American Society for Quality
ASQ

Quality Connection

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Chairman's Message

Frank Vojik

As I write this in early September, the celebration of another National Quality Month in October is just on the horizon. It's hard to believe but it's been 16 years since the first NQM was celebrated. Three presidents - Reagan, Bush, and Clinton - have proclaimed the importance of National Quality Month. Since the inception of NQM, much has happened to shape how we view quality, and new philosophies and tools have dramatically altered the quality field itself.

Think about it. Since 1984 we have seen the inception of the ISO 9000 series of Quality System Standards, the Malcolm Baldrige Award, state quality awards, programs such as Cost of Quality, Total Quality Management, and Six Sigma - just to name a few of the more prominent movements. When I first put pen to paper (perhaps I should say fingers to keyboard!) to write this article, I thought long and hard about what I would finally say. It finally came to me that instead of writing about quality movements, programs, or conferences, I should address what quality means to each of us - and not just in the workplace.

I'm talking about taking ***Quality as a Way of Life***, about taking the tools and improvement philosophies we use every day and applying them to our everyday lives. A few years ago the editors of *Quality Progress* ran a two-part article illustrating how quality improvement initiatives do not have to be limited to what is done at work, but can be adapted to improve ourselves, our families, and the community at large.[1] Here are some examples:

- TQM has been used by charity executives and volunteers to make charities more efficient and eliminate waste, rework, and unnecessary complexity.

- Emergency medical services have employed tools such as radar charts and SPC charts to eliminate variation and waste in their processes and make them more effective in the delivery of emergency care.

- A Boy Scout troop in New York used tools such as Affinity Diagrams as an aid in first-aid training.

- The PDSA (Plan - Do - Study - Act) cycle has been used to improve athletic performance in sports such as basketball, football, and track & field. For those of us into physical fitness, short-run control charts have been used to monitor and improve workout performance!

- A obvious local example is the work our Section has done using the Koality Kid Program in schools such as Arlington Elementary.

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Chairman's Message *(Continued from page 1)*
I could go on but you get the point. As quality professionals, we employee a variety of tools and techniques in the workplace. Many of these can be effectively transferred to situations in our homes, places of worship, and leisure activities. How can we do this? For a start, try applying the philosophy of Statistical Thinking.[2]

Statistical Thinking is philosophy of learning and action based on the following fundamental principles;

- *All work occurs in a system of interrelated processes,*
- *Variation exists in all processes, and*
- *Understanding and reducing variation are the keys to success.*

This philosophy and its underlying principles address the teachings of Deming, Juran, and Crosby and can be applied in any situation in any location. It's the manner in which information is viewed, processed, and converted into action steps. It can be applied to any situation because it's a philosophy of thinking, a way of looking at the world, not a recipe for mathematical calculations or how to statistically crunch numbers. Since I've first learned of this philosophy, I've consciously tried to apply it in all facets of my work and home activities. It's my way of applying Quality as a Way of Life.

My NQM challenge to you is to bring quality into all facets of your lives, by applying the principles, tools, and improvement techniques we use every day to better yourselves and the world around you. ***Make Quality a Way of Your Life***.

[1] Stratton, Brad. "Quality as a Way of Life." Quality Progress 30 7 (1997) 29-30. "Quality as a Way of Life." Quality Progress 30 10 (1997) 44-45.

[2] ASQ Statistics Division. "Improving Performance Through Statistical Thinking." Quality Press. 2000.

Quality is not an absolute, nor is it a continuously improving standard. It is a reflection of the expectations of the individual, which in turn are conditioned by society and the state of the nation at a particular point in time.

Linda Campbell, CEO, UKAS, U. K.

Quality management has a long history of challenging systems in organizations.

The Future of Auditing

by Duke Okes, CMC

Introduction

Based on the number of ISO 9000 registered companies in the U.S., we could predict that as many as 500,000 people have become internal quality system auditors since the early 1990's. Any profession that undergoes this massive influx is bound to see several changes as a result. Although some changes due to increased audits have already occurred, it is likely that many more will come about in the near future.

One change that has occurred is that companies are now more accountable, both to their internal auditors (employees) and to the external registrar, for having a formalized quality system in place. The organizational congruence that this requires -- actually doing what we say we're going to do -- is no doubt a positive change. The changes have hopefully also impacted customers, who receive higher quality products produced by business processes that now operate more consistently.

However, the increase in quality audits also means that significant resources are now spent each year in the audit process. How many organizations (or quality managers) can actually quantify the value added from to the investment? Most success stories appear to be based on purely anecdotal information, but in today's business environment any function or process that cannot demonstrate a contribution to either the top line or bottom line is at risk. It's therefore worthwhile to think of ways that auditing might be able to change in order to become a more value-added tool.

Remember that audits are simply another form of inspection, only conducted at a higher level (e.g., process or system, rather than product). Most of today's audits simply measure compliance to a standard, whether it is an external standard such as ISO 9001, or internal standards in the form of company procedures. Yet quality professionals know that inspection is usually only 80% effective, and that's based on a sample size of 100%! Audit decisions are based on a very small, usually statistically insignificant sample.

So what can be done to improve the audit process? This paper defines three possibilities. The first is that once it is known that the system is in place (that is, it complies with stated requirements and practices), audits should see whether the system is actually effective. A second opportunity is to improve the efficiency of the many different types of audits done in most organizations, by integrating them. And a final option is to apply audits at a more strategic level.

Effectiveness Audits

What is the purpose of obtaining ISO 9000 registration, or of a particular element of the ISO standard (such as Design Control)? Some would say, "To meet a contractual requirement of being ISO registered," which is halfway correct. It is to meet a contractual requirement, but the contractual requirement needing to be met is "preventing nonconformity at all stages from design to servicing" (ISO 9001-1994). That is, the purpose of putting in place a formal quality system is to prevent problems from occurring … to make the organization perform better.

This means that audits should see whether processes and procedures are effective at meeting their intended purposes, and the only way to do this is to look at performance indicators related to the process. For example, the purpose of ISO 9001 element 4.6 Purchasing is to "ensure that purchased product conforms to specified requirements" (ISO 9001-1994). An effectiveness audit would then look at how often suppliers do not meet requirements (e.g., quality and delivery), then look at what there is about the design of the purchasing process that allows these problems to occur. The investigation would asking questions such as:

- Are the proper criteria being used to select suppliers?
- Are suppliers provided with sufficient information on the customer's products and processes so that they understand what the impact of variation in their own processes would be?
- Are suppliers only given feedback on how their product performs when there's a problem?

The purposes of all clauses of ISO 9001 are not clearly stated in the standard, nor are all of the reasons given performance oriented. But measures could be established that enable knowing whether or not the processes are meeting expectations. Audits then involve reviewing performance indicators, and when an indicator shows poor, worsening, or not-improving performance, auditors can begin to do root cause analysis. What elements of the quality system contribute to that performance indicator? What about the processes and/or procedures could be changed to improve the design of the system to make it more effective?

Effectiveness audits require that auditors be systems thinkers and problem solvers, and not all are. But for those who can be, effectiveness audits provide a whole new way of looking at the business, and provide the organization with information that is more valuable than just another audit nonconformity. Audit findings then result not just in addressing special causes, but also common causes created by the design of the quality system.

The DIS version of the new ISO 9001 standard requires that organizations set objectives "at relevant functions and levels within the organization," and for each "product, project, or contract" (ISO/DIS 9001-2000). This means that even external auditors will have the ability to see whether the quality management system is performing according to expectations. If a company is doing effectiveness audits, they will already know.

Integrated Audits

Of the time that it takes to prepare for, perform, and report an audit, typically only about one-half is spent actually doing audit interviews and reviewing records. The other half is getting ready for the audit and documenting and reporting the findings. Improving this 1:1 ratio would result in a higher efficiency audit.

It probably also seems strange to employees that they're audited one month on quality management, the next month on safety management, and the following month on environmental management. What this says to them is that each is a distinctive and separate process, but of course they really aren't. For most positions in the organization the employee has responsibility for issues related to quality, safety, environment, human resources, information systems, and finance. They don't come to work and say "Today I'll do some safety stuff, and tomorrow I'll do some quality stuff." They must integrate all the requirements into one job.

So why are audits being done according to silo thinking? Often it's because the managers of each of the systems, and the auditors of each system, are specialists who only focused on that one aspect of the business. Suppose that instead a company took some of their quality auditors and trained them in safety audit requirements. Would there be some efficiencies gained? Of course … performing activities in parallel is a classic approach to reducing cycle time.

How much further could this be taken? Suppose an audit generalist, someone who understands auditing very broadly and deeply, guides the audit team. A group of specialists who are trained in one or more systems (e.g., environmental, quality, safety, finance) can work with the generalist to carry out the audits, looking at multiple systems at one time. They can also look at whether the systems are well integrated (e.g., from a design, documentation, and training standpoint).

There are some differences that would need to be taken into account. Since safety and environmental

audits involve formal (and legal) regulatory requirements, reporting of nonconformities of these systems must be handled differently due to the associated risks. Financial audits also typically use a much larger sample size. But the basic audit process is the same … "What are the requirements and are they being met?"

The folks in Geneva, Switzerland are already working on audit integration. The ISO 10011 standard for quality auditing is being combined with the ISO 14011 standard for environmental auditing; the result will be an auditing standard ISO 19011. For companies that hold registration to both ISO 9001 and ISO 14001, registrars are able to audit both systems simultaneously if auditors are properly qualified. Companies should also begin performing at least a portion of their internal audits this way. The result will be more efficient audits and a more systemic look at the business.

Business Audits

Suppose that a team of auditors took the organization's strategic plan from three or four years back and 1) reviewed it for adequacy, and 2) determined whether it was actually implemented. Adequacy would involve looking at things such as:

- Did the plan seriously consider industry, economic, technological, and social trends?
- Did it include alignment of all business resources (e.g., financial, customers, products, human resources, business technology, suppliers, information)
- Was past performance used to identify fundamental problems or opportunities relative to management practices?

Assessment of implementation would look at the results, including issues such as:

- Was the plan actually carried out?
- If a portion the plan wasn't implemented, was it because the marketplace changed or did someone drop the ball?
- What aspects of the plan were done well and which exhibited problems?
- Did management regularly review how well the plan was being carried out, and respond to problems as well as changes in the environment?

Auditors would then look at the plan for the following year, and repeat the process. This time they would also assess the logical linkage of the plan with that of the previous year's plan and results. The process would then repeated until the current strategic plan is being evaluated.

Peter Drucker first mentioned the idea of business audits several years ago in his book *Post-Capitalist Society*. The number of times that companies have announced layoffs of 10 – 20% of their workforce in the past two decades indicates that it's time this type of audit be implemented. Layoffs and massive restructuring indicate that errors occurred several years before, and have probably been continued and multiplied. The purpose of business audits is to hold senior executives accountable for effective management of society's resources. Looking at profitability is far too late and too narrowly focused, and the books can easily be manipulated.

Business audits are obviously difficult to perform. The process requires knowledge of the industry, of finance, of strategy formulation, of operations management, etc. The ideal audit team would represent customers, suppliers, shareholders, employees, and general society, and would ensure that the business is being managed according to generally accepted effective business principles.

Summary

Quality professionals have contributed significantly to the performance revolution in U.S. industry. However, as with any field, we must be continually looking for ways to add greater value and improve efficiency. Compliance audits are a required component of a good quality system, but are not enough.

We should begin to focus on whether the system is achieving the results that are necessary in today's business environment, a function that effectiveness audits can perform. We should also find ways to make audits less cumbersome, costly, and time consuming; a role that integrated audits can play. We should also be thinking about what role we might play in performance of business audits. Although such audits are probably not on the radar of many business organizations, they are almost surely going to be showing up on society's screen sometime soon.

Biography: *Duke is a consultant, educator, writer, and speaker on management and quality philosophies and technologies. He has been in private practice since 1985 working with companies in North America, Europe, and Asia. He is a certified management consultant (Institute of Management Consultants) and an ASQ certified quality manager, quality engineer, and quality auditor. He is a Fellow of ASQ and the Vice Chair of Quality Management Technology for the Quality Management Division. He can be reached at 423-323-7576 or dokes@preferred.com*

Divisions Corner

There are many benefits to being a member of the **Health Care Division** (HCD). These include:

Networking: The HCD consists of an extensive network of health care professionals interested in improving the various facets of health care quality. Networking opportunities occur at local ASQ section meetings, the Annual Quality Congress (AQC) and through your Regional Councilor.

Education: There are many educational opportunities for HCD members, including a health care track at the AQC, various educational seminars offered around the country throughout the year and books geared toward improving health care quality.

Newsletter: This provides HCD members with pertinent issues and happenings in the health care industry.

Willingness to Share: HCD members are open and willing to share their experiences with colleagues. If you're considering changes or applications, network with other HCD members and discuss what they learned from their experience.

The HCD is open to partnering with other organizations to provide greater value to its members.

Members: Members of the division include health system administrators, physicians, nurses, allied health professionals, students and consultants interested in the pursuit of the improved quality of patient care.

Activities and Services of HCD:

- Co-sponsors several annual conferences on health care quality improvement, including a tutorial program.
- Collaborates with other major health care quality organizations.
- Produces a speaker's list on health care quality improvement.
- Takes an active role in supporting ASQ's initiatives for quality improvement in health care.
- Sponsors the Health Care track at the AQC.
- Provides a collegial environment for a professionally diverse membership to disseminate research, knowledge and innovation in health care quality improvement.

HCD Special Projects 1999-2000

The Body of Knowledge Committee (BOK) revised the BOK matrix that was accepted by the Division council and forwarded to ASQ Headquarters. Also, a survey was prepared asking members if the Division should, for healthcare quality, develop a new certification or an "add-on" to existing certifications.

At the AQC in Indianapolis there was an overview given on the progress of the BOK Committee and the results of the survey, which was presented by **Lynda Winterberg**, RN, MBA, HCD Secretary and Chair of the HCD BOK Committee. The presentation included a review of the ASQ BOK Matrix and the items that were added to the Matrix by the HCD. The presentation also included a discussion of competencies and credentials for the Healthcare Quality professional and the need to continue to develop the leadership and expertise of our membership.

At the AQC, leadership of the HCD and NAHQ met and agreed on the following common goals: (1) Promoting knowledge for healthcare QI professionals, (2) Networking with other QI professionals. It was agreed by leadership of both organizations to continue communication and potentially collaborate on the development of educational conferences. There was agreement that the following educational topics were needed for both the HCD and NAHQ:

- To Error is Human
- Root Cause Analysis
- ISO 9000 for Healthcare
- Clinical QI Measurements and Benchmarking
- QI Tools and Techniques

Plans are underway to jointly sponsor a conference in Cleveland, OH. with the Food, Drug and Cosmetic Division ASQ. FD&C and HCD representatives felt that Cleveland would a suitable host city because healthcare is a leading employer that has a large potential to attract more non-member service industries. The healthcare organizations in the local area include the Cleveland Clinic and the University Hospital System. The date for the conference would probably be the spring of 2001, prior to the AQC.

A Medical Errors Special Interest Group (SIG) between the Society for Healthcare Epidemiology of America (SHEA) and the Health Care Division was formed to address medical errors and other issues related to healthcare quality. The SIG, an active, group with diverse professional backgrounds as well as geographic locations, formulated goals and objectives. Working groups were formed for each of the 8 objectives:

- Draft a position paper
- Make proposals to the parent organizations
- Develop consensus panels

Divisions Corner *(Continued)*

- Create an inventory of available expertise
- Review industry practices
- Prioritize topics for action
- Encourage parent organizations to fund pilot studies
- Identify a body of knowledge

The groups plan to update the SIG on their progress as well as provide opportunities to comment on any questions or recommendations they wish to put forward before the SIG. Arrangements are being made for a SIG meeting during SHEA's next annual meeting in Toronto (April 2001).

There are many studies and activities underway that are focusing on how the quality tools can be used to further reduce errors and improve care. Some of the challenges are related to issues such as consistent definition, accurate capture, knowing the denominator and method of tracking. Historically health care has not had a system in place to automatically capture an error or unusual event. The industry depended on voluntary reporting by workers who were already being asked to do more with less and in less time. Perhaps this process has not served the industry well and it is time to evaluate another system.

Visit the Health Care Division Web site at: http://www.healthcare.org for more information.

Senior Membership

Now it is easier for regular members to apply and advance to the grade of Senior Member. The Board of Directors recently approved the elimination of the five references that members needed to provide on the application.

Regular members must complete the application and mail or fax it to the Section Examining Committee Chair, **Howard Swartz**. Approved applications are then sent to ASQ Membership Services. Upon receipt, Membership Services will process the advancement and change the grade to Senior Member.

Revised applications are now available in the Member Services area of ASQNet. To request hardcopies, please email the customer service center at cs@asq.org <mailto:cs@asq.org> or call 800-248-946 or 414-272-8575, and request item B0130.

Reliability results from repeatability and reproducibility.

Quality results with hands not words.

Inspector of the Year

The Inspection Division, ASQ is seeking nominations for the 2001 Inspector of the Year award to be presented during the 55th Annual Quality Congress in Charlotte, NC in May, 2001. The purpose of this award is to give formal recognition to qualified individuals who spend at least fifty percent of their work hours engaged in inspection, test, product audit, calibration, and other related activities intended to assure conformance to engineering, manufacturing, quality, and customer standards or requirements. Managers, supervisors, planners, engineers, and associate engineers are ineligible for the award.

Qualified candidates may be nominated, in accordance with Inspection Division procedures, by any member of ASQ. Qualified inspectors are those who:

1) have the knowledge, qualifications, background, and experience to accept or reject product or services;
2) represent the customer for in-line or final inspection;
3) assist and motivate peers and other workers, supervisions, departments, etc., to produce quality products and services while reducing related costs of prevention, appraisal and failures;
4) train others in inspection methodology and techniques;
5) continue their own professional development through certifications such as the Certified Mechanical Inspector and Certified Quality Technician.

The Award will be a suitably engraved plaque and a certificate recognizing the Inspector of the Year and his or her company. Annual Quality Congress registration for the Inspector of the Year will be paid for by the Inspection Division. The Award will be presented at the Inspection Division Annual Membership Meeting at AQC. News releases to quality publications will include a picture of the Inspector of the Year.

All nominations must be submitted by March 15, 2001. Applications for the Inspector of the Year Award may be obtained from:

Dr. C. L. Carter, Jr. P. E.
Chairman, Awards Committee
C. L. Carter, Jr. and Associates, Inc.
1211 Glen Cove Drive
Richardson, TX 75083
972-234-3296 (Phone / FAX)

Recertifications

The following is a list of those Section members that renewed their certifications during 1999.

Michael R. Amann
Ronald L. Baker
William E. Barton
J. Mark Broughton
Craig M. Carpenter

Pamela J. Case
Hardy M. Cook, Jr.
Craig Close
Elizabeth Coffman
Gilbert Cuffari

Eva M. D'Ambrosio
Lloyd Dixon
Maria Dukas
Bev Earman
William J. Erikson

T. Patrick Faith
Laurie Kleppen Field
James L. Gardner
Karen L. Gentle
Nancy George

Joel Glazer
Mark W. Goller
Matthew M. Hall
Morgan Hall
Jean Marie Hase

Glenn Hollenbeck
Mark J. Holmes
Harry Howard
Thomas Kline
Petro G. Kosmides

Mary Clair Kretzschmar
Christopher P. Lamothe
Peter Lang
Joyce M. Levinson
Sidney S. Lewis

Thomas J. Lutz
Mark Mangieri
Charles Mooney
Robert K. Morrison, Jr.
Ronald E. Northcutt

Michael R. Nussbaum
Maureen O'Neill
Roy A. Phillips
Robert Pullin
Ronald Rosenkoff

Sharon Ann Ruppert
Diane D. Russo
Gregory N. Smith
Ronald Tobb
Rick Townsley

Frank A. Trovato
Frank Vojik
Gordon M. Ward
Robert J. Weaber
O. Nelson Weller

G. Gordon Wells
Michael Zimmerman

The Section commends each of these individuals for maintaining their hard-earned ASQ certifications. Of the 33 scheduled to recertify in June, 1999, 26 did (78.78%). In December, 1999, 31 out of 43 (72.1%) recertified.

If you were due to recertify in June, 2000, you still have time to submit your recertification package. Your recertification data **must** be submitted by December 31 if you intend to maintain your certification. Also, if you are due to recertify in December, 2000, this is the ideal time to begin to get your information and supporting documentation together. Forward your recertification data to the Section Examining Committee Chair as follows:

Howard Swartz
8 Timber Way Court
Reisterstown, MD 21136

If you have any questions, you may contact Howard at 410-628-3278 (W) or at swartzhc@aaicorp.com.

Wanted: Job Seekers Email Addresses

Each month, the Section receives new employment opportunities. Unfortunately, we often have to edit, re-format or re-type these and distribute when our schedules allow. We all know how critical time can be—especially with *the current job market*. This year, we are adding an enhancement to our Employment function called **Job Seekers Employment Forwarding Service**.

This summer, we constructed a process map and used it to help us *reduce the total cycle time* for distributing employment info to our members. The primary result of this improvement project was to create an *email address group for members* interested in quickly seeing new employment opportunities. Our members can now receive the unedited emails directly from those who have requested this service.

Job Seekers Employment Forwarding Service invites you to submit your email address to the Section leadership and receive the very latest in job openings:

- We will forward all employment opportunities directly to you.
- You may receive them at any email address you wish.
- You can cancel your membership to the email group at any time.

To sign up for this service, please title your email "Job Seekers" and send to the Section's Employment Coordinator, Mike Rothmeier at Rothmeier@Compuserve.com

Focus PDCA (Dr. W. Edwards Deming)

F Find a process to improve
O Organize a team
C Clarify current knowledge of the process
U Understand causes of process variation
S Select the process improvement

P Plan the improvement
D Do the improvement
C Check the result
A Act to hold the gains

CQSE Exam Notes

Jeffrey Lyons, M/A Com

I recently took the CSQE Exam, along with **Joyce Levinson**. We knew that by having a limited background in the software arena that we would need to begin early on our preparation for the exam. First, we acquired the CQSE Primer and solution text published by the Quality Council of Indiana. Next, Joyce recruited two Software Engineers, **Bill Knouse** and **Jon Hoffman**, to help us through the material from a software development point of view. We then scheduled a working lunch hour (with a motivational dessert) once a week for the next 6 months.

The CQSE Primer proved to be a valuable source of information and the sample questions provided insight into what to expect from the actual exam. The solution text also provided good information as to the reasoning behind the correct answers. This was good because on occasion we had disagreements with the Primer's answer. The sample questions also provided a good indicator of our knowledge and also how much we didn't know. Also, using the questions as a "mock" test helped to hone our test-taking skills that we knew would save us time during the exam. The software engineers also provided a great deal of information on the real world of software development.

In my opinion, the actual exam was not as difficult as the Primer's practice questions. Having been previously through the CQE and CQA exams, I knew what to expect. For first-timers I think that it is important to be relaxed and don't panic. Bring sufficient resource materials but don't overdue it. The time allotted is sufficient to answer all of the questions but not sufficient to research each one. Go through the test once answering all of the questions that you know then, as time permits, use your materials to research the questions that you are not so sure of. If there is time remaining, be sure to use it to check your work.

Recommended resources:

- *CSQE Primer* - Quality Council of Indiana
- *Handbook of Software Quality Assurance* - Prentice Hall
- *Software Verification and Validation* - Artech House
- *The Quality Audit Handbook* - ASQ Quality Press

My exam results were received in about two weeks. Yes, the envelope was big and the results were good. Now the real work begins - applying this knowledge to improve my company's business processes.

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.

Certification Exam Schedule

Examination	Application Date	Exam Date
CQE / CQA / CSQE	October 13, 2000	Dec. 02, 2000
CQIA Pilot Exam	January 5, 2001	Jan. 27, 2001
CQT/CRE/CMI/ HACCP/ Quality Manager	January 12, 2001	March 3, 2001
CQE/CQA/ CSQE/CQIA	April 6, 2001	June 2, 2001

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