct 89). Defense Communications Agency, Arlington, VA. 042844000 Available from the Federal Quality Institute, P.O. Box 99, Washington, DC. 20044. English GRAI9110 United States. 1520611 PB91-154898

Hard copy of slides presented in a briefing on the Vision 21/Total Quality Management effort at the Defense Communications Agency (DCA). The slides cover DCA background and mission, the creation of Vision 21, the TQM journey, current status, and guiding principles.

214. Delaney, G. L.; Prowse, M. J. "Total Quality Management: Will It Work in the System Program Office Research rept." (May 90). Air War Coll., Maxwell AFB, AL. 001030000 014550 English GRAI9118 United States. 1541954 AD-A234 909/0/XAB

Total Quality Management (TQM) is a relatively new philosophy of management which has high-level Department of Defense support and is presently being implemented in the Air Force. In the Air Force Systems Command, weapon system development and acquisition are carried out in System Program Offices (SPOs), staffed with various functionally oriented specialists supplied to the System Program Director by functional 'home offices' via a matrix management scheme. Can TQM, relying as it does on cross-functional cooperation and on processes which cross functional lines, be effectively implemented in SPOs. This study will answer this question after tracing the TQM philosophy's origins and implementation down to the SPO level and describing a recommended implementation approach.

215. "Department of the Navy Total Quality Management Implementation Plan Quality management (Draft)." (24 Apr 89). Department of the Navy, Washington, DC. 001840000 English GRAI9109 United States. 1517613 PB91-153957/XAB

The report represents the beginning of a fundamental shift in the Navy's approach to leadership and management. It provides guidance for implementation of TQM throughout the Department of the Navy; establishes goals for TQM implementation and for continuation of Total Performance Improvement efforts; includes existing value-added strategies into the TQM philosophy to achieve continuous improvement in the DON (Department of the Navy) acquisition process; and establishes responsibility and publishes the strategies for meeting the goals outlined in the plan.

216. DeYoung, Garrett. "Does Quality Pay?" CFO: The Magazine for Chief Financial Officers. v6n9. 24-34, (Sep 1990). CFO English. 00514226

While US manufacturers have embraced the notion of quality for over a decade, it still is very difficult to measure, track, and report quality programs on a financial statement. The subject of total quality management (TQM) and financial management often seems a bit fuzzy because many of the concepts are just beginning to crystallize. Quality programs generally involve hiring a quality consultant, extensively training all employees, measuring goals, and making alterations to the organizational chart. As evasive as figures on the costs of quality programs can be, most analysts agree that the cost of not doing things right the first time - the price of nonconformance (PONC) - offers a persuasive argument for installing a quality program. On average, PONC runs at least 25% to 30% of sales. Helpful tips for quality-conscious chief financial officers (CFO) include: 1. Go into the plant to find out how things really work. 2. Be prepared for problems. 3. When calculating the initial TQM investment, think of the all-important PONC.

217. "DIPEC (Defense Industrial Plant Equipment Center) Total Quality Management Implementation Plan." (Jul 89). Defense Industrial Plant Equipment Center, Memphis, TN. 095777000 405393 English GRAI9003 United States. 1425219 AD-A212 901/3/XAB

This document outlines the Defense Industrial Plant Equipment Center's, concept and strategy for implementing TQM at all levels within the Command. It includes a methodology for implementation, TQM goals and milestones.  
Keywords: Continuous process improvement. (KR)

218. "DSAC (Defense Systems Automation Center) TQM (Total Quality Management) Implementation Plan." (Jul 89). Defense Systems Automation Center, Columbus, OH. 095780000 420906 English GRAI9003 United States. 1425279 AD-A212 962/5/XAB

This document discusses the implementation of Total Quality Management. It includes TQM concepts, methodology, goals and strategies, and milestones. DSAC's overarching strategic goal is to improve support to the customer.  
Keywords: Continuous process improvement. (KR)

219. Edosomwan, Johnson A. | Savage-Moore, Wanda. "Assess Your Organization's TQM Posture and Readiness to Successfully Compete for the Malcolm Baldrige Award." *Industrial Engineering*. v23n2. 22-24, (Feb 1991). INE English Charts | References. 00538514

Total quality management (TQM) is a competitive strategy involving continuous improvement of products, processes, and services to improve quality, cut costs, enhance productivity, and increase total customer satisfaction. Various methods and tools are used to control production and service processes. Playing an emerging role in the TQM movement is the Malcolm Baldrige National Quality Award, created to recognize quality excellence and promote greater quality awareness. A model for understanding an organization's TQM posture has been developed, along with a 6-stage approach for applying the award criteria at the enterprise level. Among the stages are: 1. current organizational environment assessment, 2. development of quality improvement strategy, 3. assessment of education and training needs, and 4. implementation of quality strategy.

220. EHamson, Ned. "TQM Can Save Nearly \$300 Billion for Nation." *Journal for Quality & Participation*. 54-56, (Dec 1990). QCJ English Charts|Graphs. 00531995

The quality improvement potential (QIP) index is both a tool and an answer for which quality and participation professionals have been searching. As a tool, the QIP index will help each quality and participation practitioner estimate the level of savings a company or agency can expect from a systemwide application of total quality management (TQM). As an answer, the QIP index will enable these professionals to provide hard data to those who are skeptical about the savings quality processes offer. The QIP index could become a valuable factor in quality improvement planning at the business, sectoral, and national levels. The index is based on a model consisting of 4 elements: 1. the gross national product (GNP) by sector, 2. the percentage of total quality cost as a percentage of GNP value by sector, 3. the percentage of total quality cost reduction by sector, and 4. the dollar amount of enhancement from total quality implementation by sector.

221. EHouse, Ed. "Customer-Supplier Partnerships in the IT Market." *International Journal of Quality & Reliability Management*. v7n2. 39-45, (1990). IJQ English Charts|References. 00504808

A new approach to the delivery of information technology (IT) in the manufacturing market has been employed by ICL UK Ltd. This approach is based on the principle of assisting companies to gain significant competitive advantage by moving to world-class status. The approach depends on customer-supplier partnerships, with both parties working closely to assist the company involved in taking major steps forward. At ICL, 4 central constructs underpin the manufacturing philosophy: 1. just-in-time manufacturing, 2. employee involvement, 3. integration, and 4. total quality management. This philosophy does not involve providing hardware and software, which traditionally has occurred; rather, it involves a complete support service, from facilitation of the definition of company strategy to the implementation and achievement of targeted objectives. ICL has moved away from the traditional role of

IT suppliers as hardware or software vendors toward providing total business solutions for customers by defining business needs and problems and offering a total package of assistance to support them.

222. Eisman, Regina. "Government Gridlock." Incentive. v164n1. 24-28, (Jan 1990). IMK English Graphs. 00482436

Government officials and outside analysts believe that the federal bureaucracy's comprehensive productivity and quality program will make it easier for businesses and citizens to deal with agencies. Some say that the cost savings could ultimately cut the deficit and lower taxes. Several billion dollars have already been saved due to employee suggestions and the increased use of principles and tactics borrowed from private industry. Skeptics say real gains are not possible in a bureaucracy, partly because of the size of government. The National Association of Government Employees, the federal workers' union, is generally opposed to merit pay programs, quality circles, and other total quality management (TQM) components. Efforts to improve productivity have intensified with the formation in June 1988 of the Federal Quality Institute, whose mission is to apply the principles of TQM, a customer-driven system that requires extensive employee involvement. The Office of Personnel Management is exploring the idea of using incentives to reward employees.

223. Eubanks, Paula. "Gainsharing: Reveal Financial Data to Employees." Hospitals. v65n13. 74, (Jul 5, 1991). HPT English. 00558964

Quality experts are encouraging administrators to share financial data with lower level employees who are participating in gainsharing and other financial incentive programs. Sharing such data runs counter to long-standing industry tradition, but it enables an employee participating in a gainsharing program to make the connection between an individual's job and the future of the institution. Michael Bice of Allegheny Health System says that employees can relate best to financial basics, such as the bottom line, profit and loss statements, and savings and investment figures. Robert Roeder of William M. Mercer Inc. says that teaching employees how to use financial data to make decisions is a

critical element of sharing financial information. It takes a knowledgeable workforce to be empowered and to understand how quality is truly achieved, according to Roeder.

224. Farquhar, Carolyn R. "Total Quality Management: A Competitive Imperative for the '90s." *Optimum*. v21n4. 30-39, (1990-1991). OPT English Charts. 00556014

The issues facing the 1990s will demand more organizational skills than before. They will also become opportunities for those with a sustainable business strategy capable of coping with change. Total quality management (TQM), whereby everyone in the organization strives for perfection, is more often the solution for companies wanting to meet the challenges of the 1990s. The leadership in organizations must challenge itself to share knowledge and information and encourage all employees to take ownership in the outcome of decisions. The leadership must be willing to commit the organization's resources to TQM, both morally and financially. Employees should be prepared to take charge by using training, relevant information, and suitable recognition. An organization must be made up of people who are able to design and provide products and service that will satisfy the customer on an ongoing basis.

225. Farthing, Dennis. "How Risk Management Is Driven by Insurance." *National Underwriter (Property/Casualty/Employee Benefits)*. v91n44. 9, 14-15, (Nov 2, 1987). NUN English. 00379686

There are 2 reasons why risk management has been driven by insurance: 1. Insurance as a profession embraces the full spectrum of risk management activity. 2. The other disciplines involved in risk management generally are limited to specialist areas of loss control, concerned with such day-to-day activities as safety and security. Risk managers always have been inclined to turn to the insurance mechanism rather than to the other tools of risk management as a solution to their problems. If risk managers had pursued total quality management as the primary means of managing liability risks, the liability crisis might have been avoided. Change is being given impetus by the increasing realization that risk control is essential if the business is to survive.

Risk managers are being forced to look more to the neglected elements of risk management: risk analysis and risk control. Advances in information technology provide risk managers with the tools needed to better manage their businesses.

226. Finley, Michael. "The Power of X-Y Grids." *Quality Progress*. v24n10. 102-107, (Oct 1991). QPR English Graphs/References. 00577940

The Malcolm Baldrige National Quality Award has given exposure to the idea of total quality management (TQM), a process in which people share insights about and ideas for continuous improvement. This process often is flawed because, when quality meetings are low quality, they are not efficient, effective engines of organizational change. Electronic meeting systems (EMS) are available to keep Baldrige Award, TQM, and other teams focused on a common goal. EMSs can be: 1. single personal computer (PC) programs run by an individual while other people provide input, 2. laptop computers and voting keypads for everyone participating in the meeting, and 3. a dedicated meeting room in which everyone has a networked PC for simultaneous input in a common document. An X-Y grid can depict the scope of opinion within a group, with X and Y representing any 2 values that the groups want to compare. There are 3 basic X-Y graphics: 1. overall average of a group's votes, 2. the scatter of individual votes, and 3. subgroup votes.

227. Fitz-enz, Jac Rodgers, James. "Get Quality Performance from Professional Staff." *Personnel Journal*. v70n5. 22, 24, (May 1991). PEJ English. 00548714

The principles and processes of total quality can be applied to managerial and professional performance. The total quality approach strips away ambiguity, improves communication, fosters better performance, and improves customer relations. This works in any staff function for professionals from human resources and accounting to management information systems and marketing. The most effective approach is to start by clarifying the quality requirements of the end result. Focusing on the product allows the professional the space to exercise some personal judgment and skills to accomplish that

objective. The total quality approach dictates that the specifications, measures, and perhaps the work process itself must change to adjust to changing requirements. Although the purely creative aspects of some professionals may not be subject to process measurement, the majority of professionals and their managers can be held accountable for quality standards in applications work.

228. Forbes, Christine. "Buyers & Distributors: It's Time for Teamwork." Industrial Distribution. v80n10. 20-24, (Aug 1991). IND English Charts\Graphs. 00567641

Both purchasing managers and distributors agree that distribution and purchasing are playing on a different field with an entire new set of rules and equipment. The industry has changed from one of primarily inventory management and sales to value-added and total quality management. A trend called total cost is fueling the move toward a smaller supplier base, which is the most profound change that has taken place in the industry. Cost and efficiency are advantages of a tighter supplier base, but an additional benefit is partnering. By cutting the supplier base, companies have the opportunity to develop stronger relationships or partnerships. Distributors and purchasing professionals agree that many factors prompted the emergence of the partnering trend. One of the factors is the growing emphasis on value-added services. In a survey conducted by Purchasing magazine, the most important demand from customers is quality.

229. FRAZELLE, SANDRA J. (Rockwell International Corp., Seal Beach, CA). "Eliminating waste in the test processes." IN: Aerospace Testing Seminar, 12th, Manhattan Beach, CA, Mar. 13-15, 1990, Proceedings (A91-29689 11-38). Mount Prospect, IL, Institute of Environmental Sciences, 1990, p. 11, 12, (1990 9000). English United States IAA9111 AIAA/TIS. 1764980 A91-29692

The management approaches used in an effort to reduce waste during the testing phase of an aerospace manufacturing program (for the Navstar GPS satellite) are briefly discussed and illustrated with diagrams and flow charts. Particular attention is given to the application of Total Quality Management principles in a process environment, techniques for acquiring



accurate process data in a timely fashion, and strategies for overcoming employee resistance. T.K.

230. Freilich, Esther. "Fellow Conference: Linking Quality, Productivity." *Healthcare Executive*. v6n2. 32-33, (Mar/Apr 1991). HEE English. 00551541

The issues of improving quality and productivity were addressed during the 1990 Fellows Conference, *Linking Quality and Productivity: The 1990s Competitive Advantage Imperative*. Increasing patient care and management effectiveness while improving profitability is not a matter of considering quality as a function of doing more, according to Stuart A. Wesbury, Jr., of the American College of Healthcare Executives. Rather, quality is a condition of doing things better. Daily control, which is based on the concepts of continuous improvement, innovation, and standardization, helps each unit in an organization be the best that it can be, according to Bob King of GOAL/QPC. Health care executives should be teachers, coaches, and facilitators for their staffs, according to Marie Sinioris of Rush-Presbyterian-St. Luke's Medical Center. Moving total quality management from the concept of a fad to a revolution involves securing the commitment of top management and getting employees involved, according to John Nackel of Ernst & Young.

231. Freundlich, Naomi Schine, Eric|Smith, Geoffrey|Carey, John. "Research & Development: Getting Everybody into the Act Weapons to Plowshares "A Warm Feeling Inside" "The Courage to Fail"." *Business Week*. Special Issue. 148-160, (Oct 25, 1991). BWE English. 00578285

Hundreds of companies, such as Alcoa, are starting to apply total quality management to their research laboratories. The objective is to break down the barriers between researchers hunting for discoveries and others further down the product-development line. Companies, including Westinghouse Electric Corp., are trying to move faster and trim expenses using multidiscipline teams that reduce cycle time. The biggest challenge in implementing quality in a research lab is getting the message across to scientists. Sandia National Laboratories president Al Narath has launched an ambitious quality program that is designed to do everything from accelerating the lab's research projects to improving the

handling of hazardous wastes. Corning Inc. considers its quality program a key element in its emergence as a leader in markets heavily contested by the Japanese. At the cutting edge of research there are 2 seemingly conflicting definitions of quality. Steven A. Rosenberg of the National Cancer Institute is meeting those definitions in his work in the battle against cancer.

232. Gibson, Thomas C. "Helping Leaders Accept Leadership of Total Quality Management." *Quality Progress*. v23n11. 45-47, (Nov 1990). QPR English. 00524632

Although quality professionals are increasingly ready to help their organizations launch and implement total quality efforts, they are often unable to apply their knowledge and skills. These quality professionals are stymied because the leaders they serve have not gone beyond lip service to the total quality effort. The few US companies that have succeeded in making total quality work for them today have done so because of strong leadership. Quality professionals can break down the traditional barriers of rank and politics and talk honestly with their leaders about the importance of the leader's role in the success of the quality improvement effort. Leaders generally feel that they manage costs effectively and are likely to be resistant to change. However, quality professionals can provide their leaders with the information they need to make judgments about the quality of their operations. They can help leaders set the basic requirements and measurement standards for their staffs at the beginning of the quality effort, and they can help them achieve visible success.

233. Gibson, Thomas C. "The Total Quality Management Resource." *Quality Progress*. v20n11. 62-66, (Nov 1987). QPR English. 00381855

DuPont's Polymer Products Department has installed a total quality management (TQM) process. While implementing TQM, the company realized that it would need to actually change the way people think and act. A number of months were spent trying to determine how to do this. DuPont learned that, as managers realize that they are being judged on how well operations are improved, they seek someone to teach them about cost of quality and

other improvement methods. What results is an honest, management-driven effort to put in place the people who will become tomorrow's quality professionals. TQM is a process for change and improvement applicable to all aspects of the organization. In seeking the end product of business excellence and worldwide competitive leadership, DuPont emphasizes: 1. customer focus, 2. safety, 3. quality, 4. an open operating environment, and 5. international scope. Operating principles have been written concerning these areas. The TQM resource is responsible for teaching workers how to live by these principles, and it does so by offering methods for identifying areas for improvement and eliminating chronic problems, as well as maximizing product consistency.

234. Glenn, Tom. "The Formula for Success in TQM." *Bureaucrat*. v20n1. 17-20, (Spring 1991). BUR English. 00550258

Customer focus, leadership, teams, and tools can be combined to equal total quality management (TQM). In TQM, the word customer has taken on a new meaning: the beneficiaries of government bureaucrats' work. When transformation of the organizational culture is being considered, continuous improvement efforts should be aimed at quality as defined by the organization's customers. Once it is known what the customers want and the gap between their requirements and performance is understood, then quality improvement teams can be created to start the process. Before teams can be effective, they need training, facilitation, leadership, and support. Support from a quality council is decisive in the success of quality improvement teams. Skilled management, as well as leadership, will make the difference. Support begins with a well-crafted charter consisting of a problem statement and a mission statement.

235. Hames, Richard D. "Total Quality Management: The Strategic Advantage." *International Journal of Physical Distribution & Logistics Management*. v21n4. 9-14, (1991). IPD English Charts/References. 00575065

Total quality management (TQM) requires: 1. a different perception of what quality is and how it is defined, 2. a new appreciation of the impact of quality on productivity, cost, and competitiveness, 3. a different view of who is responsible for quality, and 4. a new understanding of

how quality is achieved. The links between quality, cost, and competitiveness are forged within an organization by people working together in synergy. The 4 dimensions of quality are: 1. fitness for purpose, 2. quality of conformance, 3. quality of work life, and 4. quality of leadership. There are 3 basic approaches that can be used to achieve quality improvement: 1. the reduction of process variation through statistical process control, 2. quality process improvement, and 3. quality function deployment. Increasingly, organizations are discovering that they need to integrate these approaches into a customized model that will work for them.

236. Hammons, Charles Maddux, Gary A. "Total Quality Management in the Public Sector." *Management Decision*. v28n4. 15-19, (1990). MGD English. 00509023

The US is in serious trouble with respect to national productivity. To resolve this dilemma, the US must rely not only on the private sector, but on the public sector as well. The implementation of a new managerial philosophy, total quality management, requires fundamental changes in many managerial attitudes, along with the elimination of many prejudices and preconceived ideas pertaining to the work environment. Quality must be incorporated into the design of products. There must be cooperation within and among departments, as well as cooperation with external entities. Employees must be treated as the most important resource. The public sector manager should take action to implement positive change in the workplace. There are no quick solutions to problems; training, education, trust, and cooperation are long-term activities. While their benefits are substantial and lasting, they are not instantaneous.

237. HAUSSMANN, AL; DEPHILIPPIS, BOB Aerojet, Propulsion Div., Sacramento, CA). "The Process Team concept." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 27th, Sacramento, CA, June 24-26, 1991, 5 p, (1991 9106). English United States IAA9117 AIAA/TIS. 1783032 A91-41692

The organizational responsibilities and operational aspects of the Process Team concept are presented. The overall objective of the Process Team is to

reduce the time to complete an operation or to reduce the span time of a product by utilizing cost-effective total quality management principles and practices while meeting customer requirements. Organizations that have properly implemented this process team concept have achieved improved quality, safety, cost, and schedule performance while experiencing improved morale. R.E.P.

238. Heller, Karen. "Changing a Company's Mind-Set." *Chemical Week*. v149n8. 48-49, (Sep 25, 1991). CEM English. 00572280

Chemical process industries (CPI) executives decide to institute quality management techniques for many reasons, one of which is to improve operations. Consultant groups, such as Philip Crosby Associates (PCA), often assist CPI firms in the establishment of quality management. PCA's Larry McFadin says that the hardest task is getting management to accept that quality is their responsibility. Chemical companies can use quality techniques to meet environmental pressures. Defining customers is key in instituting quality processes, and the chemical industry is realizing that the general public is one of its customers. Total quality management and the Chemical Manufacturer's Association's Responsible Care programs work well together. Both have continuous improvement as a fundamental premise and are self- and peer-regulating.

239. Herrington, G. M. "The Catch-22 of Total Quality Management." *Across the Board*. v28n9. 53-55, (Sep 1991). CBR English. 00573526

Total quality management requires a change in the behavior of the individuals in a company. For this culture change to occur, senior managers must dismantle and change themselves. The Catch-22 is that the senior managers who must personally change in order to instill a total quality environment may have the most to lose if the change succeeds; they have been promoted and rewarded in the entrenched culture. Three conditions have yielded success in total quality management: impending financial collapse, demanding customers, and "born-again" senior managers. If a company is not subject to the first 2 conditions, senior managers can take the following steps to achieve total quality management: 1. Study

- the leadership activities of the executives of excellent companies. 2.
- Obtain and read the Malcolm Baldrige National Quality Award criteria. 3.
- Talk with quality experts and consultants. 4. Commission a customer survey.
5. Conduct an employee survey.

240. "How to Develop Quality Measures That Are Useful in Day-to-Day Measurement Quality management (Final)." (Jan 89). Office of Management and Budget, Washington, DC. 012565000 English GRAI9110 United States. 1520631 PB91-155150/XAB

The report contains a paper prepared by staff of the Federal Quality and Productivity Improvement Program in the Office of Management and Budget to provide information on constructing useful quality measures. The paper describes step-by-step methods that can be used, and provides examples of quality measures that are being used in both private and public sectors.

241. HUBBARD, ROBERT U. S. Army, Washington, DC); MORRIS, JIM Boeing Co., Seattle, WA; Sikorsky, Aircraft Stratford, CT); ALTO, RONALD LightHelicopter, Turbine Engine Co., Saint Louis, MO). "Light Helicopter/Comanche program update - The LHTEC T800 and Boeing Sikorsky Comanche design solutions." AIAA, AHS, and ASEE, Aircraft Design Systems and Operations Meeting, Baltimore, MD, Sept. 23-25, 1991. 12 p, (1991 9109). English United States IAA9123 AIAA/TIS. 1801320 A91-54008

Important technologies incorporated into the LHTEC T800 engine and the winning Boeing Sikorsky Comanche weapon system designs are addressed in detail. Both LHTEC and the Boeing Sikorsky team are taking advantage of advanced technologies, in conjunction with MANPRINT, total quality management, and concurrent engineering principles, to significantly improve producibility and supportability. This balanced approach of incorporating advanced technologies is considered to provide a quantum improvement in Comanche war fighting effectiveness, as compared with existing Army helicopter alternatives. O.G.

242. Hughes, W. E. "Management of Variation and TQM Final rept." (Jul 91). Army Strategic Defense Command, Huntsville, AL. 090746000 398346 English GRAI9122 United States. 1555388 AD-A238 399/0/XAB

Variation has been studied by statisticians and scientists for decades. Although variation is not a new concept, what is new is the awareness that variation affects everyday activities in the workplace. Modern man is plagued with variation problems ranging from raw materials to finished products and services. No matter how precise our methods of producing products and providing services becomes, there will always be some degree of variation. Today's thrust toward the Total Quality Management (TQM) concept will include the understanding of variation. In fact, the concept of variation may be analyzed in each of Deming's 14 points. Future variation issues will include the understanding and management of people.

243. Hull, Kevin Neptune, Dean. "The Data Quality Objectives Process." Journal for Quality & Participation. v14n5. 72-78, (Sep 1991). QCJ English Charts/Graphs. 00576575

Inattention to management practices often prevents total quality management (TQM) from being authentically "total." Members of the US Environmental Protection Agency's (EPA) quality assurance program seek to improve the quality of the agency's decision making. The program's decision management tool, the Data Quality Objectives (DQO) process, is a full set of qualitative and quantitative constraints needed to specify the level of uncertainty that a manager can accept when making a decision based on data. The DQO process emphasizes up-front planning, communication, and teamwork. It is inherently heuristic and is designed to teach participants by leading them through a logic flow featuring a structured sequence of activities. One of the advantages of the DQO process is that it produces sounder and more defensible decisions in the public interest.

244. Hyde, Albert C. "Rescuing Quality Measurement from TQM." *Bureaucrat*. v19n4. 16-20, (Winter 1990-1991). BUR English References. 00534615

If total quality management (TQM) is to avoid the fate of previous management systems that promised true reform and failed, it will have to address some major operational demands and de-emphasize the philosophy and publicity surrounding it. The Federal Quality Institute identifies several key factors that determine successful quality efforts and shape the process. These include top management support, customer focus, long-term strategic planning, employee training and recognition, employee empowerment and teamwork, measurement, and quality assurance. So far, the primary focus of numerous TQM efforts has been the elevation of worker and management attitudes and levels of awareness about the significance of quality in the workplace. If TQM is to work, it will have to address the most obvious lessons: 1. Measurement systems will need to be in place and accessible to all levels. 2. Employees must be involved in developing measurement systems. 3. Work must be started on reforms of work redesign, compensation, performance evaluation, and training and development systems to complement a quality management process.

245. Ingman, Lars C. "The Quality Audit." *Pulp & Paper*. v65n10. 125, 127, (Oct 1991). PUP English. 00577918

The quality audit is a process that helps uncover new opportunities and remove barriers that might impede continuous improvement progress. The quality audit is at the heart of the ISO 9000 standards from the International Standards Organization. Companies serving Europe will want ISO 9000 certification by 1992. Top executives, mill management, and operations people must go into the quality audit with the objective that everyone is to benefit from the experience. Quality audits are best planned, orchestrated, and conducted by one person - the lead auditor. The entire auditing process should be one of directed informality. Bureaucracy is out of place in a quality audit meeting. Audits are conducted to verify that all quality system elements - procedures, processes, and people - are functioning effectively.



246. Irving-Monshaw, Susan. "Quality Advice: Listen to Your Customers." *Chemical Engineering*. v97n6. 27-30, (Jun 1990). CEG English. 00503494

Total quality management (TQM) has come to represent different techniques at different firms. The American Society for Quality Control's president, John Condon, says that TQM programs vary depending on the industry, corporate culture, markets, and technology. TQM is used to manage or supervise a quality program and serves as an adjunct to a conventional quality program. Among its basic principles, the customer always comes first. Overall, the goal of TQM is to change the corporate culture of a company by creating an environment in which quality awareness can flourish. Planning for quality is evolving into a formal structure involving extensive participation as well as joint planning with both customers and suppliers. Perhaps the most important part of any program is for top management to define a corporation's vision for a quality strategy. According to Dow USA's Gary Veurink, employee training and education are vital for developing quality awareness and for transmitting skills and knowledge.

247. Isbell, Ted S. "Is "Paperless TQM" an Oxymoron?" *Industrial Engineering*. v23n6. 30-31, (Jun 1991). INE English References. 00556797

In early engineering courses, most engineers learned that simplicity is elegance. Contrary to popular belief, automation is not necessarily equivalent to simplicity and flexibility. Paperless and lightless systems tend to remove the engineer-production worker from the product. The essence of process paradigm shift is the mixing of both the new and the old to produce a continually improving product or service. In many cases, automation and computerization have reduced product and process flexibility. Achieving synergism between flexibility and the automation computerization syndrome may require a stepwise approach. Concurrent engineering philosophy needs to be incorporated into computerized and automated systems. Product design engineers should also spend equal time with the customer at the customer's facility. The same requirements should exist for those who design the automated systems that make products and the computerized databases that track processes. A psychological

bonding between designers, automators, and production workers and the product they produce should be developed.

248. Jenkins, C. Gordon. "How to Succeed by Really Trying - The Sequel." Security Management. v35n10. 56-57, (Oct 1991). SEM English. 00576681

The February 1987 issue of Security Management magazine included an article entitled How to Succeed by Really Trying. Today's preeminent management term, total quality management, espouses much the same philosophy as the 1987 article, which pointed out that everyone has a responsibility for determining their own future and that, by developing a plan, the chances of realizing career goals can be enhanced. The only way to avoid frustration is to set intermediate, achievable goals. Finding the stepping stones on the career path requires that one use energies represented by these key concepts - preparation, initiative, and imagination. For example, if an opportunity comes along, one should seize it. Constant improvement is essential for continued growth. Growth also depends on the ability to think.

249. Johnson, Donald E. L. N-, Health Care Strategic Management. "Thorough Planning Critical to Total Quality Management." v9n7. 2-3, (Jul 1991). HCT English. 00558936

Planning and marketing departments are playing important roles in implementing total quality improvement programs in institutions and in positioning hospitals as high-quality, cost-effective providers. A planning department's role in total quality improvement can range from helping top management decide to emphasize total quality management (TQM) to helping product line managers and department heads plan their specific continuous quality improvement (CQI) strategies. For hospitals in which TQM is a new concept being fostered by the chief executive officer, planners must encourage the basics by: 1. training top management and all current and new employees as they come aboard, 2. developing basic quality indicators and quality indicators for different types of organizations, 3. developing strategies for recruiting top performers at all levels, 4. communicating TQM goals and benefits to

employees, physicians, and patients, and 5. promoting TQM and CQI to important publics.

250. Johnson, John G. "Successful TQM Is a Question of Leadership." *Journal for Quality & Participation*. 16-20, (Jun 1990). QCJ English. 00504173

If top managers want to achieve total quality management (TQM), they must put it at the top of their agendas. A TQM leader must head up efforts to develop reward systems that reinforce the new TQM values. Most important, leaders must make the necessary and visible adjustments to their own behaviors, expectations, and values. If TQM is to succeed, top managers have to operate on the assumption that rational adult people, when told what is expected of them, will prefer to do those things that will get them rewarded and recognized rather than things that will get them criticized and punished. Then, top managers have to believe and behave accordingly and establish procedures that back up those beliefs. Cultural change in an organization requires a lot of patience and time to unlearn old habits.

251. Johnson, John G. "Why Aren't Our Managers Better Leaders?" *Tapping the Network Journal*. v2n1. 2-4, (Spring/Summer 1991). TNJ English. 00573232

A total quality management culture will demand that all layers of management have both highly developed management and leadership skills. It is the responsibility of corporate management to create a cultural environment where knowledgeable people are empowered to improve their particular work and where there is a system of measurements and rewards that will tell them how they are doing. This new work culture begins with the articulation and acceptance of a vision for the organization. Then, a consensus must be developed on the basic values to be observed by the organization. Once values are defined, managers should support them and, through their behavior, inspire others to do the same.

252. Johnston, L. W. "TQM Coordinator as Change Agent in Implementing Total Quality Management Master's thesis." (Jun 89). Naval Postgraduate School, Monterey, CA. 019895000 251450 English GRAI9003 United States. 1425364 AD-A213 051/6/XAB

The implementation of Total Quality Management involves a major change, a paradigm shift, in management philosophy. Implementing TQM requires the use of a change agent to act as a catalyst to change the organization. Interviews with TQM coordinators, and a survey of 143 organizations were done to examine the role of the TQM coordinator. Research identified criteria for selection, and location in the organizational structure. Use of an external consultant in a tem concept is examined. Resistance to change and overcoming that resistance are explored. Ways to measure success are discussed. Keywords: Theses, Total quality control; Methodology; Surveys. (KR)

253. Knorr, Robert O./Thiede, Edward F., Jr. "Making New Technologies Work." *Journal of Business Strategy*. v12n1. 46-49, (Jan/Feb 1991). JST English. 00532934

New technologies have resulted in astounding increases in quality, productivity, and customer satisfaction. Companies in manufacturing, service, and information industries have been reaping the benefits of improvements in these areas. In particular, corporate America is emerging from its initial experience with such new technologies as concurrent engineering, flexible production-manufacturing, just-in-time cycle time reduction, and total quality management. Three major strategic changes needed in order for these technologies to succeed are: 1. the adoption of an enterprise viewpoint that includes customers, suppliers, distributors, and makers of complementary goods and services, 2. an emphasis on production as the hub of the enterprise, and 3. the structuring of the enterprise to respond quickly to the full spectrum of customer demands at ever higher levels of performance. Industry leaders are shifting to radically different ways of thinking as they adopt the new technologies. At the core are 4 revolutionary changes: simultaneity, flexibility, self-management, and continuous improvement.

254. Koons, Paul F. "Getting Comfortable with TQM." *Bureaucrat*. v20n2. 35-38, (Summer 1991). BUR English. 00563471

For the Philadelphia Regional Office of the Department of Veterans Affairs, total quality management (TQM) involves the development of a systematic approach that managers, with the help and assistance of the front-line employees, can use to improve the quality of the services and end products it provides. The office has learned via training that most employees believe that they are doing a good job and thus, if they are to improve the quality of their work, they will have to be told how to do it. While employees should have some control over their job and their experience can be invaluable in improving work processes, there is an essential role that management must fill in directing and guiding the TQM process. One of the problems cited with quality circles in some organizations is that employees who are left on their own to identify problem areas frequently choose working conditions and environmental issues, rather than work process issues and problems. Managers must ensure that team efforts are focused on the organization's goals and objectives.

255. Krone, Bob. "Total Quality Management: An American Odyssey." *Bureaucrat*. v19n3. 35-38, (Fall 1990). BUR English References. 00529970

In a panel discussion, 6 Americans discussed total quality management (TQM). Customers' needs and expectations drive TQM systems. McDonnell Douglas Astronautics Co.'s Gil Mosard said that, for his company, TQM has 4 major elements: customer satisfaction, supportive cultural environment, people teams and partnerships, and disciplined systems and processes. According to the University of Southern California's Bob Krone, if TQM can be successfully implemented in US industry, government, defense, and education, there will be a profound positive improvement in US total national security and stability. The largest barrier to implementation of TQM for Americans may be patience. Successful quality programs take time and tenacity. Mosard said that the only way TQM will be effective in the US is if there is a partnership between the academic world, the business world, and the government world to teach and implement it.

256. KURSTEDT, H. A., JR.; MALLAK, L. A.; HOWARD, E. M.; KURSTEDT, P. S. "Why engineers must know and manage organizational culture." (1990 9000). Virginia Polytechnic Inst. and State Univ., Blacksburg. English United States STAR9120 DOE. 1793750 N91-29071 DE-FG02-88DP-48058

The engineering manager's success is being judged more and more on qualitative measures concerning the human elements of their work. These new measures require engineers to become as skilled and at ease with the tools, methods, and techniques for qualitative issues as they are with more traditional quantitative tools, methods, and techniques. To achieve success toward these qualitative measures demands nothing short of a new way of thinking, indeed a new culture embodying new values and traditions. Engineering managers must use culture change mechanisms along with their other management tools so they can better understand and manage culture. They must view concepts such as just-in-time, total quality management, and continuous performance improvement as integral to culture change efforts; these concepts and corresponding programs require an underlying culture to create an environment for change. Engineers who want to manage and change culture and communicate these changes must become comfortable with hoopla and symbolism to add drama and life to their words and plans. Engineers must understand the elements of culture, become effective communicators, and master the tools, methods, and techniques of culture change. DOE

257. Kwok, Daniel. "TQM and Australian CEOs." Quality. v29n11. 14-15, (Nov 1990). QUA English. 00523554

Although quality control using statistical analysis is common among Australia's manufacturers, awareness of total quality management (TQM) doctrine as a tool for service and manufacturing industries remains relatively low. According to a recent survey of 320 chief executive officers (CEO) of major Australian organizations, the most commonly experienced barriers to implementing and maintaining TQM programs were: 1. convincing management and staff of the long-term value, and 2. competing demands on time for the CEO and other managers in the organization. Some major corporations are implementing companywide TQM, including such multinationals as Fisher Controls, Amdahl, and Union Carbide. The survey also highlights that intense competition has forced many

companies, particularly manufacturing exporters, to adopt TQM. It became apparent shortly after entering the Asian markets that there is a distinct relationship between quality improvement and survival, says Kevin Miller of Containers Packaging, a food and beverage can manufacturer.

258. Labovitz, George H. "The Total-Quality Health Care Revolution." *Quality Progress*. v24n9. 45-47, (Sep 1991). QPR English. 00574338

As a result of concerns about US competitiveness, total quality management (TQM) has been adopted in the health care field. The TQM approach starts with the assumption that most problems are interdepartmental. A critical part of the TQM approach is having the problem-solving team incorporate not just decision makers, but also the people involved in the problem. A TQM training program begins with an organizational assessment that includes an evaluation of the organization's critical quality issues. Next comes an analysis of the critical management processes. Consultants and managers begin to process the data and develop a vision statement and an implementation plan for TQM. This step is critical because it determines what will be done after the initial enthusiasm of starting a new process fades. The plan spells out timetables, success factors, roles and responsibilities, how to get started, and outcome measures. The final step is to train the entire staff in quality awareness and quality problem-solving skills.

259. LaPlante, Alice. "Global Information Officers Entering IS Picture." *Computerworld*. v25n33. 70, (Aug 19, 1991). COW English. 00567247

As more US corporations grow international in scope, top information systems (IS) executives are finding that they must take a more team-oriented, cooperative approach to solving complex technological and organizational issues. Companies unable to optimize their IS resources on a global scale will find themselves at a significant competitive disadvantage. Problems that skilled global information officers are expected to address include: 1. the duplication of high-cost systems development efforts at multiple sites, 2. the implementation of systems incapable of connecting to each other or to the main data center

without hassle and expense, and 3. the inability to serve the strategic business needs of a worldwide organization in a timely manner. Global information officers must balance the need for some sort of global IS game plan with a decentralized and flexible management style.

260. Lavy, Nachman. "The View from Israel . . . Quality for Competitiveness." *Journal for Quality & Participation*. v14n4. 86-87, (Jul/Aug 1991). QJ English. 00569198

Several shared characteristics between Israeli managers and employees, such as democracy and equality, sharing and collaboration, and personal opinion, have made the Israeli culture and tradition suitable for successful implementation of participation in producing quality. In the early 1980s at Periclas - Dead Sea, a chemical manufacturing company that exports 100% of its output, the first quality circles in Israel began to function. The Institute of Productivity helped Periclas' management to implement quality circles. By the late 1980s, about 50 organizations in Israel had quality circles; a portion of these began implementing total quality management (TQM). The foundation of the Israel Quality Circles Society and the success of previous implementations proved to be the catalysts for this change in Israel. Companies that demonstrate the characteristic of those implementations are Electro-Optical Industries, Motorola Israel, and Teva Pharmaceutical Industries.

261. Laza, Robert W./Wheaton, Perry L. "Recognizing the Pitfalls of Total Quality Management." *Public Utilities Fortnightly*. v125n8. 17-21, (Apr 12, 1990). PUF English Charts|Graphs. 00492665

Ample proof exists that total quality management (TQM) can provide significant cost benefits by improving use of material, optimizing employees' time, avoiding lost sales, and using capital more effectively. However, the TQM process is not without its dangers. Some of the pitfalls include: 1. oversimplification and underestimation of the difficulty of bringing about cultural change, and 2. an overemphasis of technical tools at the expense of leadership and management issues. Before initiating a TQM program, utility executives should make a self-assessment that provides a portrait of the company from



a TQM perspective. This self-assessment involves: 1. developing a customer satisfaction profile, 2. performing quality assurance reviews of functional areas, 3. determining resource utilization, and 4. assessing leadership and planning. The profiles will identify specific internal areas that are operating less than effectively or that are erecting barriers to cost-effective operations. These profiles are the baseline on which to develop realistic strategies.

262. Leibson, Beth. "Karl Fagans Manages with Total Quality." *Facilities Design & Management*. v10n6. 52-55, (Jun 1991). FDM English Charts. 00554848

Arthur D. Little Inc. (ADL) is a management and technology consulting firm with offices around the world. Managing such a diverse enterprise is not an easy task, according to Karl Fagans, vice-president of support services and real estate. Managers cannot contribute to handling this diversity using traditional management practices and systems. To support and spur the continuous flow of innovation, ADL has adopted a rather unusual managerial philosophy. The focus is on clients; the method is cooperation; and the buzzword is total quality management, an updated version of participatory management. Egalitarianism is the rule at ADL, and that attitude permeates nearly every detail of the organization, from the physical structures to the organizational design. ADL is highly matrixed, according to Fagans. Consultants report to a series of practices, directorates, and profit-and-loss centers, all intended to keep ADL employees client- and market-driven. As supervisor to 155 full-time equivalents, Fagans applies ADL's management philosophy thoroughly.

263. Long, Ralph F. "Protecting the Investment in People - Making Training Pay." *Journal of European Industrial Training*. v14n7. 21-27, (1990). JEU English. 00525434

All UK organizations should have a meaningful investment in a properly planned program of training for the future. Training must become the responsibility of line management. Training departments must become self-financing, with costs recoverable by an increase in efficiency, productivity, and quality. The essence of the problem-centered approach to

learning is for the trainer to become a facilitator of the learning that falls out from and underpins the process of resolving the most pressing problem currently facing the organization. The problem-centered approach lends itself to other areas of the company not directly connected with training, such as strategic and operational planning and team development at all levels. Benefits to be gained from the problem-centered approach include: 1. value added to performance, 2. real-time solutions to real-time problems, 3. high motivation, commitment, and energy directed toward achievement, 4. creation of teams of possibility-thinkers, and 5. creation of a total quality management culture.

264. Lord, Chilver Heap, John. "Total Quality Management." Management Services. v34n6. 6-10, (Jun 1990). MNS English. 00502933

The UK's Institute of Management Services is working to develop its role in promoting the concept of total quality management (TQM) in the 1990s. TQM will enable a workforce to undertake the right work and do it right the first time. Management needs to become an interactive process among people working together to satisfy common objectives of customer satisfaction and company goals. The cost of quality nonconformance amounts to 25%-30% of turnover; this cost drains a company's profitability and significantly affects its competitiveness. TQM satisfies customers through the quality of products and services supplied. The Institute should consider its position on TQM, promote its policy on the issue, and publish articles in order to inform the membership on TQM issues. In a reply, John Heap stated that the Institute's role must be to provide the opportunity for its members to obtain the knowledge they will require to be part of this new effort, through its education and training programs and specialist group activities.

265. Lorinc, John. "Dr. Deming's Traveling Quality Show." Canadian Business. v63n9. 38-42, (Sep 1990). CB English. 00516291

In 1950, W. Edwards Deming taught the Union of Japanese Scientists and Engineers the theory of total quality management. According to Deming's teachings, quality is the predictable absence of error. It is a customer-oriented result achieved only when management decides to work out

system-bound flaws in production rather than blame employees for poor workmanship. It is a never-ending process of continuous improvement that will lower costs and improve productivity and, finally, profitability. John Perry, vice-president of training and quality development for Canada's Reimer Express Enterprises Ltd., discovered that employees spend 40% of their time fixing mistakes. When he returned from one of Deming's 4-day seminars, he had no trouble selling the ideas to top management. Reimer established a quality steering committee and devised a 7-stage plan that called for extensive training programs, a means of measuring mistakes precisely, and channels of communication to let employees know what is going on. Employees are encouraged to make suggestions without fear of reprisal. Since implementing Deming's teachings, Reimer's proportion of revenue used to cover damaged freight has dropped to half the industry average.

266. Maddux, Gary A. | Amos, Richard W. | Wyskida, Alan R. "Organizations Can Apply Quality Function Deployment as Strategic Planning Tool." *Industrial Engineering*. v23n9. 33-37, (Sep 1991). INE English Charts. 00572664

Total quality management (TQM) has introduced an array of simple and complex tools into the workforce. One tool receiving notice as a result of the shift toward a TQM philosophy is quality function deployment (QFD). QFD's fundamental objectives are to identify the customer, what the customer wants, and how to fulfill the customer's wants. The Production Engineering Division (PED) of the US Army Missile Command used QFD in formulating a strategy to implement and manage a program called Production Engineering (PE) Tools. After an initial brainstorming session in which the customers of the product were identified, the QFD team defined the quality characteristics, or technical requirements, that would be necessary to meet the customers' needs successfully. Based on the results of the QFD exercise, PED management can now develop a more coherent strategy for implementing the PE Tools program.

267. Maher, Dan. "Service Guarantees: Double-Barreled Standards." Training. v28n6. 27-30, (Jun 1991). TBI English. 00555279

In an age in which quality is defined as meeting or exceeding customer expectations, exceptional service is best accomplished by training the customer. There is no better way to train customers than with a service guarantee, a simple vow to deliver error-free service. Service guarantees set criteria for customers and create a standard to which workers can be trained, thereby ensuring that the company delivers premium-quality service. Hollow promises or guarantees for less than the customer already expects do not work. A guarantee must be a value-added part of a company's service. It must be unrestricted, specific and clear, meaningful, hassle-free, and quick to pay out. In general, companies that guarantee their services have not been hit excessively by payouts, and they have reaped significant benefits in increased efficiency, customer retention, and employee morale. Guarantees have helped companies find the roots of service delivery problems, leading to greater success - and fewer payouts - as a program continues.

268. Majumdar, Amit Smolenyak, Megan/Yencho, Nancy. "Planting the Seeds of TQM." National Productivity Review. v10n4. 491-497, (Autumn 1991). NLP English. 00574267

Great challenges face a company locked in a regulated climate. Even under such trying circumstances, many corporate entities have found the key to competitive success in the implementation of a total quality management (TQM) program and philosophy. The Steel Authority of India Ltd. (SAIL) is one such company that is currently undergoing a total quality transformation. Poor quality had cost the company in terms of greater inventory, scrap costs, and by-product ratings, and therefore values had been degraded. SAIL's new companywide TQM program focuses on quality of products and services, human resources, continuous innovation, customer service and satisfaction, and capitalization of corporate resources.

269. "Managing Quality and Productivity in Aerospace and Defense." (Nov 89). Virginia Productivity Center, Blacksburg, VA. 088364000 417206  
Superintendent of Documents, GPO, Washington, DC 20402. PC \$15.00.  
Microfiche furnished to DTIC and NTIS users. English GRAI9007 United States. 1434213 AD-A215 186/8/XAB MDA903-85-C-0237

This document has been designed to provide management teams and leaders in the aerospace and defense (A&D) contracting community with state-of-the-art and practice quality and productivity management concepts, theories, strategies, and techniques. The document is the product of a five-phase, six-year study funded by the DoD; a multi-disciplinary and diverse group of A&D contractors, academicians, military service acquisition elements of the DoD, and the Defense Systems Management College were involved. A simple, conceptual model around which the document is designed is used to facilitate understanding of the quality and productivity management process. The document begins with challenges facing the A&D contractor community. Next, the importance of the need for visions of the organization of the future are discussed. The document then turns to an innovative and effective way to strategically plan for performance improvement. A conceptual overview of present, emerging, and future improvement strategies and techniques is presented; emphasis is placed on Total Quality Management, the management of participation, and gainsharing, Measurement theory, approaches, and techniques are presented. Reflections on continuous improvement and maintaining excellence end the document. An extensive listing of references and suggested readings are included to facilitate the reader's further study. Keywords: TQM, Total quality management. (kr)

270. Mannebach, Stephanie Vesely, E. J., Jr. "Lessons Learned from Implementing TQM in a High Tech Facility Start-Up." Tapping the Network Journal. v2n1. 24-27, (Spring/Summer 1991). TNJ English Charts. 00573236

Total quality management (TQM) provides valuable techniques for getting through a complex start-up of a high-technology facility. Using TQM at this early organizational stage has the advantage of building it into the culture. The IIT Research Institute team is fulfilling a contract to maintain and operate an on-site Metallurgy Research Facility (MRF) for NASA's Materials and Processes Laboratory. During the first several months

of MRF operations, a group of technologists, scientists, and engineers formed a working team dedicated to excellence in the services provided to its customer. A quality plan that creates a structured approach and incorporates TQM principles was introduced. It has been concluded that: 1. TQM can work in a high-technology research start-up, 2. a structured approach is required, 3. management support is crucial, 4. structured team efforts are valuable, and 5. a champion of the approach is vital.

271. Manning, Mitch. "Managing TQM Information Overload." *Journal for Quality & Participation*. 76-77, (Dec 1990). QCI English Charts. 00531999

Managers are trying to keep abreast of the rapid growth of information on total quality management (TQM) in an environment of accelerating social, economic, and political change. Experience has proven that the key to managing information is to develop and use a logical and easy-to-remember filing system. There are many information filing systems available for TQM. For example, the Malcolm Baldrige National Quality Award (MBNQA) criteria can be used to form an excellent system. The MBNQA system has 7 categories: 1. leadership, 2. information and analysis, 3. strategic quality planning, 4. human resources utilization, 5. quality assurance of products and services, 6. quality results, and 7. customer satisfaction. The MBNQA filing system for TQM can enhance management performance just by helping managers organize their thoughts as well as information.

272. Mansir, B. E.; Schacht, N. R. "Total Quality Management: A Guide to Implementation Final rept." (Aug 89). Logistics Management Inst., Bethesda, MD. 082507000 210475 English GRAI9115 United States. 1533030 AD-A232 070/3/XAB MDA903-85-C-0139

Total Quality Management (TQM) is a means for improving personal effectiveness and performance and for aligning and focusing all individual efforts throughout an organization. It provides a framework within which you may continuously improve everything you do and affect. It is a way of leveraging your individual effort and extending its effect and its importance throughout an organization and beyond. Total Quality Management is not a destination but a journey toward improvement. This guidebook will

help you get started on that journey. It will help you understand the benefits of continuous improvement and your role and responsibilities in leading the improvement effort in your organization. In it, we briefly explore why continuous improvement is important to each of us. We offer a brief overview of TQM, describe a core set of individual and organizational behavior that has proven key to successful improvement efforts, and offer a general model for your improvement effort. This guide will serve as a frame of reference for the ongoing dialogue about TQM within DoD and its supplier community. And, finally, it will help you set the direction for your own journey of improvement.

273. McLaughlin, Curtis P. | Kaluzny, Arnold D. "Total Quality Management in Health: Making It Work." Health Care Management Review. v15n3. 7-14, (Summer 1990). HCM English Charts | References. 00540761

Total quality management (TQM) is being implemented by a growing number of hospitals and health maintenance organizations. TQM calls for continuous and relentless improvement in the total process that provides care. The nature of the organizational change required to implement TQM can be outlined by contrasting TQM with professional bureaucracy and evaluating points of conflict. Points of conflict include: 1. individual versus collective responsibility, 2. clinical versus managerial leadership, 3. autonomy versus accountability, 4. administrative authority versus participation, and 5. rigid versus flexible planning. The implementation of TQM requires that administrative and medical managers mediate areas of conflict. Action guidelines for the implementation of TQM include: 1. Redefine the role of the professional. 2. Redefine the corporate culture. 3. Redefine the role of management. 4. Empower the staff to analyze and solve problems. 5. Change organizational objectives. 6. Make the TQM program a model for continuous improvement.

274. Melum, Mara Minerva. "Total Quality Management: Steps to Success." *Hospitals*. v64n23. 42, 44, (Dec 5, 1990). HPT English. 00525825

Many leading industrial companies credit total quality management (TQM) as a key to their success. Now, TQM pioneers are emerging in the health care field as well. TQM is a business strategy of continuous process improvement to meet customer needs. Institutionalizing TQM requires strong commitment to 7 key success factors: 1. vision of quality, 2. understanding the process, 3. motivation to change, 4. management leadership, 5. physician commitment, 6. teamwork, and 7. TQM support systems. It is important to have a compelling vision that communicates why the process is being undertaken and how life will be better because of it. Management must clarify that TQM will become a way of life for every member of the organizational team. Integrating TQM with recognition programs, performance evaluations, budgets, and compensation can help strengthen motivation. Integrating TQM into the organization's support systems may be the most important means of ensuring that TQM will be a way of life rather than just another short-lived program.

275. Merry, Martin D. "Illusion vs. Reality: TQM Beyond the Yellow Brick Road." *Healthcare Executive*. v6n2. 18-21, (Mar/Apr 1991). HEE English Charts. 00551537

Total quality management (TQM) is a philosophy and practice of how people work together in organizational settings. The health care institutions that will succeed understand TQM as a new paradigm of collaboration and focused team effort and can implement the technology and the new organizational transformation imperatives of this paradigm. The continuous improvement concept is actualized through the Shewhart/Deming Cycle, which is the engine that drives TQM. W. Edwards Deming's 14 points are an excellent starting point for health care executives. Particularly germane points include: 1. Create constancy of purpose for the improvement of product and service. 2. Improve constantly and forever the system of production and service. 3. Remove barriers to pride of workmanship. 4. Institute a vigorous program of education and retraining. Health care executives must look to the TQM model with energy and optimism, but also with circumspection. Painful and potentially costly learning experiences await organizations that see TQM as just another program.



276. Milakovich, Michael E. "Total Quality Management in the Public Sector." National Productivity Review. v10n2. 195-213, (Spring 1991). NLP English References. 00541063

The failure of government productivity efforts to improve the quality of public service has prompted calls for the complete overhaul of management procedures. Past government efforts have been ineffective in motivating employees to continually improve quality. Total quality management (TQM) is a theory-based option that allows public managers to reward truly exceptional individual performance while increasing the capacity for agency-wide cooperation and process improvement. W. Edwards Deming's 14-point TQM philosophy can be applied to the public sector by: 1. creating and publishing to all employees a statement of the aims and purposes of the organization, 2. understanding the purpose of inspection for improvement of processes and reduction of cost, 3. ending the practice of awarding business on the basis of price alone, 4. constantly improving the system of production and service, 5. teaching and instituting leadership, 6. creating a climate for innovation, and 7. eliminating numerical quotas for production.

277. Mooney, Sean F. "Gearing Up for the 21st Century." Insurance Review. v52n1. 26-28, (Jan 1991). III English. 00531587

On the international front, US insurance companies trying to redefine their role in the early 1990s will embrace the "bigger is better" philosophy, leading to a number of acquisitions and mergers. Such activity will diminish by the mid-1990s, and the global network approach of cross-country links and relationships will be the dominant form of providing global coverage. The Japanese will have a significant presence in US insurance markets and may develop a total care service. A number of forces are pushing consolidation in personal lines: 1. There is a need for more personalized service, which will be met by more technology. 2. Proposed changes in the McCarran-Ferguson Act and the move by Insurance Services Office away from final advisory rates are forces that favor

larger companies. 3. Regulatory pressures on prices are pushing many less committed players out of the business. In the 1990s, many US companies will adopt the total quality management (TQM) approach. Three basic principles of TQM are: 1. a concentration on service to the customer as the top priority, 2. management of the total process, and 3. management for continuous improvement of the process.

278. Nash, Tom. "Quality Management -- Getting It Right." Chief Executive. 8-10, (Jan 1987). CEX English. 00352689

Since 1983, UK companies typically have spent between 25% and 40% of their income on quality, trying to ensure defect-free production. Today's Total Quality Manager (TQM) program differs from other traditional approaches to quality improvement by: 1. demanding management commitment, and 2. continually meeting customer requirements by harnessing all organizational efforts. Employees are motivated to eliminate all defects rather than most defects, since the higher costs will be repaid several times over by greater customer satisfaction. Excellent working relationships are vital to TQM programs; thus, many packages include in-house training programs for executives and managers. After diagnosis of a company's strengths and weaknesses, actions are suggested, including the adoption of numerous primary quality standards. As managers become committed to the standards, they will become the in-house trainers of the various shop-floor workers.

279. O'Lone, Richard G. "Aerospace Suppliers Adopting TQM to Remain Competitive." Aviation Week & Space Technology. v133n3. 70-71, (Jul 16, 1990). AWS English. 00506204

Firms at all levels of the aerospace supplier network seem to be embracing total quality management (TQM) principles more as a means of improving their commercial business base than in response to government pressure in the defense sector. To compete effectively in the booming commercial aerospace markets, suppliers must provide high-quality products on time and at competitive prices. A number of West Coast suppliers either have a TQM culture in place or are developing one. Leach Corp. (Buena Park, California) is a clear leader in making TQM

work, demonstrating both financial and qualitative benefits. Other suppliers have been introduced to TQM techniques by vendors offering specialized services, such as Micro-Frame Technologies Inc. (Ontario, California). Aerospace manufacturing is so important in California that its Department of Commerce, Employment Training Panel, and community colleges have joined to develop a program aimed at developing TQM training for small and medium-sized aerospace manufacturers.

280. Pastor, Joan Gechtman, Risa. "Nurturing the Teamwork Culture: Internal Customer Service." *Supervisory Management*. v36n4. 10, (Apr 1991). SPM English. 00543882

Company employees who internalize company goals and who support one another strongly contribute to the success of an organization. To create a healthy team in any organization, it is important to cultivate a team that thinks of fellow workers as customers. Employees who are willing to give more and who do what is best for the team find out that what they do for fellow workers comes back to them. This practice is called internal customer service. Departments must work at satisfying the requirements of other departments before the ultimate goal of satisfying the external customer can occur. The responsibility for keeping in touch with one's internal customers lies with the individuals of a department, and a supervisor can foster this sharing of time and information. When a department establishes relations with another, the supervisor is responsible for ensuring that everyone keeps the commitments made to internal customers.

281. Price, Robert M. "Making the Best of Crises." *Journal for Quality & Participation*. 18-21, (Jan/Feb 1990). QCJ English Charts. 00486361

The period since the mid-1980s has been the time of greatest change in the computer industry's history in terms of economic forces and competitive structure as well as technology. Control Data Corp. has felt the full impact of this change. By 1985, the firm was experiencing severe liquidity problems brought on by overexpansion in the number and scope of the kinds of businesses it was pursuing. This experience produced an environment in which change was more readily accepted. In 1983, the company developed a total quality management concept called the total

quality management process (TQMP). Quality is management's prime responsibility, and this belief is expressed in the first of 3 TQMP principles: 1. Quality can and must be managed. 2. Everyone has a customer. 3. Processes are the problem, not people. Quality begins with strategy. At the strategic level, quality is synonymous with marketing. Strategy is made real through a detailed list of initiatives that address improvement in each process that is a part of achieving a goal.

282. Quimby, Charlie Parker, LyndalWeimerskirch, Arnold M. "How, Exactly, Do You Communicate Quality?" *Quality Progress*. v24n6. 52-54, (Jun 1991). QPR English. 00561786

Many sincere total quality management (TQM) efforts are unsuccessful because organizations do not understand how to communicate quality. To make organizational change occur, an effective quality communication approach must try to influence individual behavioral change, but in such a way that the organization enjoys maximum benefit from the change. Four areas provide the greatest payoff for communication efforts: 1. leadership based on a true understanding of how quality will influence the success of the organization, 2. alignment of business needs, quality plans, and individual actions, 3. appropriate quality training, and 4. quality propaganda and reinforcement. Influencing executive behavior ought to be the early focus of a quality communication strategy. For TQM to work, a plan should be designed that is aligned horizontally with the product-making and service-delivery processes in the organization, as well as aligned vertically with the objectives of the company. Such a plan shows how actions in various locations are related to each other and shows progress toward a destination.

283. RICHTER, KAREN J.; DIEROLF, DAVID A. "Concurrent engineering teams. Volume 1: Main text." (1990 9011). Institute for Defense Analyses, Alexandria, VA. English United States STAR9119 DTIC. 1790862 N91-28024 MDA903-89-C-0003

Specific concurrent engineering practices vary among organizations. There are, however, various management practices that appear to work well for most organizations. This paper presents the reader with specific, useful examples

from several defense contractors illustrating how multifunctional concurrent engineering teams are being organized and managed and how concurrent engineering team meetings are conducted and supported. The types of computer support that could be used to enhance the efficiency and effectiveness of concurrent engineering team meetings are identified. The general findings are that there exists a direct relationship between total quality management (TQM) and concurrent engineering, and that many applications of computer-aided group problem solving are possible and practical today for the concurrent engineering team meetings. Areas identified for additional research are the documentation of the decision process and rationale during the product and process definition, the capturing of lessons learned during the implementation of concurrent engineering, and the performance evaluation and training of team members. GRA

284. Rieker, Wayne S. "Where Are We Headed?" Journal for Quality & Participation. v10n4. 32-36, (Dec 1987). QCJ English. 00420739

A well-implemented employee involvement program will go a long way toward solving the US problem of lack of competitiveness and inadequate productivity. The concept will take many directions in the future, including the implementation of: 1. self-managing teams, 2. quality of work life teams, 3. labor-management cooperative committees, and 4. employee stock ownership programs. Employee involvement must address the economic success of the enterprise if it is to be considered successful. Further, quality and customer satisfaction must be the primary focus of the future. This quality improvement must encompass all aspects of the firm's operation and management, addressing such things as statistical process control. The concept of Total Quality Management (TQM) implies the creation of a participative environment where everyone is involved in making quality improvement decisions. Adoption of the TQM concept is essential and can be achieved only through employee involvement. Japanese experiences affirm the gains to be realized from the incorporation of employee involvement.

285. Robson, Mike. "TQM, the Easy Sell - The Hard Reality." *Journal for Quality & Participation*. 36-40, (Mar 1991). QCJ English Charts. 00543813

Total quality management's (TQM) biggest problem is its obviousness. Saying that it is cheaper and better to do things right the first time rather than have to redo work, fix the problem, or simply scrap it are so obvious that it masks the true nature of the changes that TQM demands. Often, problems begin with the choice of system to be used. The chief executive can focus on any of the following: 1. ease of implementation, 2. the use of a creative approach to the implementation plan, 3. the concepts that underpin the process, or 4. a reliance on charisma to drive the implementation. Each choice will give rise to difficulties, and only those with the imagination or good fortune to fill in the gaps left by the system will succeed in the long run. While the TQM message is obvious and simple, the reality is confronting and difficult. However, the results can be staggering for those with the consistency of purpose, the courage, and the determination to follow it through fully.

286. Rose, Frank. "Now Quality Means Service Too." *Fortune*. v123n8. 97-111, (Apr 22, 1991). FOR English Graphs. 00544404

After being viewed as a manufacturing problem for most of the past decade, quality has become a service issue. The idea is total quality management (TQM) in the offering itself and in all the services that come with it. Poor service has become an issue for managers for the same reason shoddy goods did: competition. If product quality is essentially the same across the industry, service becomes the distinguishing factor. Because service quality can be gauged only by customer satisfaction, TQM has redefined quality as "what feels right to the customer." The TQM effort depends on a willingness to see the world from the customer's point of view and an eagerness to move swiftly. Within any company, TQM theory holds, is a whole chain of internal customers, culminating with the person at the cash register. The trick is to get everyone working together while keeping this ultimate customer in focus.

287. Rusk, P. S. "The Role of the Bill of Material in Manufacturing Systems." *Engineering Costs & Production Economics*. v19n1-3. 205-211, (May 1990). EPE English Charts|Graphs. 00508595

In order to meet domestic and foreign competition, manufacturers must become more flexible and responsive in meeting customer needs. This requires that reductions be made in stock levels, customer lead times, product introduction, and engineering change timescales. To achieve these goals, effective communication and control of information both inside and outside the organization are essential. ICL, the information subsidiary of STC PLC, has developed a total quality management (TQM) and just-in-time (JIT) environment that has enabled it to become a world-class manufacturer. A key element for ICL in achieving this environment is the bill of material (BOM). Recognizing that how the BOM is managed, controlled, and structured can directly influence company success, ICL developed an integrated system to tackle this problem. The company's extensive change control system is organized to coordinate the marketing, finance, engineering, manufacturing, planning, and control functions of the business.

288. Salter, James M., II. "Take Systematic Approach to Measuring Satisfaction." *Marketing News*. v25n3. 9, (Feb 4, 1991). MNW English. 00533975

Customer-derived information, the basis for the total quality management programs used in more companies every day, must be systematically defined and operationally deployed to improve customer satisfaction. A model links appropriate research and problem-solving techniques, providing a line of sight that focuses on the customer. It provides a common measure across multiple business units, yet is flexible enough to provide measurable management information at the department level. The steps are: 1. Define goals and how information will be used. 2. Discover what is important to customers and employees. 3. Measure critical needs. 4. Act on the information. 5. Measure performance over time. Using the model to improve and measure customer satisfaction requirements can greatly enhance existing total quality management and other quality improvement programs. It can also stand alone as a first step in focusing an organization on improved customer

satisfaction as the key to improved market share and financial performance.

289. Schlossberg, Howard. "Customer Satisfaction: Not a Fad, but a Way of Life." *Marketing News*. v25n12. 18-19, (Jun 10, 1991). MNW English. 00554087

According to experts speaking at the American Marketing Association/ASQC Customer Satisfaction and Quality Measurement Conference, customer satisfaction is becoming a way of life in corporate America. Christopher Hart of the TQM Group predicted that customer satisfaction will become embedded in corporate cultures. Using customer satisfaction as a competitive weapon has proven worthwhile for Xerox Corp. The firm was rated number one in its industry in product reliability and service, according to Dataquest. Another company that has benefited from its commitment to customer satisfaction is MBNA America Bank NA. Steve Boyden, senior vice-president of the credit card lender, noted that the difference between the company's customer retention costs and the industry's saved the company \$20 million in 1991. One key to these companies' commitments is recognizing that achieving customer satisfaction is a never-ending quest.

290. Schneider, Helen L. | Schneider, Christopher | Riley, Dean. "Clearing a Hurdle to Quality." *Quality Progress*. v24n9. 39-41, (Sep 1991). QPR English Diagrams. 00574337

Seeing the need for total quality management, continuous quality improvement, and complete company support, Del Norte Technology Inc. president Wendell Brooks made openness to new ideas and improved internal communication top priorities. These factors continue to move Del Norte forward. Senior managers instructed middle managers to evaluate and approve a companywide quality training program. Team building, problem solving, and the need for a common language had to be addressed. A Quality Education and Training program was developed, not only to serve as a common language, but also to give employees the empowerment they desired. The open team-oriented management structure at Del Norte, coupled with the localized approach to company procedure, has given the company a



faster, more productive atmosphere to handle problems. Companywide corporate awareness is greatly facilitated by annual programs designed to enhance employee understanding of the complete scope of the business.

291. Sclesinger, Leonard A. "The Service-Driven Service Company." Harvard Business Review, (September-October 1991).

Most service failures are not failures: they have been designed into the system. At Sears, shifting the sales force from 70% full-time employees to 70% part-timers cut costs-and customer satisfaction. Managers at Merck & Co. found that the total costs of turnover are 1.5 times an employee's annual salary. At taco Bell, both frontline workers and their managers focus on serving customers, not on manufacturing meals. The work force at pioneering service companies is homogeneous on the one dimension that what matters is the ability to provide excellent service. Sooner or later, new technology becomes available to everyone. Customer-oriented employees are a lot harder to copy or buy.

292. Sutton, John R. "New Cost Management Tools Offer Competitive Advantage." Industrial Engineering. v23n9. 20-23, (Sep 1991). INE English Charts. 00572661

Traditional cost accounting systems now in use were developed more than 50 years ago to control labor, then a scarce resource. Fundamental changes are occurring in manufacturing with the advent of just in time, total quality management, supplier programs, greater employee involvement, and decentralized organizations. These changes are altering the behavior of costs. To motivate desirable behaviors and make change happen, managers need: 1. operating information linked to strategic goals, 2. a forward look, 3. a horizontal (pipeline) view of the organization, 4. accurate product cost information, 5. simple information for easy analysis and fast action, and 6. lower cost of obtaining information. Moving to a new paradigm of cost management is a significant undertaking that requires a well-planned approach.

293. Tenner, Arthur R. "Quality Management Beyond Manufacturing." *Research-Technology Management*. v34n5. 27-32, (Sep/Oct 1991). RMG English Charts/References. 00570480

Capturing the competitive advantage offered by total quality management is possible in all types of businesses, from manufacturing through service. Furthermore, the techniques can be applied to all functions within an organization, including information systems, marketing finance, and research and development. However, adaptation becomes necessary as the characteristics of the work process under investigation diverge from those of classical, repetitive manufacturing for which the methods were originally designed. A model has been developed to extend process improvement beyond manufacturing. Applications most likely to benefit from this model include those in which: 1. the presence of an underlying business system is not clear, 2. customers requirements are difficult to define, and 3. the work process is not documented, or 4. its performance is hard to measure.

294. Tobin, Lawrence M. "The New Quality Landscape: Total Quality Management." *Journal of Systems Management*. v41n11. 10-14, (Nov 1990). JSM English. 00525453

The source of Japan's success in product quality, technology, and ingenuity is total quality management (TQM), the totally integrated effort for gaining competitive advantage by continuously improving every component of organizational culture. TQM differs from traditional management in that: 1. traditional management's focus is on its own requirements, while TQM focuses on the customer, 2. TQM takes the view that profits follow quality, while traditional management views profits as its first responsibility, 3. TQM considers quality as multidimensional and customer-oriented, while traditional management defines quality in terms of a single dimension, 4. TQM encourages every employee to find better ways to work, while, with traditional management, workers work and managers manage, and 5. TQM takes a long-term, process-oriented approach to improving process quality, while traditional management strives for short-term, results-oriented gains. To implement TQM, information systems (IS) professionals must develop a new definition of

quality, expand methodologies, develop new systems, and expand into the business environment.

295. "Total Quality Management (TQM): Group Dynamics Workshop." (15 May 90). Booz-Allen and Hamilton, Inc., Bethesda, MD. 049504000 408597 English GRAI9107 United States. 1507899 AD-A225 735/0/XAB

Contents: Introduction - Course Logistics; Module 1 - Course Rationale, OSD Context, and Overview; Module 2 - Applying TQM Concepts to Group Dynamics; Module 3 - Group Dynamics Tasks and Stages Determining TQM Task Achievement; Module 4 - Methods for Maximizing TQM Group Participation; Appendix A - Selected Bibliography in TQM and Group Dynamics; Appendix B - Optional Overnight Assignment; Appendix C - Task-Process TQM Group Leadership, Self-Assessment Questionnaire and Self-Scoring Forms; and Appendix D - Core TQM Concepts. Keywords: Management planning and control, Quality control, Quality, Management, Quality management. (KR)

296. "Total Quality Management, January 1990-July 1991 (Citations from the NTIS Database) Rept. for Jan 90-Jul 91." (Jul 91). National Technical Information Service, Springfield, VA. 055665000 English GRAI9117 United States. 1541443 PB91-800227/XAB

The bibliography contains citations concerning planning, development, and management of quality programs. The improvement of quality in products and the improvement of quality in service have become highly visible national priorities. Topics include strategic planning, customer service, employee participation, quality assurance, program management and case studies in Federal Government agencies. (Contains 152 citations with title list and subject index.)

297. Varian, Tom. "Communicating Total Quality Inside the Organization." Quality Progress. v24n6. 30-31, (Jun 1991). QPR English. 00561781

Good communication is vital to the success of the total quality process, especially when the communication is directed to audiences inside the organization. Communication strategy is the least understood and most poorly managed aspect of many total quality management (TQM)

implementations. Professional communicators frequently lack the in-depth understanding of TQM required to shape and execute an effective total quality communication plan. A solution to this dilemma is to combine the knowledge and competency of total quality managers with that of communication professionals. The following guidelines will help managers communicate total quality inside their organization: 1. making involvement the goal, 2. providing a plan of action, 3. developing a document with guidelines, 4. providing an example of TQM in action, 5. using existing internal communication channels, 6. arming management to deliver the total quality message, 7. reporting process achievements as well as results, and 8. celebrating.

298. Von, der Embse, Thomas J. "Perspectives: The Challenge of Total Quality Management." *Manage.* v42n1. 15-16, 35, (Jul 1990). MAN English. 00508996

The National Management Association (NMA) has been actively engaged in the subject of total quality management (TQM) since 1986, when the Educational Roundtable recommended the topic as part of NMA's Professional Development Expansion Program. The course has been written and is being pilot-tested in 7 NMA chapters across the US. The TQM course emphasizes thinking and deciding rather than simply learning technical aspects. Practitioners will come away from the course with a mental framework and a versatile toolkit. NMA describes TQM as a system for delivering quality products and services to the customer, and quality products and services are defined as quality commensurate with customer needs and wants. Organizations, whether public or private, profit or nonprofit, are working to create a product or service that satisfies a customer need. When all employees pay close attention to customer needs, tastes, and desires, the entire organization prospers.

299. Wilkinson, Adrian Allen, Peter/Snape, Ed. "TQM and the Management of Labour." *Employee Relations.* v13n1. 24-31, (1991). EMP English References. 00545544

Total quality management (TQM) has far-reaching implications for the management of labor. Its proponents say that TQM emphasizes self-control, autonomy, and creativity among employees and calls for

greater active cooperation rather than just compliance. The major premise of TQM is that quality is the key to business success in the 1990s and to competitive advantage. Improved quality will lead to a reduction in costs. The objective is to have quality become the responsibility of all employees, rather than of a specialist department. TQM seems to have both "hard" aspects, such as production techniques and tools to interpret data, and "soft" aspects, which are concerned with creating customer awareness within an organization. TQM appears to be consistent with a move toward a more strategic human resource management (HRM) approach of labor. Case studies in the UK involving the Co-operative Bank PLC and Black & Decker manufacturing plant at Spennymoor, County Durham, support this theory.

300. Willis, George. "The "Q" Word and Management Accounting." CMA Magazine. v65n6. 28, (Jul/Aug 1991). RIA English. 00568107

The subject of total quality management (TQM) is important to the certified management accountant (CMA), but the question of its potential importance to public sector management accountants remains unanswered. TQM is organized around just a few principles: 1. It is customer-driven. 2. It emphasizes "doing things right the first time." 3. It necessitates consistent, dedicated leadership, an organization-wide cultural commitment, and objective measurement and reporting systems. In the public sector, there is a trend toward the senior management accountant as strategist or change agent. CMAs are not improbable promoters and champions for TQM because of their breadth of viewpoint and objectivity. To implementation teams, the CMA brings to bear measurement and reporting skills, knowledge of clients, services and available resources, and a broad-based perspective on organizational issues.

301. Ziegler, K. R.; Twilley, J. T. "Let's Join the Quality Revolution Research rept." (May 89). Air War Coll., Maxwell AFB, AL. 001030000 014550 English GRAI9010 United States. 1444659 AD-A217 473/8/XAB

A 'Quality Revolution' is occurring in American industry today prompted, primarily, but the necessity to remain competitive in the world marketplace. The Japanese have led the Quality Revolution by applying managerial and quality principles learned from Americans such as Dr. W. Edwards Deming, Joseph M. Juran and others. Although taught by these men, American managers did not generally begin applying their principles until the 1980s. In 1987 the Secretary of Defense published direction to all Services and Defense Agencies to begin applying the principles of Total Quality Management (TQM) in their day-to-day operation. Within the USAF, the Air Force Logistics Command has vigorously applied TQM in all aspects of the command. However, very little application of TQM is evident in the other Air Force Commands. A suggested application of TQM principles is presented, aimed at the flightline maintenance activity throughout the Air Force.

#### TQM CASE STUDIES

302. Botterill, Meaghan. "Why You Should Implement TQ." Management Services. v34n12. 18-21, (Dec 1990). MNS English. 00529587

In September 1990, David Hutchins & Associates presented a Users' Convention on Total Quality. During the 2-day conference, delegates from 12 UK companies delivered case studies that detailed their experiences in initiating a total quality (TQ) program. Like many others, these companies have been forced to change their organizations and to become more cost-effective because of increasing competition, loss of market share, or government legislation and policies. The companies have adopted TQ management (TQM) in order to face outside influences. With TQM, the aim is to get it right the first time, every time, and to understand who the customers are, what they want, and when they want it. The implementation of TQ involves: 1. a strategic plan, 2. commitment for TQ from top management on down, 3. education and training, 4. measurement, and 5. communication. Quality circles empower people to be creative,

imaginative, and industrious. They offer solutions from first-hand work experience.

303. Howe, Maynard A. | Dawson, Carman L. | Gaeddert, Dee. "Expert Training That's Free." *Personnel Journal*. v70n3. 59-63, (Mar 1991). PEJ English. 00541170

In 1991, corporate America will spend more than \$40 billion to provide employee training courses that often will prove inappropriate or ineffective when evaluated by measuring improved performance. There are some notable examples of training excellence. One of these successes was a program developed by General Dynamics' Convair Division (San Diego, California). Three years ago, the organization's research and engineering (R&E) department launched a voluntary training program after normal work hours for its technical and management leaders. Through careful planning and the use of available resources, the company not only has sustained its competitive advantage by enhancing the performance of individual engineering leaders and improving morale, but it has also saved \$2.5 million. The plan was equipped with an R&E strategic model having 8 phases, including: 1. Assess enrollment and design needs. 2. Design curriculum. 3. Select instructors. 4. Evaluate effectiveness. 5. Celebrate success.

304. Howland, Jennifer. "10 Savviest Production Executives." *Folio: The Magazine for Magazine Management*. v20n6. 73-76, (Jun 1, 1991). FOL English. 00552592

The 10 savviest production executives, as determined by a poll of 1,000 of their peers, became the best at magazine production by taking risks, pushing on the edge of technology, believing in the worth of their employees, and taking time to enjoy life. Angelo Ravello of Newsweek is a doer and not a follower; he is a shrewd negotiator, but a fair one. Michael Arpino of Cahners consumer entertainment division pioneered the use of selectronic binding for consumer magazines at Games. Kit Taylor of Times-Mirror Magazines believes that management must surround itself with very qualified and professional people. Vito Colaprico of The New York Times Co. Magazine Group has a great vision of the technology of the future but never loses

sight of day-to-day operations. Rosemary Sullivan of Lang Communications urges the view of production as a profit, not just a cost, center.

305. Price, Robert M. "Making the Best of Crises." *Journal for Quality & Participation*. 18-21, (Jan/Feb 1990). QJ English Charts. 00486361

The period since the mid-1980s has been the time of greatest change in the computer industry's history in terms of economic forces and competitive structure as well as technology. Control Data Corp. has felt the full impact of this change. By 1985, the firm was experiencing severe liquidity problems brought on by overexpansion in the number and scope of the kinds of businesses it was pursuing. This experience produced an environment in which change was more readily accepted. In 1983, the company developed a total quality management concept called the total quality management process (TQMP). Quality is management's prime responsibility, and this belief is expressed in the first of 3 TQMP principles: 1. Quality can and must be managed. 2. Everyone has a customer. 3. Processes are the problem, not people. Quality begins with strategy. At the strategic level, quality is synonymous with marketing. Strategy is made real through a detailed list of initiatives that address improvement in each process that is a part of achieving a goal.

306. "Total Quality Management (TQM): Group Dynamics Workshop." (15 May 90). Booz-Allen and Hamilton, Inc., Bethesda, MD. 049504000 408597 English GRAI9107 United States. 1507899 AD-A225 735/0/XAB

Contents: Introduction - Course Logistics; Module 1 - Course Rationale, OSD Context, and Overview; Module 2 - Applying TQM Concepts to Group Dynamics; Module 3 - Group Dynamics Tasks and Stages Determining TQM Task Achievement; Module 4 - Methods for Maximizing TQM Group Participation; Appendix A - Selected Bibliography in TQM and Group Dynamics; Appendix B - Optional Overnight Assignment; Appendix C - Task-Process TQM Group Leadership, Self-Assessment Questionnaire and Self-Scoring Forms; and Appendix D - Core TQM Concepts. Keywords: Management planning and control, Quality control, Quality, Management, Quality management. (KR)



## TQM CUSTOMER SERVICE

307. Roberts, George W. "Managing Research Quality." *Research-Technology Management*. v34n1. 28-34, (Jan-Feb 1991). RMG English. 00534118

Research and development (R&D) laboratories must learn to apply quality principles effectively or risk losing their customers and sponsors. For over 15 years, Babcock & Wilcox Co. (B&W) has been implementing nuclear quality assurance requirements for R&D. The principles have been applied to hundreds of projects. B&W identifies planning, execution, verification, and correction as the basic elements that underlie the achievement of quality. Identifying management's expectations and assessing how those expectations are met are significant steps in establishing and reinforcing a necessary culture for quality. Suggestions for achieving research quality include: 1. Plan continuously using effective tools. 2. Control execution with good communication devices and proper calibration techniques. 3. Take action on the data generated by the verification processes to improve the research process. Total quality management requires an understanding of internal practices and their performance.

## TQM GOVERNMENT

308. Hamson, Ned. "The FQI Story: Today and Tomorrow." *Journal for Quality & Participation*. 46-49, (Jul/Aug 1990). QCJ English. 00513875

The Federal Quality Institute (FQI) was created to help federal agencies implement total quality management (TQM) by: 1. introducing senior officials to TQM concepts, 2. establishing a vehicle to help agencies contract for TQM implementation services in a timely manner, and 3. providing information on quality management through a resource center. One of the strategies used by the FQI to accomplish its mission was to participate in a variety of quality conferences in which the expected attendance by federal employees would be significant. For instance, the FQI participated in the planning of and then exhibited at the Association

for Quality and Participation's Capital Chapter Conference held in December 1989. The FQI's quality improvement prototype awards and Presidential Quality Award also help make the FQI the focal point for federal quality and participation efforts and the leading edge for continuous improvement in the federal government.

309. "How to Develop Quality Measures That Are Useful in Day-to-Day Measurement Quality management (Final)." (Jan 89). Office of Management and Budget, Washington, DC. 012565000 English GRAI9110 United States. 1520631 PB91-155150/XAB

The report contains a paper prepared by staff of the Federal Quality and Productivity Improvement Program in the Office of Management and Budget to provide information on constructing useful quality measures. The paper describes step-by-step methods that can be used, and provides examples of quality measures that are being used in both private and public sectors.

310. "How to Get Started Appendix, Total Quality Management Handbook Quality management (Technical)." (Jun 90). Federal Quality Inst., Washington, DC. 099278000 Also available from Supt. of Docs. See also PB91-154807. English GRAI9110 United States. 1520608 PB91-154815

The report is the second of three booklets that comprise the Federal Total Quality Management Handbook. The booklet has a section on the quality gurus (Deming, Juran, Crosby, and Feigenbaum), and a section entitled Federal Supply Schedule (FSS) Information: Requirements for Contracting Total Quality Management Implementation Services.

311. Nazaruk, Pam. "Commitment to Quality: Test Process Not Product, Orders the Pentagon." Electronic Business. v16n19. 163-164, (Oct 15, 1990). ELB English. 00519538

The Pentagon's shift from testing the product to testing the process is starting to take hold among defense-electronics contractors, which are implementing total quality control to satisfy the Department of Defense's (DOD) new requirements. The Pentagon's total quality management (TQM) strategy consists of: 1. a qualified manufacturing

list, 2. a field failure return program, 3. standard military drawings, and 4. a tester independent software support system. Getting on the qualified manufacturing list is a 2-step process. First, the DOD quality team works with an electronics company when it is developing its quality management plan. Then, in a validation visit, a DOD team assesses the effectiveness of quality management by analyzing key TQM tools, such as statistical process control and experiment design. AT&T Co. is the first company on the qualified manufacturing list. Intel Corp. has passed the validation visit, but is awaiting review of its drawings and specifications.

312. Newman, Constance Berry. "Good Government Needs Good People." *Bureaucrat*. v20n2. 6-10, (Summer 1991). BUR English. 00563463

Behind the efforts in the past few years to rebuild the public service were the strong recommendations of the National Commission on the Public Service. Known as the Volcker Commission, this group of leading citizens made it clear that the US cannot have good government without good people and that a great nation exists only if there is good government. To have quality human resources management in the public service, at least 9 essential elements must exist: 1. public understanding and respect for government and the people who conduct the public's business, 2. challenging and flexible job opportunities for all, 3. effective and fair recruitment strategies responsive to the changing demographics of the 1990s, 4. competitive compensation, 5. a fair and effective job evaluation system, including a rational classification system, 6. effective training and development in the context of changing demographics and changes in the nature of work, 7. an effective performance management system, 8. effective employee-management partnerships, and 9. a commitment to total quality management.

313. PATTERSON, DOUGLAS O. (U.S. Navy, Washington, DC). "Saying is one thing, doing is another DoD critical path templates and Total Quality Management in relation to industrial processes associated with material acquisition." *IES, Journal* (ISSN 1052-2883), vol. 34, Jan.-Feb. 1991, p. 17-20, (1991 9102). English United States IAA9110 AIAA/TIS. 1761115 A91-26847

This paper briefly reviews the origins of the DOD templates and their

relationship to the industrial processes associated with material acquisition. The principal features of the TQM initiative are then summarized, with emphasis on the DOD and Navy interpretations currently being implemented. Focusing on the Navy material acquisition function, the templates and TQM are shown to represent an integrated approach which offers maximum benefit to both the government and industry. Some 'traps' in the DOD implementation of TQM are identified, along with some thoughts on how to escape. Author

314. Pazak, M. G. "Total Quality Management: A Recipe for Success Study project." (2 Apr 90). Army War Coll., Carlisle Barracks, PA. 025057000 403565 English GRAI9021 United States. 1476664 AD-A223 287/4/XAB

Total Quality Management (TQM) is a high level Department of Defense (DOD) initiative that is being touted as the primary management tool to force the fundamental cultural change in the way the DOD conducts business in the systems age. What is TQM. Where did it come from. What are it's guiding principles. How has it been used. What successes can be attributed to TQM. How can it best be implemented. These questions along with many others are addressed and answered in this work. In addition, an appendix of popular quality improvement models for organizations, their processes, and their individuals is provided. It was concluded that the DOD must embrace the TQM philosophy and proliferate it's principles in order to maximize the return on defense budget dollars. This will require an enormous investment in education, training and time and an equally positive commitment by the DOD leadership to create a DOD wide organizational climate that will stimulate and perpetuate individual productivity enhancing contributions. Keywords: Quality control; Quality management; TQM. (kr)

315. Peacher, M.; Lager, F.; Magee, D. "Strategy for Improvement: U.S. Internal Revenue Service Quality management (Final)." (1987). Internal Revenue Service, Washington, DC. 016648000 English GRAI9110 United States. 1520575 PB91-154062/XAB

The report outlines the strategy planned by the Internal Revenue Service in conjunction with the National Treasury Employees Union to implement their quality improvement process. It was used to provide background and

instruction for IRS staff attending quality improvement process training. Definitions of quality and customers are included, as well as discussion of several steps the IRS has taken to improve quality, the IRS approach to quality, and quality improvement process teams.

316. Penzer, Erika. "Making a Federal Case for Quality." Incentive. v165n8. 29-30, 107, (Aug 1991). IMK English. 00566408

In the government, total quality management (TQM) faces regulations and outdated policies that hinder its success. Most of the government agencies involved in TQM hesitate to talk about financial rewards because whatever they claim to save, the Office of Management and Budget immediately takes back. Still, some government operations have quantified their TQM successes. For example, the Internal Revenue Service (IRS) Service Center in Cincinnati saved more than \$270,000 in 1989 by helping citizens file their returns electronically rather than on paper. NASA's Johnson Space Center saved more than \$12 million by reducing the thickness criteria for its Space Shuttle Thermal Control System blankets, a suggestion that came from a quality team.

317. Penzer, Erika. "Why We Won the War." Incentive. v165n5 (Section 1). 34-42, (May 1991). IMK English. 00550648

One of the reasons that the US prevailed in the Persian Gulf War may have been that, almost 10 years ago, the Department of Defense and members of the US Air Force (USAF) began thinking about total quality management. Years of intensive training in quality fundamentals like teamwork, continuous improvement, and performance measurement may have fortified the forces during their time in the Middle East, according to John M. Loh, commander of tactical air command at Virginia's Langley Air Force Base. Loh is credited with spawning and nurturing much of the USAF's quality culture. To try to make operations at the USAF's Aeronautical Systems Division, which Loh headed from 1988-1990, more productive and efficient, he started instilling a customer-centered culture of continuous improvement. Promoting continuous improvement and customer service in the government consistently proves challenging. However, Loh disagrees with

critics who claim that the constant rotation of military management detracts from the quality mission.

318. "Program Manager: Journal of the Defense Systems Management College. Volume 19, Number 1, January-February 1990 Bimonthly rept." (Feb 90). Defense Systems Management Coll., Fort Belvoir, VA. 062178000 410036 Superintendent of Documents, Government Printing Office, Washington, DC 20402. No copies furnished by DTIC/NTIS. English GRAI9010 United States. 1444844 AD-A217 659/2/XAB

Partial Contents: Systems engineering -- The key to TQM (Total Quality Management); Program management the Air Force way; Are you Communicating effectively; Exposed -- The real truth about estimating economic effects of competition; Total quality management reading list; Organizational communications. Keywords: Program management periodicals. (EDC)

319. "Quality Improvement Prototype Workshop. Held in Washington, DC. on August 24, 1990 Quality management (Final)." (24 Aug 90). National Aeronautics and Space Administration, Houston, TX. Lyndon B. Johnson Space Center. 019042004 English GRAI9110 United States. 1520626 PB91-155101/XAB

Hard copy of the slides presented in a one-day workshop on the Lyndon B. Johnson Space Center which received an Executive Office of the President 1990 Quality Improvement Prototype Award. The slides cover a perspective on the Johnson Space Center (JSC), participative strategic planning and implementation, the Team Excellence initiative, contractor partnerships, a JSC survey, management of technology, and lessons learned and future directions. Presentations were made by JSC and NASA staff.

320. Sensenbrenner, Joseph. "Quality for Cities." Nation's Business. v79n10. 60, 62, (Oct 1991). NAB English. 00574250

The largest, most complex service industry in the US is local government. Like US industry, local governments can use the total quality management movement to provide better police protection, street maintenance, and health services, often at a lower cost to taxpayers. This approach has already worked in Madison, Wisconsin. Many local

governments could eliminate or reallocate 10%-25% of their program costs within 3-5 years by adopting the quality approach. Such savings are routine for private companies that have embraced it, and large savings are showing up in public agencies as well. Saving tax dollars is just one benefit; another is the installation of a concept of service in government.

321. "Total Quality Management Implementation at the Defense Technical Information Center." (Sep 89). Defense Technical Information Center, Alexandria, VA. 062640000 394981 English GRAI9003 United States. 1425226 AD-A212 908/8/XAB

This document discusses the implementation of TQM by the Defense Technical Information Center. It includes TQM concepts, methodology, goals and milestones. The DTIC plan embraces the principles and supports the goals of the DLA TQM Master Plan, the DLA-S TQM Plan and productivity improvement programs. Keywords: Continuous process improvement, Collection and dissemination of TQM reports. (KR)

#### TQM IMPLEMENTATION

322. Jackson, Sara. "Calling in the Gurus." Director. v44n3. 95-101, (Oct 1990). DRT English. 00522110

Although total quality management (TQM) is central to improved performance of businesses, it takes on different shades of meaning according to the organization that is implementing it. The quality gurus have, by now, largely absorbed and synthesized each other's ideas. The gurus can broadly be split into 2 groups, those who concentrate on technical process and those who concentrate on management. Paul Spenley, director of PERA, one of the UK's largest independent quality consultants, believes that total quality implementation in UK business is not going right. According to Spenley, most organizations are simply being sold a package. He claims that TQM cannot be learned in a classroom situation where the same principles are applied to a dozen different companies. In the UK, it is not quality gurus so

much as government initiatives that have been responsible for raising quality awareness.

323. Richter, K. J.; Dierolf, D. A. "Concurrent Engineering Teams. Volume 2: Annotated Bibliography." (Nov 90). Institute for Defense Analyses, Alexandria, VA. 075311000 179350 Institute for Defense Analyses, Alexandria, VA. See also Volume 1, AD-A236 093. English GRAI9119 United States. 1545727 AD-A236 094/9/XAB MDA903-89-C-0003

Specific concurrent engineering practices vary among organizations. There are, however, various management practices that appear to work well for most organizations. This paper presents the reader with specific, useful examples from several defense contractors illustrating how multifunctional concurrent engineering teams are being organized and managed and how concurrent engineering team meetings are conducted and supported. The types of computer support that could be used to enhance the efficiency and effectiveness of concurrent engineering team meetings are identified. The general findings are that there exists a direct relationship between total quality management (TQM) and concurrent engineering, and that many applications of computer-aided group problem solving are possible and practical today for the concurrent engineering team meetings. Areas identified for additional research are the documentation of the decision process and rationale during the product and process definition, the capturing of lessons learned during the implementation of concurrent engineering, and the performance evaluation and training of team members.

324. Rieker, Wayne S. "Where Are We Headed?" Journal for Quality & Participation. v10n4. 32-36, (Dec 1987). QCJ English. 00420739

A well-implemented employee involvement program will go a long way toward solving the US problem of lack of competitiveness and inadequate productivity. The concept will take many directions in the future, including the implementation of: 1. self-managing teams, 2. quality of work life teams, 3. labor-management cooperative committees, and 4. employee stock ownership programs. Employee involvement must address the economic success of the enterprise if it is to be considered successful. Further, quality and customer satisfaction must be the primary focus



of the future. This quality improvement must encompass all aspects of the firm's operation and management, addressing such things as statistical process control. The concept of Total Quality Management (TQM) implies the creation of a participative environment where everyone is involved in making quality improvement decisions. Adoption of the TQM concept is essential and can be achieved only through employee involvement. Japanese experiences affirm the gains to be realized from the incorporation of employee involvement.

325. Ritter, Don. "Let's Elevate Quality on Our National Agenda." National Productivity Review. v10n4. 447-452, (Autumn 1991). NLP English. 00574263

After more than 30 years of near-abandonment, manufacturing is experiencing a comeback. Quality improvement has been the manufacturer's single most important strategy. In 1989, the Government Accounting Office (GAO) was asked to examine the impact of total quality management (TQM) programs on the performance of US companies. What was needed was documentation of the quality revolution that would be accessible to the public at large and that would allow the development of legislation and policy relating to quality's role in improving competitiveness. The GAO focused its study on 4 key operational areas common to all businesses: 1. employee relations, 2. operating procedures, 3. customer satisfaction, and 4. financial performance. The GAO found that companies participating in the study registered improvement in employee-related areas after implementing formal TQM programs.

326. Salter, James M., II. "Take Systematic Approach to Measuring Satisfaction." Marketing News. v25n3. 9, (Feb 4, 1991). MNW English. 00533975

Customer-derived information, the basis for the total quality management programs used in more companies every day, must be systematically defined and operationally deployed to improve customer satisfaction. A model links appropriate research and problem-solving techniques, providing a line of sight that focuses on the customer. It provides a common measure across multiple business units, yet is

flexible enough to provide measurable management information at the department level. The steps are: 1. Define goals and how information will be used. 2. Discover what is important to customers and employees. 3. Measure critical needs. 4. Act on the information. 5. Measure performance over time. Using the model to improve and measure customer satisfaction requirements can greatly enhance existing total quality management and other quality improvement programs. It can also stand alone as a first step in focusing an organization on improved customer satisfaction as the key to improved market share and financial performance.

327. Sarazen, J. Stephen. "Continuous Improvement and Innovation." *Journal for Quality & Participation*. v14n5. 34-39, (Sep 1991). QCJ English Charts|Graphs. 00576568

Many organizations owe their success to powerful innovations in product or service. Too often, many quality experts focus on the "right" or "correct" application of particular quality tools. This type of thinking can stifle creativity and even result in unnecessary roadblocks to the basic application of many tools. Ensuring that an organization can compete successfully requires that it build a solid total quality management base. This base must consist of 4 elements: 1. sound problem-solving skills, 2. a passion for continuous improvement, 3. a constant awareness of innovation opportunities, and 4. an understanding of how these elements support one another.

328. SASSO, STEVEN E.; ISAKOWITZ, STEVEN J. (Martin Marietta AstronauticsGroup, Denver, CO). "ALS - A unique system approach." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 12 p, (1990 9007). English United States IAA9019 AIAA/TIS. 1720877 A90-42817

The principal features of the Advanced Launch System (ALS) that set it apart from past development work are presented, and some of the present achievements are discussed. The ALS is a flexible space launch system that is to provide the timely delivery of a wide range of payloads into orbit at a lowered cost. Design of a modular family of vehicles is based on the usage of advanced technology and concurrent engineering as well as operational

efficiency. Analytical tools and principles of Total Quality Management, used in a disciplined systems-engineering process, were employed to develop the design approach. R.E.P.

329. SCHNACKEL, J. A.; DOVENMUEHLE, R. H. (Martin Marietta Corp., Astronautics, Group, Denver, CO). "Statistical experimental design and its role in aerospace vehicle design efforts." AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 11 p. 5, (1990 9007). English United States IAA9018 AIAA/TIS. 1719417 A90-42204 F04701-88-C-0109

The particular application and benefits of statistical experimental techniques to aerospace propulsion analysis are reviewed. Total Quality Management has become the main initiative in commercial, industrial, and government organizations. A method for multivariate analysis in the experimental design process was provided and focussed variables to optimum levels. Statistical experimental design has identified many benefits from the propulsion trade study application. Information was enhanced by the addition of pareto and interaction data. As illustrated, the 27 case application did not provide significant time savings, while the nine-case trade shwed a 33 percent reduction in time savings. Both instances show an improved understanding of total system effects. R.E.P.

330. Schneider, Helen L. | Schneider, Christopher | Riley, Dean. "Clearing a Hurdle to Quality." Quality Progress. v24n9. 39-41, (Sep 1991). QPR English Diagrams. 00574337

Seeing the need for total quality management, continuous quality improvement, and complete company support, Del Norte Technology Inc. president Wendell Brooks made openness to new ideas and improved internal communication top priorities. These factors continue to move Del Norte forward. Senior managers instructed middle managers to evaluate and approve a companywide quality training program. Team building, problem solving, and the need for a common language had to be addressed. A Quality Education and Training program was developed, not only to serve as a common language, but also to give employees the empowerment they desired. The open team-oriented management structure at Del Norte, coupled

with the localized approach to company procedure, has given the company a faster, more productive atmosphere to handle problems. Companywide corporate awareness is greatly facilitated by annual programs designed to enhance employee understanding of the complete scope of the business.

331. Shah, Syed Woelki, George. "Aerospace Industry Finds TQM Essential for TQS." *Quality*. v30n3. 14-19, (Mar 1991). QUA English Graphs. 00540157

Total quality management (TQM) is sweeping through the aerospace industry, as both large and small companies realize that their survival is at stake. Their objective is to convert TQM theory into daily practices at the working level. One of the companies converting to TQM principles is Allied Signal's AiResearch Los Angeles Division, a manufacturer of environmental systems for commercial jet airliners and high-performance military aircraft. Basic operational and management weaknesses began to surface around 1984 when the US government began to hold it accountable for making things in strict accordance with written production standards. AiResearch President John Boppart realized that, before these problems could be corrected, workers' attitudes had to change. First, AiResearch opened the lines of communication from management on down. Second, it conducted more than 120,000 hours of employee training. Third, it revamped hundreds of policies, procedures, and processes. As a result, AiResearch has turned its operations around, improving productivity and cutting manufacturing time.

332. Sharman, Paul A. "World-Class Productivity at Standard Aero." *CMA Magazine*. v65n3. 7-12, (Apr 1991). RIA English. 00550900

Standard Aero (Winnipeg, Manitoba) is in the business of repairing and overhauling airplane engines. "World Best" is the way Standard Aero describes the results of its continuous efforts to drive total quality management (TQM) programs into every aspect of its business. Standard Aero was acquired in 1989 by Hawker Siddeley, a UK conglomerate. Under the leadership of President Bob Hamaberg, company personnel are forming task teams dedicated to effecting dramatic improvements in performance. Some of their accomplishments are: 1. reducing inventory investment by roughly 50% from 2 years ago, 2. eliminating 20% of annual paper consumption, and

3. dispersing the accounting staff among the business units, resulting in improved accounting record accuracy. In 1990, the company undertook a new project to redesign the complete business. The first manufacturing cell has been implemented, with better-than-target results, and 7 more projects will be undertaken.

333. Wagel, William H. "Corning Zeroes In on Total Quality." Personnel. v64n7. 4-9, (Jul 1987). PER English. 00367470

To enhance its competitiveness, Corning Glass Works (Corning, New York) implemented a "Total Quality Management System" in January 1984 that has focused on the achievement of total quality. The program, which includes awareness seminars, specific job-skill courses, problem-solving seminars, quality-improvement teams at every plant or unit, and corrective-action teams, has called for a fundamental change in the company's corporate culture. Corning Glass has adopted a long-term, intensive educational process based on 4 principles: 1. meeting the customer's requirements, 2. striving to do error-free work, 3. managing by prevention, and 4. measuring by the cost of quality. While still somewhat centrally based, the company's training now also takes place at all the organization's 58 locations. Corning's quality program already has had a positive impact on decision making, business strategy, corrective actions, interpersonal relations, and supplier behavior.

334. Scott, William B. "Aerospace/Defense Firms See Preliminary Results from Application of TQM Concepts Aerospace Firms Committed to Installing TQM Methods." Aviation Week & Space Technology. v132n2. 61-63, (Jan 8, 1990). AWS English. 00483194

Although significant productivity gains are still several years away, the total quality management (TQM) concepts adopted by aerospace and defense companies are already starting to show preliminary results. In a number of firms, TQM has been introduced on the factory floor as a pilot project and then has been expanded into other areas. In some firms, TQM has been

adopted on a companywide scale accompanied by major organizational restructuring. The effectiveness of TQM depends largely on the way it is introduced. Implementing TQM concepts requires a cultural change at all company levels. Firms reporting positive results have used a measured, incremental approach that introduces TQM first to a specific work area and then expands from there. Martin Marietta's Space Launch Systems Co. has used this approach with great success. The company estimates that the initial investment in training has already been recovered about 12 times over in terms of improvements in processes.

### TQM LEADERSHIP

335. Johnson, John G. "Why Aren't Our Managers Better Leaders?" Tapping the Network Journal. v2n1. 2-4, (Spring/Summer 1991). TNJ English. 00573232

A total quality management culture will demand that all layers of management have both highly developed management and leadership skills. It is the responsibility of corporate management to create a cultural environment where knowledgeable people are empowered to improve their particular work and where there is a system of measurements and rewards that will tell them how they are doing. This new work culture begins with the articulation and acceptance of a vision for the organization. Then, a consensus must be developed on the basic values to be observed by the organization. Once values are defined, managers should support them and, through their behavior, inspire others to do the same.

### TQM MANAGERS

336. Johnson, John G. "Successful TQM Is a Question of Leadership." Journal for Quality & Participation. 16-20, (Jun 1990). QCJ English. 00504173

If top managers want to achieve total quality management (TQM), they must put it at the top of their agendas. A TQM leader must head up efforts to develop reward systems that reinforce the new TQM values. Most important, leaders must make the necessary and visible adjustments to their

own behaviors, expectations, and values. If TQM is to succeed, top managers have to operate on the assumption that rational adult people, when told what is expected of them, will prefer to do those things that will get them rewarded and recognized rather than things that will get them criticized and punished. Then, top managers have to believe and behave accordingly and establish procedures that back up those beliefs. Cultural change in an organization requires a lot of patience and time to unlearn old habits.

337. Johnson, John G. "Why Aren't Our Managers Better Leaders?" Tapping the Network Journal. v2n1. 2-4, (Spring/Summer 1991). TNJ English. 00573232

A total quality management culture will demand that all layers of management have both highly developed management and leadership skills. It is the responsibility of corporate management to create a cultural environment where knowledgeable people are empowered to improve their particular work and where there is a system of measurements and rewards that will tell them how they are doing. This new work culture begins with the articulation and acceptance of a vision for the organization. Then, a consensus must be developed on the basic values to be observed by the organization. Once values are defined, managers should support them and, through their behavior, inspire others to do the same.

338. Leibson, Beth. "Karl Fagans Manages with Total Quality." Facilities Design & Management. v10n6. 52-55, (Jun 1991). FDM English Charts. 00554848

Arthur D. Little Inc. (ADL) is a management and technology consulting firm with offices around the world. Managing such a diverse enterprise is not an easy task, according to Karl Fagans, vice-president of support services and real estate. Managers cannot contribute to handling this diversity using traditional management practices and systems. To support and spur the continuous flow of innovation, ADL has adopted a rather unusual managerial philosophy. The focus is on clients; the method is cooperation; and the buzzword is total quality management, an updated version of participatory management. Egalitarianism is the rule at ADL, and that attitude permeates nearly every detail of the organization, from the physical structures to the organizational design.

ADL is highly matrixed, according to Fagans. Consultants report to a series of practices, directorates, and profit-and-loss centers, all intended to keep ADL employees client- and market-driven. As supervisor to 155 full-time equivalents, Fagans applies ADL's management philosophy thoroughly.

## TQM PLANNING

339. "DPSC (Defense Personnel Support Center) Total Quality Management Master Plan." (Jul 89). Defense Personnel Support Center, Philadelphia, PA. 095778000 398579 English GRAI9003 United States. 1425256 AD-A212 938/5/XAB

This document discusses the implementation of TQM by the Defense Personnel Support Center. It contains TQM concepts, methodology for implementation, core goals, and milestones. The ultimate goal of TQM at DPSC is the satisfied, quality equipped, quality supported soldier, sailor, airman and marine. Keywords: Continuous process improvement, Management, Supply support. (KR)

340. Lord, Chilver Heap, John. "Total Quality Management." Management Services. v34n6. 6-10, (Jun 1990). MNS English. 00502933

The UK's Institute of Management Services is working to develop its role in promoting the concept of total quality management (TQM) in the 1990s. TQM will enable a workforce to undertake the right work and do it right the first time. Management needs to become an interactive process among people working together to satisfy common objectives of customer satisfaction and company goals. The cost of quality nonconformance amounts to 25%-30% of turnover; this cost drains a company's profitability and significantly affects its competitiveness. TQM satisfies customers through the quality of products and services supplied. The Institute should consider its position on TQM, promote its policy on the issue, and publish articles in order to inform the membership on TQM issues. In a reply, John Heap stated that the Institute's role must be to provide the opportunity for its members to obtain the knowledge they



will require to be part of this new effort, through its education and training programs and specialist group activities.

341. Maddux, Gary A. | Amos, Richard W. | Wyskida, Alan R. "Organizations Can Apply Quality Function Deployment as Strategic Planning Tool." *Industrial Engineering*. v23n9. 33-37, (Sep 1991). INE English Charts. 00572664

Total quality management (TQM) has introduced an array of simple and complex tools into the workforce. One tool receiving notice as a result of the shift toward a TQM philosophy is quality function deployment (QFD). QFD's fundamental objectives are to identify the customer, what the customer wants, and how to fulfill the customer's wants. The Production Engineering Division (PED) of the US Army Missile Command used QFD in formulating a strategy to implement and manage a program called Production Engineering (PE) Tools. After an initial brainstorming session in which the customers of the product were identified, the QFD team defined the quality characteristics, or technical requirements, that would be necessary to meet the customers' needs successfully. Based on the results of the QFD exercise, PED management can now develop a more coherent strategy for implementing the PE Tools program.

342. Maher, Dan. "Service Guarantees: Double-Barreled Standards." *Training*. v28n6. 27-30, (Jun 1991). TBI English. 00555279

In an age in which quality is defined as meeting or exceeding customer expectations, exceptional service is best accomplished by training the customer. There is no better way to train customers than with a service guarantee, a simple vow to deliver error-free service. Service guarantees set criteria for customers and create a standard to which workers can be trained, thereby ensuring that the company delivers premium-quality service. Hollow promises or guarantees for less than the customer already expects do not work. A guarantee must be a value-added part of a company's service. It must be unrestricted, specific and clear, meaningful, hassle-free, and quick to pay out. In general, companies that guarantee their services have not been hit excessively

by payouts, and they have reaped significant benefits in increased efficiency, customer retention, and employee morale. Guarantees have helped companies find the roots of service delivery problems, leading to greater success - and fewer payouts - as a program continues.

343. Majumdar, Amit Smolenyak, Megan|Yencho, Nancy. "Planting the Seeds of TQM." National Productivity Review. v10n4. 491-497, (Autumn 1991). NLP English. 00574267

Great challenges face a company locked in a regulated climate. Even under such trying circumstances, many corporate entities have found the key to competitive success in the implementation of a total quality management (TQM) program and philosophy. The Steel Authority of India Ltd. (SAIL) is one such company that is currently undergoing a total quality transformation. Poor quality had cost the company in terms of greater inventory, scrap costs, and by-product ratings, and therefore values had been degraded. SAIL's new companywide TQM program focuses on quality of products and services, human resources, continuous innovation, customer service and satisfaction, and capitalization of corporate resources.

344. "Managing Quality and Productivity in Aerospace and Defense." (Nov 89). Virginia Productivity Center, Blacksburg, VA. 088364000 417206 Superintendent of Documents, GPO, Washington, DC 20402. PC \$15.00. Microfiche furnished to DTIC and NTIS users. English GRAI9007 United States. 1434213 AD-A215 186/8/XAB MDA903-85-C-0237

This document has been designed to provide management teams and leaders in the aerospace and defense (A&D) contracting community with state-of-the-art and practice quality and productivity management concepts, theories, strategies, and techniques. The document is the product of a five-phase, six-year study funded by the DoD; a multi-disciplinary and diverse group of A&D contractors, academicians, military service acquisition elements of the DoD, and the Defense Systems Management College were involved. A simple, conceptual model around which the document is designed is used to facilitate understanding of the quality and productivity management process. The document begins with challenges facing the A&D contractor community. Next,

the importance of the need for visions of the organization of the future are discussed. The document then turns to an innovative and effective way to strategically plan for performance improvement. A conceptual overview of present, emerging, and future improvement strategies and techniques is presented; emphasis is placed on Total Quality Management, the management of participation, and gainsharing, Measurement theory, approaches, and techniques are presented. Reflections on continuous improvement and maintaining excellence end the document. An extensive listing of references and suggested readings are included to facilitate the reader's further study. Keywords: TQM, Total quality management. (kr)

345. Mannebach, Stephanie Vesely, E. J., Jr. "Lessons Learned from Implementing TQM in a High Tech Facility Start-Up." Tapping the Network Journal. v2n1. 24-27, (Spring/Summer 1991). TNJ English Charts. 00573236

Total quality management (TQM) provides valuable techniques for getting through a complex start-up of a high-technology facility. Using TQM at this early organizational stage has the advantage of building it into the culture. The IIT Research Institute team is fulfilling a contract to maintain and operate an on-site Metallurgy Research Facility (MRF) for NASA's Materials and Processes Laboratory. During the first several months of MRF operations, a group of technologists, scientists, and engineers formed a working team dedicated to excellence in the services provided to its customer. A quality plan that creates a structured approach and incorporates TQM principles was introduced. It has been concluded that: 1. TQM can work in a high-technology research start-up, 2. a structured approach is required, 3. management support is crucial, 4. structured team efforts are valuable, and 5. a champion of the approach is vital.

346. Manning, Mitch. "Managing TQM Information Overload." Journal for Quality & Participation. 76-77, (Dec 1990). QCJ English Charts. 00531999

Managers are trying to keep abreast of the rapid growth of information on total quality management (TQM) in an environment of accelerating social, economic, and political change. Experience has proven that the key to managing information is to develop and use a logical and easy-to-remember filing system. There are many information filing systems

available for TQM. For example, the Malcolm Baldrige National Quality Award (MBNQA) criteria can be used to form an excellent system. The MBNQA system has 7 categories: 1. leadership, 2. information and analysis, 3. strategic quality planning, 4. human resources utilization, 5. quality assurance of products and services, 6. quality results, and 7. customer satisfaction. The MBNQA filing system for TQM can enhance management performance just by helping managers organize their thoughts as well as information.

347. Mansir, B. E.; Schacht, N. R. "Total Quality Management: A Guide to Implementation Final rept." (Aug 89). Logistics Management Inst., Bethesda, MD. 082507000 210475 English GRAI9115 United States. 1533030 AD-A232 070/3/XAB MDA903-85-C-0139

Total Quality Management (TQM) is a means for improving personal effectiveness and performance and for aligning and focusing all individual efforts throughout an organization. It provides a framework within which you may continuously improve everything you do and affect. It is a way of leveraging your individual effort and extending its effect and its importance throughout an organization and beyond. Total Quality Management is not a destination but a journey toward improvement. This guidebook will help you get started on that journey. It will help you understand the benefits of continuous improvement and your role and responsibilities in leading the improvement effort in your organization. In it, we briefly explore why continuous improvement is important to each of us. We offer a brief overview of TQM, describe a core set of individual and organizational behavior that has proven key to successful improvement efforts, and offer a general model for your improvement effort. This guide will serve as a frame of reference for the ongoing dialogue about TQM within DoD and its supplier community. And, finally, it will help you set the direction for your own journey of improvement.

348. McGovern, John P. "Quality: The Spirit of Europe." *Journal for Quality & Participation*. v14n4. 18-20, (Jul/Aug 1991). QCI English Charts. 00569186

"Quality: The Spirit of Europe" is the conference theme of the European Organization for Quality's (EOQ) 36th Annual Conference, which will be held in Brussels, Belgium, in June 1992. It is apparent that Europe has been recognizing the competitive potential and necessity of quality management and is doing something about it. At the 34th Annual EOQ Conference in 1990, subject areas included: 1. implementing software quality, 2. the quality improvement process, and 3. training, development, and motivation. EOQ priorities for 1992 include the harmonization of all different European Community country standards to the ISO 9000 series of quality standards and the certification of industry and business quality systems to ISO 9000. The requirements being established by the EOQ are creating a sturdy bridge to total quality management (TQM) in Europe. In the US, past winners of the Malcolm Baldrige National Quality Award could form a National Advisory Council to formulate a national agenda for continuous improvement in TQM.

349. McLaughlin, Curtis P. Kaluzny, Arnold D. "Total Quality Management in Health: Making It Work." *Health Care Management Review*. v15n3. 7-14, (Summer 1990). HCM English Charts/References. 00540761

Total quality management (TQM) is being implemented by a growing number of hospitals and health maintenance organizations. TQM calls for continuous and relentless improvement in the total process that provides care. The nature of the organizational change required to implement TQM can be outlined by contrasting TQM with professional bureaucracy and evaluating points of conflict. Points of conflict include: 1. individual versus collective responsibility, 2. clinical versus managerial leadership, 3. autonomy versus accountability, 4. administrative authority versus participation, and 5. rigid versus flexible planning. The implementation of TQM requires that administrative and medical managers mediate areas of conflict. Action guidelines for the implementation of TQM include: 1. Redefine the role of the professional. 2. Redefine the corporate culture. 3. Redefine the role of

management. 4. Empower the staff to analyze and solve problems. 5. Change organizational objectives. 6. Make the TQM program a model for continuous improvement.

350. McLean, Gary N./Persico, John, Jr. "An Updated Model for Implementing a Quality and Productivity System." *Journal of Managerial Psychology*. v5n1. 23-32, (1990). JMN English Charts/References. 00503989

The total quality management process (TQMP) model is outlined as a development from the original idea of improving quality management process (IQMP). The revised model is intended to overcome deficiencies in the IQMP model. The TQMP model reveals: 1. how to promote more guidance and direction to the organization involved in a quality transformation effort, 2. the role of the steering committee, 3. the importance of statistics, and 4. the role of customers and suppliers. It stresses the importance of process as a key determinant of results. In the new TQMP model, it is proposed that the organization would develop specific plans for addressing the 10 tasks identified as critical for sustaining a quality improvement effort by the Maryland Center for Quality and Productivity. The steering committee would have the main responsibility for developing strategic plans and processes for each of the 10 critical tasks. The TQMP model places a greater emphasis on the need to view the organization and its practices from a process focus rather than merely an outcome or results focus.

351. Melum, Mara Minerva. "Total Quality Management: Steps to Success." *Hospitals*. v64n23. 42, 44, (Dec 5, 1990). HPT English. 00525825

Many leading industrial companies credit total quality management (TQM) as a key to their success. Now, TQM pioneers are emerging in the health care field as well. TQM is a business strategy of continuous process improvement to meet customer needs. Institutionalizing TQM requires strong commitment to 7 key success factors: 1. vision of quality, 2. understanding the process, 3. motivation to change, 4. management leadership, 5. physician commitment, 6. teamwork, and 7. TQM support systems. It is important to have a compelling vision that communicates why the process is being undertaken and how life will be better because of it.

Management must clarify that TQM will become a way of life for every member of the organizational team. Integrating TQM with recognition programs, performance evaluations, budgets, and compensation can help strengthen motivation. Integrating TQM into the organization's support systems may be the most important means of ensuring that TQM will be a way of life rather than just another short-lived program.

352. Merry, Martin D. "Illusion vs. Reality: TQM Beyond the Yellow Brick Road." *Healthcare Executive*. v6n2. 18-21, (Mar/Apr 1991). HEE English Charts. 00551537

Total quality management (TQM) is a philosophy and practice of how people work together in organizational settings. The health care institutions that will succeed understand TQM as a new paradigm of collaboration and focused team effort and can implement the technology and the new organizational transformation imperatives of this paradigm. The continuous improvement concept is actualized through the Shewhart/Deming Cycle, which is the engine that drives TQM. W. Edwards Deming's 14 points are an excellent starting point for health care executives. Particularly germane points include: 1. Create constancy of purpose for the improvement of product and service. 2. Improve constantly and forever the system of production and service. 3. Remove barriers to pride of workmanship. 4. Institute a vigorous program of education and retraining. Health care executives must look to the TQM model with energy and optimism, but also with circumspection. Painful and potentially costly learning experiences await organizations that see TQM as just another program.

353. Odiorne, George S. "The New Breed of Supervisor: Leaders in Self-Managed Work Teams." *Supervision*. v52n8. 14-17, (Aug 1991). SUP English. 00563253

The work world of the 1990s is leaning toward participative management, work teams, and self-managed work groups. Reasons why firms are making this move include: 1. The old division of labor idea has proved to be a source of apathy, anger, and alienation to the people at the bottom. 2. The US economy has shifted from being production-centered to service-

centered. 3. Marketing has changed from the individual salesperson selling to the individual purchasing agent, to team buying and selling. Some pitfalls that can arise in changeover to self-management teams are: 1. Supervisors and managers see participative management as diluting their power and authority. 2. Moving too fast with changes leads to hesitancy and a lower productivity and quality. 3. Teams of 15 or so have a tendency to split into smaller interest groups. A system of self-directed work groups leaves the first-line supervisor with a new set of roles and functions, such as: 1. serving as a planner, organizer, and facilitator for a larger population, 2. monitoring and advising upon the legal requirements of employment law issues, and 3. managing information flow.

354. Page, G. L. "Implementing Self-Managing Work Teams in a High Performance Work Environment Master's thesis." (Sep 90). Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics. 000805004 012250 English GRAI9111 United States. 1520947 AD-A229 468/4/XAB

Many organizations today are continually trying to find ways to increase productivity and to decrease costs. As a result, many businesses are turning to Total Quality Management (TQM) as a means of achieving these goals. This research is a study of self-managing work teams, and aspect of TQM. A case study approach was chosen. The case study was not carried through to completion of the design effort due to time constraints. However, from the data gathered and knowledge gained from the literature review, it appears that the teams are already helping to increase productivity in the company studied. Significant factors in successful implementation of this concept include (1) full commitment and support from management, (2) good lines of communication between line workers, management, and the union, (3) union participation in the design process, (4) a solid organizational structure for the design team, and (5) proper education and training for the employees. Recommendations for further research include (1) carry this case study through to completion, (2) analyze the differences the teams made, and (3) conduct more longitudinal studies in this field. Keywords: Personnel management, Productivity, Theses. (rwj)



355. "Participant Guide for Total Quality Management (TQM): Quantitative Methods Workshop." (30 May 90). Booz-Allen and Hamilton, Inc., Bethesda, MD. 049504000 408597 English GRAI9107 United States. 1507900 AD-A225 736/8/XAB

Contents: Module-(1)TQM Review; (2) Statistical Theory Review (3) Experimental Design and the Plan, Do, Check, Act Cycle, (4) Planning and Doing: Flow Charting and Cause and Effect Diagramming; (5) Checking and Acting: Check Sheets, Pareto Charts, Histograms, and Scatter Diagrams; and (6) Checking and Acting: Control Charts and Run Charts. Keywords: Management planning and control, Quality control, Quality, Management. (kr)

356. Pazak, M. G. "Total Quality Management: A Recipe for Success Study project." (2 Apr 90). Army War Coll., Carlisle Barracks, PA. 025057000 403565 English GRAI9021 United States. 1476664 AD-A223 287/4/XAB

Total Quality Management (TQM) is a high level Department of Defense (DOD) initiative that is being touted as the primary management tool to force the fundamental cultural change in the way the DOD conducts business in the systems age. What is TQM. Where did it come from. What are it's guiding principles. How has it been used. What successes can be attributed to TQM. How can it best be implemented. These questions along with many others are addressed and answered in this work. In addition, an appendix of popular quality improvement models for organizations, their processes, and their individuals is provided. It was concluded that the DOD must embrace the TQM philosophy and proliferate it's principles in order to maximize the return on defense budget dollars. This will require an enormous investment in education, training and time and an equally positive commitment by the DOD leadership to create a DOD wide organizational climate that will stimulate and perpetuate individual productivity enhancing contributions. Keywords: Quality control; Quality management; TQM. (kr)

357. Penzer, Erika. "Why We Won the War." Incentive. v165n5 (Section 1). 34-42, (May 1991). IMK English. 00550648

One of the reasons that the US prevailed in the Persian Gulf War may have been that, almost 10 years ago, the Department of Defense and members of the US Air Force (USAF) began thinking about total quality management. Years of intensive training in quality fundamentals like teamwork, continuous improvement, and performance measurement may have fortified the forces during their time in the Middle East, according to John M. Loh, commander of tactical air command at Virginia's Langley Air Force Base. Loh is credited with spawning and nurturing much of the USAF's quality culture. To try to make operations at the USAF's Aeronautical Systems Division, which Loh headed from 1988-1990, more productive and efficient, he started instilling a customer-centered culture of continuous improvement. Promoting continuous improvement and customer service in the government consistently proves challenging. However, Loh disagrees with critics who claim that the constant rotation of military management detracts from the quality mission.

358. "Program Manager: Journal of the Defense Systems Management College. Volume 19, Number 1, January-February 1990 Bimonthly rept." (Feb 90). Defense Systems Management Coll., Fort Belvoir, VA. 062178000 410036 Superintendent of Documents, Government Printing Office, Washington, DC 20402. No copies furnished by DTIC/NTIS. English GRAI9010 United States. 1444844 AD-A217 659/2/XAB

Partial Contents: Systems engineering -- The key to TQM (Total Quality Management); Program management the Air Force way; Are you Communicating effectively; Exposed -- The real truth about estimating economic effects of competition; Total quality management reading list; Organizational communications. Keywords: Program management periodicals. (EDC)

359. Quilter, Thomas M. "Strategic Management." Executive Excellence. v8n10. 17, (Oct 1991). EEX English. 00578616

The strategically managed firm establishes a clear mission throughout the entire organization and actively supports it with a level of customer-focused operational excellence that only a few businesses achieve and sustain. The Planning Forum has created an alliance between its Research and Education Foundation and the Marketing Science Institute to conduct research that will advance the practice of strategic management and planning in ways that will help business become more customer-responsive and competitive. One of the alliance's research topics will focus on ways of merging the benefits of total quality management and customer-driven management.

360. Quimby, Charlie Parker, Lynda|Weimerskirch, Arnold M. "How, Exactly, Do You Communicate Quality?" Quality Progress. v24n6. 52-54, (Jun 1991). QPR English. 00561786

Many sincere total quality management (TQM) efforts are unsuccessful because organizations do not understand how to communicate quality. To make organizational change occur, an effective quality communication approach must try to influence individual behavioral change, but in such a way that the organization enjoys maximum benefit from the change. Four areas provide the greatest payoff for communication efforts: 1. leadership based on a true understanding of how quality will influence the success of the organization, 2. alignment of business needs, quality plans, and individual actions, 3. appropriate quality training, and 4. quality propaganda and reinforcement. Influencing executive behavior ought to be the early focus of a quality communication strategy. For TQM to work, a plan should be designed that is aligned horizontally with the product-making and service-delivery processes in the organization, as well as aligned vertically with the objectives of the company. Such a plan shows how actions in various locations are related to each other and shows progress toward a destination.

361. Rehder, Robert Ralston, Faith. "Total Quality Management: A Revolutionary Management Philosophy." *Advanced Management Journal*. v49n3. 24-33, (Summer 1984). AMJ English. 00246647

Since 1965, the US share of world trade has declined significantly, and more than half of the goods sold in the US in 1980 were manufactured abroad. To recoup market share, US business must institute a total quality control management system that is a hybrid of outstanding Japanese and American concepts and methods. This system can be termed total quality control/management (TQC/M). According to Kaoru Ishikawa, TQC pioneer, TQC embraces 5 strategic goals: 1. Quality must be sought before profits. 2. The infinite human potential of employees must be developed through education, training, delegation, and positive reinforcement. 3. A long-term consumer orientation must be fostered within and outside the organization. 4. Facts and statistical data must be used to communicate throughout the organization, and measurement must be used as motivation. 5. A companywide TQC/M system should be developed with the focus of all employees on quality implications of every decision and action.

362. Reimann, Curt W. "Winning Strategies for Quality Improvement." *Business America*. v112n6. 8-11, (Mar 25, 1991). CT English. 00543088

Evaluation of the quality programs of applicants for the Malcolm Baldrige National Quality Award has revealed key excellence areas that should be guides for companies as they dedicate themselves to continual improvement. In the area of leadership, the leaders are highly visible and very committed and knowledgeable about quality. The successful companies in the information and analysis area are examples of effective and comprehensive information and analysis systems. Quality planning and business planning should be so closely linked that it is impossible to talk about one without the other. In the human resource area, the successful quality companies have internalized the customer satisfaction factors. In the quality assurance area, there is a great deal of attention to the quality of design, not only in the focus on response time, but on building in quality. In the quality results area, the companies that did well in the award competition report a very broad base of improvements in products, services, and operations. In the customer

satisfaction area, the biggest differentiation is the fact that the high-scoring companies are very proactive in terms of customer expectations.

363. Richter, K. J.; Dierolf, D. A. "Concurrent Engineering Teams. Volume 2: Annotated Bibliography." (Nov 90). Institute for Defense Analyses, Alexandria, VA. 075311000 179350 Institute for Defense Analyses, Alexandria, VA. See also Volume 1, AD-A236 093. English GRAI9119 United States. 1545727 AD-A236 094/9/XAB MDA903-89-C-0003

Specific concurrent engineering practices vary among organizations. There are, however, various management practices that appear to work well for most organizations. This paper presents the reader with specific, useful examples from several defense contractors illustrating how multifunctional concurrent engineering teams are being organized and managed and how concurrent engineering team meetings are conducted and supported. The types of computer support that could be used to enhance the efficiency and effectiveness of concurrent engineering team meetings are identified. The general findings are that there exists a direct relationship between total quality management (TQM) and concurrent engineering, and that many applications of computer-aided group problem solving are possible and practical today for the concurrent engineering team meetings. Areas identified for additional research are the documentation of the decision process and rationale during the product and process definition, the capturing of lessons learned during the implementation of concurrent engineering, and the performance evaluation and training of team members.

364. Rieker, Wayne S. "Where Are We Headed?" Journal for Quality & Participation. v10n4. 32-36, (Dec 1987). QCJ English. 00420739

A well-implemented employee involvement program will go a long way toward solving the US problem of lack of competitiveness and inadequate productivity. The concept will take many directions in the future, including the implementation of: 1. self-managing teams, 2. quality of work life teams, 3. labor-management cooperative committees, and 4. employee stock ownership programs. Employee involvement must address the economic success of the enterprise if it is to be considered successful. Further, quality and customer satisfaction must be the primary focus

of the future. This quality improvement must encompass all aspects of the firm's operation and management, addressing such things as statistical process control. The concept of Total Quality Management (TQM) implies the creation of a participative environment where everyone is involved in making quality improvement decisions. Adoption of the TQM concept is essential and can be achieved only through employee involvement. Japanese experiences affirm the gains to be realized from the incorporation of employee involvement.

365. Salter, James M., II. "Take Systematic Approach to Measuring Satisfaction." *Marketing News*. v25n3. 9, (Feb 4, 1991). MNW English. 00533975

Customer-derived information, the basis for the total quality management programs used in more companies every day, must be systematically defined and operationally deployed to improve customer satisfaction. A model links appropriate research and problem-solving techniques, providing a line of sight that focuses on the customer. It provides a common measure across multiple business units, yet is flexible enough to provide measurable management information at the department level. The steps are: 1. Define goals and how information will be used. 2. Discover what is important to customers and employees. 3. Measure critical needs. 4. Act on the information. 5. Measure performance over time. Using the model to improve and measure customer satisfaction requirements can greatly enhance existing total quality management and other quality improvement programs. It can also stand alone as a first step in focusing an organization on improved customer satisfaction as the key to improved market share and financial performance.

366. Sarazen, J. Stephen. "Continuous Improvement and Innovation." *Journal for Quality & Participation*. v14n5. 34-39, (Sep 1991). QJ English Charts|Graphs. 00576568

Many organizations owe their success to powerful innovations in product or service. Too often, many quality experts focus on the "right" or "correct" application of particular quality tools. This type of thinking can stifle creativity and even result in unnecessary

roadblocks to the basic application of many tools. Ensuring that an organization can compete successfully requires that it build a solid total quality management base. This base must consist of 4 elements: 1. sound problem-solving skills, 2. a passion for continuous improvement, 3. a constant awareness of innovation opportunities, and 4. an understanding of how these elements support one another.

367. Sheridan, John H. "Racing Against Time." *Industry Week*. v240n12. 22-28, (Jun 17, 1991). IW English. 00559033

At a roundtable discussion at Andersen Consulting firm's training center, partners from around the world discussed time compression management (TCM) and total quality management (TQM) - and the link between the 2. A major point stressed was that successful approaches to TCM involve reengineering the process, not merely trying to speed up existing processes. William Darnton of Andersen Consulting in Chicago, said the real gains are made when all the business functions of a company are addressed, not just manufacturing. Masakatsu Mori, managing partner in Andersen's Tokyo office, said Japan's time advantage over the US encompasses more than product development. He added that many Japanese automobile makers are reengineering their total delivery system - from product development through procurement, manufacturing, and distribution.

368. Von, der Embse, Thomas J. "Perspectives: The Challenge of Total Quality Management." *Manage*. v42n1. 15-16, 35, (Jul 1990). MAN English. 00508996

The National Management Association (NMA) has been actively engaged in the subject of total quality management (TQM) since 1986, when the Educational Roundtable recommended the topic as part of NMA's Professional Development Expansion Program. The course has been written and is being pilot-tested in 7 NMA chapters across the US. The TQM course emphasizes thinking and deciding rather than simply learning technical aspects. Practitioners will come away from the course with a mental framework and a versatile toolkit. NMA describes TQM as a system for delivering quality products and services to the customer, and quality products and services are defined as quality commensurate with customer

needs and wants. Organizations, whether public or private, profit or nonprofit, are working to create a product or service that satisfies a customer need. When all employees pay close attention to customer needs, tastes, and desires, the entire organization prospers.

369. Weinstein, Harold P./Leibman, Michael S. "Corporate Scale Down, What Comes Next?" HRMagazine. v36n8. 33-37, (Aug 1991). PAD English Charts. 00565392

The most successful downsizings are those that were strategically thought out from both a business and human resource perspective. After downsizing, one of management's most difficult tasks is to reestablish morale and motivation. The leaders in a downsized company need to convey the organization's new vision and goals in a way that allows people to recommit to the company and instills a sense of adventure. In preparing to downsize, senior management has to clarify its business objectives and define the company's strategic goals. Once the management team is on board with the new business goals, the next step is to communicate in simple terms what is happening to those who will be leaving as well as to those who are staying. If an organization is to retain its best people, there must be a commitment to training, career development, and succession planning. After the downsizing, the management team needs to keep focused on defining the new corporate mission, re-energizing the staff, and conveying a sense of optimistic realism.

370. Wilkinson, Adrian Allen, Peter/Snape, Ed. "TQM and the Management of Labour." Employee Relations. v13n1. 24-31, (1991). EMP English References. 00545544

Total quality management (TQM) has far-reaching implications for the management of labor. Its proponents say that TQM emphasizes self-control, autonomy, and creativity among employees and calls for greater active cooperation rather than just compliance. The major premise of TQM is that quality is the key to business success in the 1990s and to competitive advantage. Improved quality will lead to a reduction in costs. The objective is to have quality become the responsibility of all employees, rather than of a specialist



department. TQM seems to have both "hard" aspects, such as production techniques and tools to interpret data, and "soft" aspects, which are concerned with creating customer awareness within an organization. TQM appears to be consistent with a move toward a more strategic human resource management (HRM) approach of labor. Case studies in the UK involving the Co-operative Bank PLC and Black & Decker manufacturing plant at Spennymoor, County Durham, support this theory.

371. Willis, George. "The "Q" Word and Management Accounting." CMA Magazine. v65n6. 28, (Jul/Aug 1991). RIA English. 00568107

The subject of total quality management (TQM) is important to the certified management accountant (CMA), but the question of its potential importance to public sector management accountants remains unanswered. TQM is organized around just a few principles: 1. It is customer-driven. 2. It emphasizes "doing things right the first time." 3. It necessitates consistent, dedicated leadership, an organization-wide cultural commitment, and objective measurement and reporting systems. In the public sector, there is a trend toward the senior management accountant as strategist or change agent. CMAs are not improbable promoters and champions for TQM because of their breadth of viewpoint and objectivity. To implementation teams, the CMA brings to bear measurement and reporting skills, knowledge of clients, services and available resources, and a broad-based perspective on organizational issues.

#### TQM PUBLIC SECTOR

372. Hammons, Charles Maddux, Gary A. "Total Quality Management in the Public Sector." Management Decision. v28n4. 15-19, (1990). MGD English. 00509023

The US is in serious trouble with respect to national productivity. To resolve this dilemma, the US must rely not only on the private sector, but on the public sector as well. The implementation of a new managerial philosophy, total quality management, requires fundamental

changes in many managerial attitudes, along with the elimination of many prejudices and preconceived ideas pertaining to the work environment. Quality must be incorporated into the design of products. There must be cooperation within and among departments, as well as cooperation with external entities. Employees must be treated as the most important resource. The public sector manager should take action to implement positive change in the workplace. There are no quick solutions to problems; training, education, trust, and cooperation are long-term activities. While their benefits are substantial and lasting, they are not instantaneous.

373. "How to Develop Quality Measures That Are Useful in Day-to-Day Measurement Quality management (Final)." (Jan 89). Office of Management and Budget, Washington, DC. 012565000 English GRAI9110 United States. 1520631 PB91-155150/XAB

The report contains a paper prepared by staff of the Federal Quality and Productivity Improvement Program in the Office of Management and Budget to provide information on constructing useful quality measures. The paper describes step-by-step methods that can be used, and provides examples of quality measures that are being used in both private and public sectors.

374. "How to Get Started Appendix, Total Quality Management Handbook Quality management (Technical)." (Jun 90). Federal Quality Inst., Washington, DC. 099278000 Also available from Supt. of Docs. See also PB91-154807. English GRAI9110 United States. 1520608 PB91-154815

The report is the second of three booklets that comprise the Federal Total Quality Management Handbook. The booklet has a section on the quality gurus (Deming, Juran, Crosby, and Feigenbaum), and a section entitled Federal Supply Schedule (FSS) Information: Requirements for Contracting Total Quality Management Implementation Services.

375. Koons, Paul F. "Getting Comfortable with TQM." *Bureaucrat*. v20n2. 35-38, (Summer 1991). BUR English. 00563471

For the Philadelphia Regional Office of the Department of Veterans Affairs, total quality management (TQM) involves the development of a systematic approach that managers, with the help and assistance of the front-line employees, can use to improve the quality of the services and end products it provides. The office has learned via training that most employees believe that they are doing a good job and thus, if they are to improve the quality of their work, they will have to be told how to do it. While employees should have some control over their job and their experience can be invaluable in improving work processes, there is an essential role that management must fill in directing and guiding the TQM process. One of the problems cited with quality circles in some organizations is that employees who are left on their own to identify problem areas frequently choose working conditions and environmental issues, rather than work process issues and problems. Managers must ensure that team efforts are focused on the organization's goals and objectives.

376. Milakovich, Michael E. "Total Quality Management for Public Sector Productivity Improvement." *Public Productivity & Management Review*. v14n1. 19-32, (Fall 1990). PBP English References. 00557154

Total quality management (TQM) achieves continuous quality improvement without additional resources by emphasizing intensive examination of relationships between existing management processes, extended customer-supplier requirements, and response to valid customer demands. It is a management philosophy and a method of process improvement that is being applied to the US public sector on a broad scale. To improve quality, Deming's (1982, 1986) theories and methods stress both statistical process control and behavioral techniques. His quality improvement concepts include: 1. Create constancy of purpose toward the improvement of product and service. 2. Adopt the new philosophy. 3. Cease dependence on mass inspection. 4. Improve the system of production and service. 5. Institute leadership. Some important issues that can help public managers in their efforts to promote quality management within their

organizations include dependence on theory X hierarchical management, management by objectives, and annual budgeting.

377. Milakovich, Michael E. "Total Quality Management in the Public Sector." National Productivity Review. v10n2. 195-213, (Spring 1991). NLP English References. 00541063

The failure of government productivity efforts to improve the quality of public service has prompted calls for the complete overhaul of management procedures. Past government efforts have been ineffective in motivating employees to continually improve quality. Total quality management (TQM) is a theory-based option that allows public managers to reward truly exceptional individual performance while increasing the capacity for agency-wide cooperation and process improvement. W. Edwards Deming's 14-point TQM philosophy can be applied to the public sector by: 1. creating and publishing to all employees a statement of the aims and purposes of the organization, 2. understanding the purpose of inspection for improvement of processes and reduction of cost, 3. ending the practice of awarding business on the basis of price alone, 4. constantly improving the system of production and service, 5. teaching and instituting leadership, 6. creating a climate for innovation, and 7. eliminating numerical quotas for production.

378. Newman, Constance Berry. "Good Government Needs Good People." Bureaucrat. v20n2. 6-10, (Summer 1991). BUR English. 00563463

Behind the efforts in the past few years to rebuild the public service were the strong recommendations of the National Commission on the Public Service. Known as the Volcker Commission, this group of leading citizens made it clear that the US cannot have good government without good people and that a great nation exists only if there is good government. To have quality human resources management in the public service, at least 9 essential elements must exist: 1. public understanding and respect for government and the people who conduct the public's business, 2. challenging and flexible job opportunities for all, 3. effective and fair recruitment strategies responsive to the changing demographics of the 1990s, 4. competitive compensation, 5. a fair and effective job

evaluation system, including a rational classification system, 6. effective training and development in the context of changing demographics and changes in the nature of work, 7. an effective performance management system, 8. effective employee-management partnerships, and 9. a commitment to total quality management.

#### TQM R&D CENTERS

379. Roberts, George W. "Managing Research Quality." *Research-Technology Management*. v34n1. 28-34, (Jan-Feb 1991). RMG English. 00534118

Research and development (R&D) laboratories must learn to apply quality principles effectively or risk losing their customers and sponsors. For over 15 years, Babcock & Wilcox Co. (B&W) has been implementing nuclear quality assurance requirements for R&D. The principles have been applied to hundreds of projects. B&W identifies planning, execution, verification, and correction as the basic elements that underlie the achievement of quality. Identifying management's expectations and assessing how those expectations are met are significant steps in establishing and reinforcing a necessary culture for quality. Suggestions for achieving research quality include: 1. Plan continuously using effective tools. 2. Control execution with good communication devices and proper calibration techniques. 3. Take action on the data generated by the verification processes to improve the research process. Total quality management requires an understanding of internal practices and their performance.

#### TQM SOFTWARE

380. Slattery, Paul. "A New Way to Appraise." *HRMagazine*. v36n10. 27-32, (Oct 1991). PAD English. 00577832

The purpose of a performance appraisal is to improve performance. Performance Trak (PT) from Performance Trak International is a software product that focuses on what encourages real performance - the quality of

understanding and commitment to what is expected. PT consists of several modules concerning organizational and personal performance. The user can use the performance information in 3 ways. First, by focusing on the data to be entered, the user can adjust the instrument to pick up or compare information for a particular operation. By working with information already entered, the user can compare ratings of particular employees with the ratings of the employees' peers, boss, or customers. The information can also serve as a basis for a real conversation between boss and subordinate. PT's scales and factors do present some difficulties in that some of the factors appear to be traits and suggest performance limits that fall short of what is possible.

### TQM TRAINING

381. Von, der Embse, Thomas J. "Perspectives: The Challenge of Total Quality Management." *Manage.* v42n1. 15-16, 35, (Jul 1990). MAN English. 00508996

The National Management Association (NMA) has been actively engaged in the subject of total quality management (TQM) since 1986, when the Educational Roundtable recommended the topic as part of NMA's Professional Development Expansion Program. The course has been written and is being pilot-tested in 7 NMA chapters across the US. The TQM course emphasizes thinking and deciding rather than simply learning technical aspects. Practitioners will come away from the course with a mental framework and a versatile toolkit. NMA describes TQM as a system for delivering quality products and services to the customer, and quality products and services are defined as quality commensurate with customer needs and wants. Organizations, whether public or private, profit or nonprofit, are working to create a product or service that satisfies a customer need. When all employees pay close attention to customer needs, tastes, and desires, the entire organization prospers.

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