American Society for Quality
ASQ

Quality Connection

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Problem-Solving Success Tip

Jeanne Sawyer, Ph.D.

Use your time for problems that are truly important. Hard as it may be to walk away once you're aware of it, just because a problem is there doesn't mean you have to solve it. Ask yourself and your colleagues, "What will happen if we don't solve this problem?" If the answer is, "not much," then turn your attention to something more important. If you don't know what will happen, find out before you undertake a problem-solving project. It should be clear to you and everyone else involved that the problem is worth the effort—and expense—to fix it.

Quantify the cost of the problem quickly, but as realistically as you can. Include lost opportunity costs as well as real expenses such as staff time to deal with the problem, travel expenses, etc. Use actual costs where you can; estimate where you can't. Then guesstimate what it will cost to analyze and fix it. Write your analysis down, stating all your assumptions explicitly. Get a colleague to verify that your assumptions and estimates are reasonable. Start with a rough "order of magnitude" estimate. That may be enough to answer the question of whether you should proceed. If it's not clear, especially if the cost to solve it will be high, do a more careful analysis.

If it will cost more to fix than to live with the problem, or if the number is even close, perhaps your resources (time, people, money) are better spent on other projects. If you decide to proceed anyway, you can do so with a better understanding of what you're undertaking. On the other hand, if you can demonstrate that the cost of the problem is much higher than the cost of solving it, using estimates based on reasonable assumptions, it will generally be much easier to get the resources you need. You can use your written analysis as a sales tool to help win support for your decision to proceed or not.

We have to learn to distinguish those things that are truly important from those that are merely urgent.

—Jerry D. Campbell

Jeanne Sawyer is an author, consultant, trainer and coach who helps her clients solve expensive, chronic problems, such as those that cause operational disruptions and cause customers to take their business elsewhere. These tips are excerpted from her book, *When Stuff Happens: A Practical Guide to Solving Problems Permanently*. Find out about it, and get more free information on problem solving at her web site: www.sawyerpartnership.com.

Special Thank You

As always, the Section would like to recognize those members who serve as assistant proctors for the various certification examinations. For the December 2002 set of CQE, CQA, CSQE, and CQIA examinations, held at CCBC-Catonsville, the Section was fortunate to have **William**

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(Scotty) Scott and **Suzanne Zolnick** assist Chief Proctor **Maria Burness**. The Section thanks each of these members for giving up a Saturday morning to assist with this important task.

As always proctors are needed for each set of exams. If you would be interested in assisting with the March 2003 series of exams, please contact Maria at 410-229-8801 or at burness@lucent.com

e-QM: Quality Management in a Digital World

by Duke Okes

Introduction

Quality management (QM) practices have helped organizations imbed mechanisms for process management and improvement at multiple levels of their operation. However, questions are being raised about whether QM will be effective in a world that changes much more rapidly, and involves more virtual connections. This paper will discuss how some common QM processes, practices, and tools may need to be altered in the future e-world.

The e-world

Although the change in the value of technology stocks has somewhat caused a reassessment of the path of business taken during the last 5 years of the 20th century, there is no question that the world of the future will be faster and more digital. Networks of organizations and individuals will be created to fulfill a special product/service niche, often then being dissolved when the product lifecycle has matured.

These changes involve disruption of past boundaries, time frames, and methods of communication, and are likely to cause considerable shifts in business processes. Quality management practices will also, of course, be impacted, as has been highlighted by the former chairman of the Juran Institute (Godfrey, 2001):

> *"Rapid globalization poses many new challenges for the quality professional. Many of our current procedures were developed for a much slower world and rely on human auditors and inspectors and cumbersome reporting structures. As we become more enmeshed in the global marketplace, we will all have to redesign many of our quality management practices and rethink many of the fundamentals."*

One executive described his experiences with a virtual firm as: "The fundamental question raised … is to ask if contemporary approaches to management … remain effective for companies that have to move at lightening speed …" (Luther, 2001, p 141). He identified three major areas of concern:

- The tradeoff between speed and waste when making business decisions
- The need for business strategists to better understand information technology as a core for enabling new business models
- How to manage quick and technologically linked business partnerships

Speed is then one of the major issues in the e-world. And not only speed of operation or of new product development, but also of product life cycles. "Companies that once could expect a year of more of market leadership from their investments in new products now can see that shrink to a few months or even a few weeks" (Feigenbaum & Feigenbaum, 1999, p. 29).

Another major factor is that of digitalization, which has enabled new ways of communicating. Customers and employees can have 24-hour access without ever seeing each other face-to-face. Dedhia (2001) and Sinha (2001) identified several major customer relationship issues raised by this virtual access, including:

- Customer support must be available 24 hours/day, regardless of where the customer and transaction provider are located
- This access must take into account different cultural and language issues, as well as different levels of technical (e.g., computer) skills
- All forms of customer support (e.g., inquiry, ordering, delivery, complaints) need to be available through the same portal
- Interactions with the customer will mostly often involve no direct person-to-person interface, but will instead rely on the logic of programmed software

Many of the players involved in developing and delivering the product are likely to also be located in different geographic areas, using digital technology to create a virtual company. Reliability of such an organization will be impacted by how well quality of the business model and the underlying technological infrastructure are assured (Feigenbaum & Feigenbaum, 1999; Sinha, 2001). In addition, the relationship between internal members of the network is less likely to develop the social cohesion and trust that traditionally comes from working together face to face (Okes, 2000).

Impact on QM Practices

Many concepts of quality management assume a linear, predictable landscape, a description that does not fit today's reality. In order to try to identify some of the potential changes in QM processes and practices a two-level analysis is presented. The first is a macro view based on the categories of the Baldrige criteria, and looking at how two major factors, speed and digital technology might impact how an organization would change their approach (see Table 1).

The second is a micro level view, looking at some common QM techniques and how they may change (see Table 2). These analysis also use the following additional assumptions:

- Boundaries (e.g., differences in roles of organizations and individuals) will be less clearly defined
- Organizations will be managed more according to the principles of complex adaptive systems
- Economic friction will be reduced, resulting in an increased focus on costs
- The time lag between cause & effect will be shortened
- Organizations will be expected to continually reduce risk to customers and society

Baldrige Category	***Impact of Speed***	***Impact of Digitalization***
Leadership	• Higher number and wider range of stakeholders and concerns will need to be addressed in developing organization policies and plans • Top management will rely more on employees to define what is possible (e.g., vision)	• A more egalitarian philosophy will be driven by the reverse expertise of youth versus top management relative to information technology
Strategic Planning	• Planning will be done more frequently, by more units/levels, for more narrow and shorter market/product niches • Risk assessment will be a core part of strategy development/deployment	• More competitive intelligence will be done online (e.g., using electronic mystery shoppers and intelligent agents)
Customer Focus	• Life cycle analysis (of customer and product mix) will be used for better prediction of viable niches • Network analysis will be used for assessment of risks to virtual partners	• Data mining and simulation/modeling will be used for better market segmentation • The inquiry-delivery-service cycle will be integrated (Sinha)
Human Resources	• Everyone will become a process manager (e.g., high performance organizations) • Pay will be based on projects/outcomes	• How to coach and/or evaluate a virtual employee? • When and how to use e-learning
Process Management	• How to design, validate, release, and change new products/processes quickly but with high reliability • How to manage outsourced business processes/networked partners (Luther)	
Information & Analysis	• Need for focus on information quality & information security management (Feigenbaum & Feigenbaum) • On-line scoreboards will be at all levels/steps of the organization to allow quicker feedback • Live, on-line modeling of business processes will be available for on-going, quick problem solving (e.g., automated 6σ)	

Table 1 – Changes in QM Practices

QM Technique	**e-QM**
Problem solving tools (e.g., Seven QC tools, seven management tools, SPC, DOE)	Tools will be automated/programmed into business systems, allowing more emphasis by employees on using, rather than creating, such tools.
Auditing	How does one audit computerized, automated business systems, and networks of virtual processes? May require more focus on auditing the design and development, rather than execution, of processes.
Process management	The use of automated time series analysis will be done to identify when changes are occurring (is the process linear, complex, or chaotic; is it transitioning from one state to another?). Cusum and Hotelling charts may be more widely used.
ISO 9000 based quality systems	The multiple and separate systems for quality, safety, environmental, finance, etc. will be integrated (e.g., differentiated standards to ensure effectiveness, then integration to ensure efficiency)
Teams	Teams will be used more for virtual, short term, and ad hoc applications.
Training	Training will be designed to be more learner-centered, adapting to employee's current knowledge and learning style. e-learning will be used when appropriate. Will require QM trainers to be more knowledgeable of learning principles, versus just technical content.
Supplier management	Supplier efforts will focus on the vital few, with the remainder of purchases being made on a bid-per-order/contract basis.
Project management	Rapid execution of projects will be mandatory.

Table 2 – Changes in QM Technique

A few themes might be seen emerging from these analyses, including:

- Knowledge will need to be more widespread of QM-related topics such as strategic planning, process management, and team processes.
- There will be less data gathering, entry, & charting, as many of these processes become automated into business systems.
- Quality personnel will need to better understand information technology (versus just the product) and how to audit a virtual environment.

Summary

Many of these findings are simply an extension of changes already underway, since organizations are recognizing the need for change and are modifying QM practices to meet specific needs. For example, the American Productivity & Quality Center (2001) recommends the following changes in benchmarking practices:

- Focus benchmarking projects on a few key actionable issues
- Rely more heavily on publicly available sources of benchmarking information
    - Use electronic communications to reduce face-to-face time (and related travel costs)

Of course since these analyses are based on current QM practices, they are unlikely to identify new ones that may be required. However, changes in society, industry, and professions occur in an iterative pattern whereby ideas are proposed, tested, expanded, and/ refuted … a learning process. It is hoped that this article will contribute to this process.

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Speaker Bio: *Duke Okes is a private consultant, writer, and speaker on management and quality topics. He is Vice Chair of Quality Management Technology for ASQ's Quality Management Division. He can be reached at 423-323-7576 or dokes@preferred.com*

"Mistakes are the portals of discovery."
James Joyce

"Knowledge comes, but wisdom lingers." **- Tennyson**

Newly Certified Quality Personnel

The Baltimore Section recognizes the following newly certified individuals who have passed the October 2002 ASQ examinations.

Certified Mechanical Inspector

William T. McCrorey
Matthew L. Kidwell

Certified Quality Manager

Randy L. Beagle	Smith's Aerospace
Vincent P. Merz	Information Spectrum Inc.
Mike Ciemian	Corvis Corp.
Mitchell H. Scott	Fairchild Controls
Donald B. Ertel	
Sue Ellen Dietrich	
Ruth A. Bishop	Northrop Grumman

Certified Reliability Engineer

Walter R. Sparks — Fairchild Controls
Bharat M. Desai

Six Sigma Black Belt

Lewis S. Borrelli
Ying Te Liu

We commend each of these individuals that have met ASQ on the Certification battlefield and emerged victorious. They have reached a new level in their professional growth.

Section Pass Rates - October, 2002

Exam	Total	Pass	Per Cent
Manager	8	7	87.5%
CMI	3	2	66.7%
6 Sigma	3	2	66.7%
CRE	3	2	66.7%
CQT	1	0	0.0 %

Comments on the Certification Process

Vince Merz, CQ Manager - Overall I felt the exam was representative of the Body of Knowledge and certainly required superb insight into the individual components. In some instances I found more detail than had expected, such as in critical path analysis specific terminology. I am grateful for having ASQ's Foundation for Quality Learning Series since it was my only focused preparation for the exam. I have had significant roles in quality-related fields since the late 1980's after a 26 year Naval aviator career and prior graduation from General Motors Institute of Technology as an Industrial Engineer. Additionally, over past 2 years as my company's VP for Quality, I have been integrally involved in reaching ISO 9001-2000 registration in July 2002. I was elated when the "Big" envelope arrived, as I had been alerted to its significance! Upon assuming role as VP for Quality I targeted ASQ's Quality Manager certification as a priority, as I felt it legitimized my appreciation and understanding of this professional field. I am personally proud to be joining such a respected cadre' who have previously achieved this recognition.

Bill McCrorey, CMI - I thought the exam was very fair. I signed up for the CMI Preparation course at Catonsville Community College for the Fall Semester. When I showed up for the first class I was informed that it had been canceled. I had taken the CQMgr Preparation course at Montgomery Community College, in Fall 2001 and thought the format was very good. I decided to study for the CMI exam using the same format, which was reviewing one CMI Primer chapter per week and answering the review questions. I referred to the CMI Primer Solutions Manual for each question I answered incorrectly. I also used the

Quality Control Handbook, Quality Technician's Handbook, and ASQ's Handbook of Statistical Tables and Formulas as references. One week before the exam I reviewed all the CMI Primer Review questions again, concentrating on my weak points.

My strategy during the exam was to answer only the questions I was sure I knew the answer to. This took approximately 2.5 hours, and 80 of the 100 questions. Going back and answering the remaining 20 questions took approximately 1 hour.

I've been a CQE since 1988, and that gave me an advantage with statistics and process control. I also have 20 years experience in inspection and testing techniques, which gave me another advantage. After 3.5 hours I felt extremely confident that I passed. I received my successful results in 2 quick weeks.

I would suggest anyone wanting to prepare for this exam to take the preparatory course. The course includes the CMI Primer and Solutions Manual. Other minimum references I'd suggest are the Quality Technician's Handbook, Juran's Quality Control Handbook, and a book of statistical tables and formulas. The last important, since this is an open book exam, make sure your references are tabbed for each subject. This will save you a lot of time during the exam.

Walt Sparks, CRE - A reorganization occurred, transferring the Reliability, Maintainability, and Safety function and personnel into my Directorate. I had never worked in this discipline, having only background from my CQE Exam from 1984. Now I had Reliability Engineers working for me. Preparing for the CRE Exam would give me enough knowledge to be a credible manager in this expanded role. Passing the test was a desired, but secondary goal.

We have great success at Fairchild with the Quality Council of Indiana series of Certification Primers, so I ordered the CRE Primer, Answer Book, and Test Discs. I did this by independent study, as I had done for previous CQA, CQMgr, and CSQE Exams (not recommended unless you are very disciplined, and have a firm Quality Assurance background). I gave myself three months to prepare, which wasn't enough. I kept a study log showing progress through each chapter , study period times, test times, and test scores. It helped pace me so I could finish the primer in time for the test.

I struggled terribly with Probability and Statistics, initially giving up, and completing all other sections first. Initial scores on the tests ranged from mid 70's to mid 40's. The hardest thing to learn was determining which formulas to use for the many kinds of applications. Repetitive problem solving sessions were essential. Once the test scores got to the high 70's I felt I had a reasonable chance. Tabbing the Primer for frequently used data was also essential to find things quickly. I put in 100 hours of preparation time, and worked the 400 sample test questions in the Primer at least twice. I never got to the supplementary test discs.

Test day was typical l- problems I couldn't answer, "Milwaukee-ese" to sift through, ran out of time. I didn't expect to pass, but apparently I had enough Quality Assurance professional inertia to do it. The purists will point at my example and say this is not what certification is about. Well, so what! This was my 5th Certification, so apparently, I have learned something after 20 years in Quality.

Two Key Challenges To Implementing CMM

By Hillel Glazer

The SW-CMM (Software Capability Maturity Model) is a government-funded set of best practices for software development. By following these practices, government purchasers and software developers alike can gain better insight into and control over software projects, thus improving the product's quality and matching the cost and schedule more closely with estimates. So, in order to develop software for the government, developers are required to implement the CMM best practices. However, the large number of unsuccessful and/or painful CMM implementations has proved this implementation easier said than done.

Let's take a look at two points that often make implementing the CMM a challenge:

1. Unlike many typical government standards, the CMM doesn't tell the user "how" to satisfy the criteria, and
2. Many people who attempt to implement CMM have a hard time separating the development details from the management practices.

The first challenge results from the CMM being a "descriptive" and not a "prescriptive" standard. This means it describes the end result (what to do) but does not prescribe the method of getting there (how to do it). Most government contractors have come to expect that standards lay out not only the performance requirements, but also exactly how to fulfill those requirements. Not so with the CMM.

Think of it as though your doctor tells you to "get into shape" but doesn't give you any idea of how "out of shape" you are, what nutrition or exercise regimen to follow or exactly what is unhealthy about the way

you are now. Imagine you've only been shown a picture of what "in shape" looks like, and you're told, "Become like that." Not much help, is it? But that's pretty much how the CMM comes across-especially compared to how it used to be for decades when government standards explicitly directed government contractors in both what to do and how to do it.

The lack of "prescription" in the CMM was on purpose. While it causes a lot of headaches to many organizations implementing CMM, this lack of "how" in the CMM was done to allow each company to create its own approach-based on what works best for it. The CMM is a set of processes, described in terms of general activities. Because of the many ways in which an organization can carry out those activities, each process can (and ought to) be unique to each individual company.

As you'd expect, not every process works for every company. Certainly, processes for developing an e-commerce web site should not be as complex or "weighty" as processes for developing safety critical software running inside nuclear power plants. Processes for software projects in both of these situations should be tuned to their respective development environments, so they wouldn't share too many similarities. After all, these two types of development projects have very different scope, budget, schedule, risks and even testing requirements. Thus, "how to" implement the CMM depends on how each organization manages and develops software.

This leads us to the second point of discussion: development methodology vs. management methodology. As described just above, you'd expect the way in which typical web sites are developed to be different from the way nuclear power plant software is developed. How can CMM work equally well in two such different environments?

Before we can answer that, it is necessary to reiterate that the CMM is a way of managing software, not developing it, the difference is that managing software has to do with business decisions such as estimating, planning, making commitments and controlling the outcome of the software project, whereas developing has to do with the detailed work of designing, coding, commenting and testing the deliverables. Software management practices are what allow the company to be consistent in the way it manages software projects, while specific development practices are better left to each project to determine.

The challenge is that many organizations and consultants fall into a trap: They are deeply accustomed to legacy development practices that were typically used to create large, complex software systems-like nuclear power plant controls and weapon systems. Many of these development practices are inseparable from their associated management methods. Whatever the reason, many CMM practitioners and consultants unwittingly take a "one size fits all" approach when installing CMM practices, regardless of whether they are implementing them on Information Age software or Cold War era software. Such approaches result in processes that impede development productivity, increase overhead and generally get abandoned for these reasons.

So, in answer to the earlier question, CMM can work equally well in very different environments as long as the way in which CMM is implemented is completely a reflection of what works for each particular environment. In other words, if an organization has a way of managing and developing software that fulfills its clients' needs as well as its own business goals, successful CMM implementation must start with those existing business processes. (If the company's existing development and/or management processes are a chaotic mess, then certainly, such basics must be established first before CMM will do any good.)

Finally, while we've established that what works for one company may not work for another, what still needs to be addressed is how to make it work for your company. The steps are simple. Any company can follow these steps with or without a CMM (software process improvement) consultant, although seeing the world the way the CMM sees the world is a little tricky at first.

Whether you want to be assessed to the CMM or just achieve much of the best practices from it, follow these steps: (1) Understand your company's current software management and development processes; (2) Understand the CMM; (3) Perform a gap analysis between your company's existing processes and the CMM's activities; (4) Target whichever CMM/internal process area(s) you feel will have the most immediate (or overt, measurable) impact; and (5)ÊCreate and follow an implementation plan that includes formalizing and piloting your processes in line with what works for your company and the level of process discipline your company can realistically be expected to assume.

While implementing CMM has its challenges, overcoming them is fairly straight-forward. A software process improvement consultant who takes the time to understand your organization can cut much of the

guesswork out. Whether a company takes to implementing the full CMM or is looking for just enough process to provide it with insight into and control over its work practices, there is a way to do so without throwing its development environment for a loop. For those companies who do so, the benefits gained brightly outshine the initial challenges.

Hillel Glazer is the principal of Entinex, Inc., a consulting firm specializing in technology management-improving the profitability of technology developers and maximizing the productivity of business IT consumers. He can be reached at 877-ENTINEX, hillel@entinex.com or on the web at www.entinex.com.

30th Annual Delaware Quality Conference Set

The 30th Annual Delaware Quality Conference - "Designing For Success" - will be held on March 6, 2003 at the University of Delaware, John M. Clayton Hall, Newark Delaware. The highlights of the conference include:

- Successful Strategies Using Six Sigma
- Data-based Marketing and Data Mining
- Work Flow Mapping and Analysis
- Values and Systems Process
- Malcolm Baldrige National Quality Award
- Recipients of the 2002 Delaware Quality Awards

Elizabeth Keim, President of ASQ, will deliver the keynote address. Some of the featured presenters include Dennis Arter, The Audit Guy; Jim Folaron, Six Sigma Master Black Belt; David Little, Region 5 Director and Ronald Snee.

Additionally, there will be a workshop on ASQ Section Leadership, open to all, on March 7, 2003, conducted by Regional Director David Little.

For further information, visit the web site at:

www.continuingstudies.udel.edu/special/dqc/

Quality Assurance Association of Maryland

The Quality Assurance Association of MD has scheduled the following meetings . They run from 8:30 am to 3:00 pm and include a continental breakfast and lunch. The presentation lasts until lunch and may continue into the afternoon. In some cases, there is a Q&A session in the afternoon.

February 11, 2003- Documenting Your Quality Management System for ISO9000/2000

March 11, 2003 - The Role of Information Management in Supporting World-Class Performance Jamie Ambrosi, Baldrige National Quality Program

April 15, 2003 - Web Design

May 20, 2003- Joe Jarzombek, Deputy Director for Software Intensive Systems, Office of the Secretary of Defense (Invited)

For further information on these programs contact QAAM at qaam@hotmail.com .

"Mistakes are the portals of discovery."
James Joyce

"Knowledge comes, but wisdom lingers." - **Tennyson**

ASQ - Baltimore Section 0502

THE VISION: ***To be the Baltimore Metropolitan Area recognized resource on issues related to Quality.***

OUR MISSION: ***To create value for our members and business professionals at large by providing opportunities for professional development, serving as a resource for managing quality in the Maryland community.***

U.S. Senate Productivity & Maryland Quality Awards

The University of Maryland Center for Quality and Productivity presents:

The U.S. Senate Productivity and Maryland Quality Annual Awards Luncheon
March 3rd, 2003
Johns Hopkins Applied Physics Laboratory
11100 Johns Hopkins Road
Laurel, MD

Please join us at the U.S. Senate Productivity and Maryland Quality Awards annual luncheon presentation - Strategic Planning and Development.

This year, we are excited to present ***Leadership and Strategic Planning: How to Transform an Organization***. **William Thompson**, Vice President of Strategic Development and co-author of *CQI and the Renovation of an American Health System- A Culture Under Construction* (an ASQ publication), from SSM Health Care- the 2002 Baldrige Award Recipient will share his organization's views on Strategic Planning and development. Answering organization-wide questions such as:

1. Where are we now?
2. Where do we want to be?
3. How are we driving results?
4. What is the risk/return trade-off?
5. How do we measure our progress?

Also there will be opportunities to network with over 200 professionals representing the sectors of health care, service, manufacturing, public sector, and education Immediately following our speaker, we will have our panel of distinguished Marylanders including **Jim Perdue**, from Perdue Farms Inc as well as a senior executive Health Care Official.

Also, there will be the presentation of 2003 U.S. Senate Productivity and Maryland Quality Awards by **Senators Paul Sarbanes** and **Barbara Mikulski**

We look forward to seeing you at the presentation of the 2002-2003 U.S. Senate Productivity and Maryland Quality Awards on Monday, March 3, 2003.

Seating is limited, so sign up today. For further information, call 301-403-4413 or 301-403-4101 or visit the web site at www.umcqp.umd.edu

The U.S. Senate Productivity and Maryland Quality Awards are dedicated to aid organizations to assess performance and accelerate performance improvement using the Baldrige Criteria for Performance Excellence. The awards honor Maryland organizations that have made significant progress in quality and productivity improvement within the categories of manufacturing, service, public sector/non-profit sector, small business, health care and education.

Work in the 21st Century
Will Recognize Human Potential
by Peter B. Grazier

Last July I spoke at the ***World Future Society's Eighth General Assembly*** in Washington, D.C. I was asked to address how work might change in the future, looking at the year 2010 and beyond. The following is the text of what I related and what I sincerely believe will occur, given what we know today.

The Context

Increasing competition in the world economy will continue to force companies and governments to search for greater effectiveness and efficiency in the workplace. Since technology and administrative systems are available equally to all organizations, there will be recognition of the premise that the primary distinguishing factor in performance lies with the untapped potential of the workforce. As a result, **the following three trends will gain momentum:**

1. High-Intensity Collaboration

The pace of change is dictating that organizations renew themselves rapidly, fueling the need for innovative ideas. Through recent workplace innovations such as employee involvement and empowerment, there is now recognition that workers at all levels of the organization are a significant source of creative thinking. The traditional division of work between thinking and doing will cease to exist, requiring all workers to become part of an organization-wide collaboration process. Team-based problem solving, innovation, and product development will accelerate and become standard operating processes.

Current evidence of this trend includes:

- Growing use of employee teams
- Redesign of workplace systems and physical space to enhance collaboration
- An increase in team-based education in both primary and secondary schools
- Evolution of team-centered software (e.g. Lotus Notes)
- Legislation to remove restrictions to workplace collaboration (The Team Act)

2. Shift in leadership competencies from technical to human skills

Historically, people have been promoted in the workplace by demonstrating technical, administrative, and decision-making abilities. Additionally, traditional thinking held that strong leaders were necessary to control the behavior of workers.

As competition has forced organizations to increase management/worker ratios significantly, the entire paradigm of work is being challenged. The control mentality is being replaced by a commitment mentality as workers are being asked to take on more responsibility and accountability. Accordingly, leadership skills must change to accommodate this shift.

There will be an increase in the need for leaders who understand human behavior and potential, engender cooperation and collaboration, and stimulate creativity and innovation. As management ranks continue to thin, leaders will depend more than ever on these skills to create this high-commitment, high-performance workplace.

3. Enhanced/expanded role for the frontline worker

Perhaps no other role will be as affected by competition as that of the frontline worker. As management ranks thin, more of the tasks formerly performed by these managers will move to the front lines.

Therefore, the worker of the future will need to understand a full range of technical and administrative skills such as budgeting, planning and scheduling, quality control, performance measurement, vendor and customer interaction, hiring, purchasing, process improvement, problem solving, procedure development, and more.

These workers, without day-to-day guidance, will depend more on themselves for direction and resources. Workers will also need multiple skills to accommodate shifting priorities and needs within the organization. They will operate more as independent contractors within a team context, moving from team to team as the need arises. This will challenge school systems[1] and companies to develop curriculums that support this expanded role, and will also challenge the worker to take full responsibility for rapid development of skills.

Resistance to Change Will Impede These Three Trends

The full implementation of these changes is at least 15-20 years away, and perhaps more, for the following reasons:

- 20th Century work has been driven by the control mentality with a clear division between thinking and doing. The current model of work is also characterized by a parent-to-child approach. The new model requires a parent-to-parent or adult-to-adult environment---a significant change in perspective. Leaders trained and rewarded under the old system may never fully accept the old one.
- Managers fear loss of control by moving responsibility closer to the work. Many doubt the ability of the worker to accept responsibility for organization performance.
- Managers fear personal losses from the change such as loss of job, loss of prestige, and fear of failure with the new concepts.[2]
- The current workforce, because of prior conditioning, is uncomfortable with collaborative concepts and may always have difficulty in application. It will be at least 20 years before today's children, some of whom are receiving this training, will have influence over workplace behavior.

Additional evidence of this resistance has been demonstrated by the rapid return to autocracy through top-down driven reorganizations and restructurings. After years of moving forward with employee involvement, empowerment, and team concepts during the 1980's, the 1990's ushered in a wave of downsizing that has negated much of the progress made. Managements were eager to regain control and return to Taylorism[3], and did so under the banner of reengineering the corporation . Consequently, organization-wide collaboration has been dealt a blow that will take years to recover.

For these reasons, full workplace collaboration-and consequently, full utilization of human potential will take years to achieve. However, the need for creative and constant renewal of the organization will continue to drive the trend.

(This article first appeared in EI Network newsletter September, 1996.)

1 - See *Teaching Team Skills Earlier…Much Earlier*

2 - See *Supervisors in Transition*

3 - Taylorism - ***Frederick Winslow Taylor*** *(1856-1915) founded the science of industrial management, and developed principles concerning efficient factory management. His concepts were widely applied to businesses and industrial plants in both Europe and the United States. One significant element of Taylor's philosophy was that there was a clear distinction between thinking and doing. Taylor taught that it was management's role, as experts, to develop the processes and procedures (the "thinking" aspect of work) and the worker's role to carry out (the "doing" aspect of work).*

(Pete Grazier can be reached through the website: www.teambuildinginc.com.)

Recertificatrion

During June 2002, twenty-seven out of a possible thirty-one members of the Section recertified and maintained their certification. Included in these individuals are:

Craig Close
Elizabeth Coffman
Milton Cowperthwaite
Gilbert Cuffari
Eva D'Ambrosio
Lloyd Dixon
Deborah Duschl
Beverly Earman
William Erikson
Morgan Hall
Glenn Hollenbeck
Samuel Hom
Shannon Hopkins
Harry Howard
Kenneth Ingle
Wesley Jue
Thomas Kline
Charles Mooney
Carol Nelson
Ronald Northcutt
Ruth O'Brien
Maureen O'Neill
Scott Parsowith
Roy Phillips
Ronald Rosenkoff
Frank Vojik
Michael Zimmerman

We commend each of these individuals for their efforts.

A reminder to those due to recertify in December 2002. You **must** have your recertification package in to Howard Swartz by June 30, 2003. Send the data to:

Howard Swartz
8 Timber Way Court
Reisterstown MD 21136

Those normally scheduled to recertify by June 30, 2003 are encouraged to start getting their recertification information and substantiating data together now so that they may submit their packages in a timely manner.

Wanted: Judges for Baltimore Science Fair

As in past years, the Baltimore Section is again supporting the Baltimore Science Fair in March 2003. The Fair, sponsored by the Kiwanis and Towson University, attracts winners of school and county-based science fairs from the Baltimore Region. Students represent public and private, middle (Division 1) and high (Division 2) schools. The Science Fair also chooses two overall winners to the international competition.

The Baltimore Section awards first and second place in each Division for the use of statistical methods in a science fair project. We also recognize teams of students for effectively working together to solve their chosen problem. To provide these awards and recognition we need **YOU** to volunteer as Science Fair Judges. The time commitment is for a Saturday in March from 9 AM to 1:30 PM at Towson University's Student Union. Your experience in the Quality profession and desire to help and encourage students is required. In depth knowledge of statistics, while desired, is not required. If you are interested, please contact **Kevin Gilson** at 410-864-2428 or kgilson@sierramilitary.com as soon as possible.

Variations on Murphy

While we are all familiar with the great axiom of life, commonly referred to as Murphy's Law, we may not be familiar with some of the many variations and corollaries, The following are some of the different forms of this famous axiom.

The eye of the chief inspector is more accurate than the finest instrument.

In any collection of data, the figure that is most obviously correct is the mistake.

After the last of 32 screws has been replaced, it will be discovered that the gasket has been omitted.

Interchangeable parts won't be.

If you do someone a favor, it becomes your job.

The probability of any given event occurring is inversely proportional to its desirability.

Dimensions are always expressed in the least usable terms.

57th Annual Quality Congress
May 19-21, 2003
Kansas City Convention Center
Kansas City, MO

Duhan Nominated As ASQ President-Elect

Daniel M. Duhan, a past Chair of the Baltimore Section, has been selected by the Nominating Committee of ASQ to serve as President-Elect of the Society.

He is a subcontracts and business operations manager at Northrop Grumman Corporation in Baltimore, MD. He is responsible for subcontracts management, security, facilities, government property administration, and business operations associated with defense contracts. An ASQ member for more than 20 years, Duhan is currently ASQ's vice president and chair of the Community Good Works Program. He has served as a national director, Baltimore Section chair, Division Affairs Council chair, Education and Training Board chair, Technical Program Committee chair, and Conflict of Interest Taskforce chair. He has also served on numerous ASQ committees, councils, and task forces, including the Membership Committee, New Business Development Advisory Committee, Professional Ethics and Qualifications Committee, Strategic Planning Committee, Professional Development Council, and the Annual Quality Congress Program Committee. Duhan earned a degree in electrical engineering from the University of Tennessee and holds three patent disclosures associated with information processing and electrical performance analysis.

If elected to this position, he would be installed in this office during the 57th Annual Quality Congress in May in Kansas City, MO. His term would then begin on July 1, 2003. He would automatically become the Society President on July 1, 2004.

Dan would become the third member of the Baltimore Section to serve as President of ASQ. Previously, the late **Bob Reese** of McCormick and **Jack West** of Northrop Grumman have served in this position.

Congratulations are extended to Dan on his nomination. The Section wishes him success as he fills these offices in ASQ.

New Section Web Site Announced

The Newsletter header contains a change which will be a benefit to all members. There is a new web site address listed for the Baltimore Section, ASQ. Thanks to the efforts of **Tom Stewart**, Section Web master, the new web address for the Section is www.asqbaltimore.org . This will now be the location for all information about the Section, including electronic copies of the monthly meeting notices and the Newsletter. Visit the new site for the latest information concerning the Baltimore Section.

Next Newsletter Due Date **March 15, 2003**

Certification Exam Schedule

Examination	Application Date	Exam Date
CQE/CQA/ CSQE/CQIA/ CCT (Pilot)	April 4, 2003	June 7, 2003
CQT/CRE/CMI/ SSBB/HACCP/ Biomedical/ Quality Mgr.	August 22, 2003	October 18, 2003
CQE/CQA/ CSQE/CQIA/ CCT	October 3, 2003	December 6, 2003

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