



Quality Connection

Official Newsletter of the Baltimore Section, ASQ

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**Support your local Section this year.
Attend monthly Section meetings..**

Problem-Solving Success Tip

Jeanne Sawyer, Ph.D.

Whatever you do, do it on purpose. Decision-making shows up throughout the problem-solving process. The decisions may be difficult or unpopular, so it's very tempting to ignore some of them. Imitating an ostrich, however, is a wimpy way to decide not to change anything—and is quite likely to leave you making awkward explanations later.

- Make conscious decisions: whether to proceed or not, which path to take, etc.
- Know why you made the decision you did,
- Be able to explain it (and offer alternatives).

The first big decision in problem-solving is deciding whether or not you'll tackle a particular problem. Take the time to figure out what you need to know to make an informed decision, then decide. If you are asked to solve a problem, be sure you at least have a reasonable chance to do it successfully before you agree to lead the project. Otherwise you're setting yourself up for failure.

Of course, if you're going to tell your manager or an executive you can't do it, you want to be careful how you present it. A flat "no" or "I can't" is usually not the best approach. Be prepared to explain why the project can't succeed the way it's defined. Have the facts organized to present a

clear, reasonable explanation. Propose alternatives that make the project viable. For example, perhaps somewhat less ambitious success criteria will remove enough of the pain from the problem in the time allowed, or perhaps the deadlines can be extended. Perhaps the success criteria are reasonable, but only if certain resources are available to you.

Once you've agreed to take on the problem-solving project, you and your team will have many more decisions to make along the way, including choosing which root causes to address and determining what action plan you'll follow to eliminate each root cause. When you make these decisions, always know the reasons behind your choices and document them.

You'll eliminate unnecessary rehashing of decisions already made if you have good notes. Of course, sometimes it's appropriate to reconsider a decision. When that happens, if you have written down the logic behind the original decision, it'll be easier to figure out what has changed and choose a new path or confirm that the original decision should stand.

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, (*Continued on Page 2*)

(Continued from page 1)

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.

Newly Certified Quality Personnel

The Baltimore Section recognizes the following newly certified individuals who have passed either the October 2003 or the December 2003 ASQ exams.

Certified Mechanical Inspector

William T. McCrorey
Matthew L. Kidwell

Certified Quality Manager

James R. Fulton Fairchild Controls
Michele Divver Earthdata International
Bruce Petro Federal Aviation Agency

Certified Reliability Engineer

Reuben Mann Raytheon

Six Sigma Black Belt

Ramprasad Venkatraman
David Phillips Sweetheart Cup
Dr. Tim Bauters Texax

Certified Quality Improvement Associate

Carolyn Fisher

Certified Quality Engineer

Scott Ridgell
Susan Hammond
Lawrence Pike Bureau of Engraving & Printing
Barbara Reinhardt
Robert Rogers
Laura Ellen Wrench

Certified Quality Auditor

Gary Tichnell Northrop Grumman
Richard Barrow
Nichelle Rashid
Jason Brunnabend QIAGEN Sciences

Certified Software Quality Engineer

Ramprasad Venkatraman
Michael Scott Fairchild Controls
Kenneth Mills Federal Aviation Agency
Mark Berron
William Michael Garner Honeywell Technology Solutions

We commend each of these individuals that have successfully achieved these Certifications. They have reached a new level in their professional growth.

Section Pass Rates - October, December 2003

Exam	Total	Pass	Per Cent
Manager	6	3	50.0%
CQA	8	4	50.0%
CQIA	1	1	100.0%
6 Sigma	3	3	100.0%
CRE	1	1	100.0%
CQE	6	6	100.0%
CSQE	6	5	83.3%
CQT	6	0	0.0%

Comments on the Certification Process

Barbara Reinhardt, CQE -I have Six Sigma background through Motorola and I want to move into the Quality field as that's where my interests lie. As I'm in the middle of a job search, I found that many jobs that pique my interest require the CQE credential. I felt that in order to even compete for these jobs, I needed to gain that certification. I had originally planned to do my exam preparation through a review class, however, that class was cancelled so I had to prepare on my own. As this was my first attempt at taking the CQE exam and I'd seen the statistics for pass rate, I was a bit uneasy about preparing on my own.

My primary source material was the Quality Council of Indiana CQE Primer along with many other resources. I also got a copy of the sample exam questions on CD. Using the practice questions was invaluable to me as I learned the tricks used in the exam. I also labeled the primer so that I could find answers quickly, if needed. I had been told that I'd finish the exam in less than 5 hours. For me, it was 5 minutes shy of 5 hours.

I knew that I'd passed the exam before I got the letter from ASQ. ASQ was very quick to update their member website. I believe I knew I passed the exam 5 days after I took it and received the notification in the mail a few days later.

Mike Garner, CSQE - I thought that the ASQ CSQE Exam was very difficult and challenging. I really didn't know whether I had passed or not when I came out of the exam room! I studied the CSQE Primer material from QCI and the exam questions on CD also from QCI. I didn't take any classroom courses. I studied a total of 160 hours to read through all of the material and prepare for the exam.

Reuben Mann, CRE - I thought the exam did cover diverse topics in Reliability Engineering; topics which every Reliability Engineering should have some familiarity. I had a solid foundation based on my

educational background (Master's of Reliability Engineering from University of Maryland) and my work experience, so I believe I was already well-prepared for the exam. As an aid, I bought the CRE Study Guide (I think the New Mexico ASQ chapter developed it) and spent a couple hours a week reviewing each topic in the guide. The guide was invaluable and provided good examples of the exam questions. I attempted to register for the ASQ CRE training workshop, but my company did not approve my request, so I cannot comment on the ASQ CRE training.

I was notified of my test results between 2 to 3 weeks after I took the test. This efficiency was very impressive. I would have liked some additional feedback such as areas where my scores were weak, number of person's taking the CRE exam, number of CRE's granted, etc.

On the down side, there were no signs inside the building to identify which room the test was being given. I had to walk from room to room and ask what test was being given in the room. (I think the proctor forgot to bring his signs and tape.)

Gary Tichnell, CQA - I feel the use of the of the Quality Council of Indiana reference material is a perfect match for preparation for the exam, as is the refresher course sponsored by the Section. Instructors were very knowledgeable of the subject matter making comprehension very effortless. I commend the Section on their continuous efforts to make these refresher courses available along with top notch instructors. Kudo's to **Lloyd Dixon**. People considering any future certifications would be remiss by not attending the applicable refresher course. The certification exam will be much easier if you do!

Carolyn Fisher, CQIA - I was thrilled to get that big envelope with the good news printed on the outside! I would probably have hesitated to open a plain envelope, but here was the good news broadcast to all! That was cool!

I believe I will try for the CSQE certification next.

Suggestions: More signs at the test site to indicate where to go, once I find the correct building. There were GED exams in the same building that day and they had no signs at all, so I found their location and directed folks there while I waited for my exam to start.

It didn't occur to me that I could bring drinks and snacks, though I always carry water. Others brought food, but then their exams were 4 or 5 hours long.

Bruce Petro, CQ Manager - I am proud of my passing the CQM examination.

In preparation for it, I took a 3 day (intensive) training course that my employer provided to me and others. It was delivered by **Greg Hutchins**, PE, Quality Plus Engineering

In addition to his tailored textbooks, test exercises, and discussions, he recommended for me and I acquired and studied some additional materials, that were especially helpful in my preparation for the essay response portion of the test.

I could not have passed the ASQ test for Certified Quality Manager without the training provided by Greg Hutchins. I need to point out his personal assistance went far beyond the printed study materials provided by his course or anyone else's study materials. I also greatly appreciate his personal follow-up to ensure the successful completion of the student's goals, in my case to pass the ASQ CQ Manager requirements.

Recertification---Retirement!

By Howard Swartz

After 22+ years at AAI Corporation, I am calling it quits. Yes, I am retiring from AAI on March 5th. After that, you can reach me at home.

I will be performing Examining Committee Duties for the rest of this year. Starting in September of this year, however, you will have a new Examining Committee Chair and probably new members of that committee. I will be in another city at that point, probably Pittsburgh (who would choose that, you say—my wife, whose grandchildren are there).

I want you all to know that I have thoroughly enjoyed my tenure with the ASQ Board of the Baltimore Section and I will miss everyone, including all of you who I have met, talked to and seen at meetings, and re-certified over the years.

You can reach me at work until 3/4/04 as follows:

410-628-3278 or at swartzhc@aaicorp.com

After that, try me at home anytime.

410-833-2838 (E-mail to be determined)

Remember, just because I am retiring is not an excuse not to re-certify. So keep those re-certifications coming!! Submit your re-certifications to:

Howard Swartz

8 Timber Way Court
Reisterstown, MD 21136

New Certified HACCP Auditor Exam

The Food, Drug and Cosmetic Division (FD&C) of ASQ worked to streamline the certification process for its Certified Quality Auditor for HACCP credential. Many individuals, in the US and abroad, have expressed a sincere desire to become ASQ certified as HACCP Auditors but are unable or unwilling to justify the current process.

The current requirement is for two exams. Candidates must first achieve the Certified Quality Auditor designation by passing the CQA Exam. The second step is a demonstration of proficiency in HACCP and earns the CQA-HACCP certificate.

FD&C proposed consolidating the process to a single exam which incorporates elements of the existing CQA Body of Knowledge with those of the existing HACCP Body of Knowledge. The certification is intended to confirm the individual practitioner's auditing and HACCP knowledge and skill set.

A market survey was conducted in June to verify there was a definable and continuing market, and a justified need (on a broad geographic basis) for the certification. The market survey established that a market for this certification existed.

The Certified HACCP Auditor, Body of Knowledge (BOK) is available online at www.asq.org, click on Certification and choose HACCP Auditor (CHA).

The first administration of the new CHA exam will be **October 16, 2004**. Individuals who have either sat or applied for the CQA-HACCP exam within the last two years will be notified of the change

Feedback Sought on the USE of ISO 9001:2000 and ISO 9004:2000 Standards

Now is the time for US organizations to register their experiences, comments and/or concerns on the use of the year 2000 editions of ISO 9001:2000 and ISO 9004:2000 standards — it is critical that ISO gets feedback on actual user experiences on the application of these standards.

The International Organization for Standardization (ISO) Technical Committee (TC) 176, Sub-committee (SC) 2, *Quality Systems*, has asked for international participation in a survey of user experience with ISO 9001:2000 and ISO 9004:2000. A website questionnaire has been designed to determine users' concerns and recommendations with regard to these standards, their suitability and their application. Your

website response will go directly to the international ISO group responsible for these standards.

This is an excellent means of providing your feedback to the international ISO working group that developed the ISO 9000 standards. The results will provide information on how well the current standards meet your needs and provide guidance on the future revisions of these standards.

Since US organizations will be providing feedback along with all other ISO member countries, it is essential that all US experiences with the use of these standards be recorded so that US interests are represented and protected. To be represented, comments must be submitted through the ISO survey located on the Internet at:

<http://isotc.iso.ch/webquest/tc176/index.html>

It should only take approximately 15 minutes to complete the survey and anyone who has some knowledge or experience with the standards may participate. Where you indicate concerns, participants will be prompted to suggest improved wording of the clauses, if you wish to do so.

Since there is no limit to the number of people who may respond from any one organization, it is imperative that actual US users of the standards take the time to participate in order that all US experiences are adequately represented in the evaluation.

Your participation is vital and your feedback goes directly to ISO!

When the survey is completed, the results of the survey will be widely disseminated; e.g., through the ISO/TC 176/SC 2 web site at www.bsi.org.uk/ios-tx176-sc2. The results of the survey will play a major role in guiding the next amendment or revision of these standards

31st Annual Delaware Quality Conference The Reality Continues !!!

Don't miss this once-in-a-year experience to network with local and regional ASQ members !!!

The John M. Clayton Hall on the campus of the University of Delaware, Newark, DE will be the location for this one day conference and a series of post conference workshops on March 4 - 5, 2004.

For 30 consecutive years, the Delaware Section and the University of Delaware have been bringing you quality conferences featuring business leaders, MBNQA Award Recipients, State Award Recipients, outstanding speakers and workshops.

Registrations Are NOW Being Accepted!!!

The complete conference program, including registration forms, may be obtained through the ASQ Delaware Section web site (www.asqdelaware.org) or <http://www.continuingstudies.udel.edu/special/dqc/index.html>

Wanted: Science Fair Judges

In spite of the current cold weather, Spring is coming and so is the 49th Annual Baltimore Science Fair. The Science Fair is an annual exhibition of projects developed by individuals and teams of middle and high school students interested in the physical and biological sciences. It is presented to give young people from Baltimore City, and Baltimore, Carroll, Harford and Howard counties the chance to demonstrate their scientific abilities. Again, this year, ASQ Section 0502 will provide judging and recognition awards for student use of statistical thinking and techniques in their science fair project, and to recognize teamwork in creating the entries. The Science Fair judging will take place on Saturday morning, March 27th. Awards are made on Sunday evening, March 28th. If you are interested in being a judge for this event or need more information, please contact **Kevin Gilson** at 410-964-2428 (work), 410-884-9165 (home), or at kgilson@sierramilitary.com as soon as possible. If your company would like to donate recognition items, such as Memory Jogger II and Team Memory Jogger books, in return for recognition at the awards event, please contact Kevin.

Supplier Partnerships

By Michael Zimmerman

(Note: The following is derived from the PowerPoint presentation to the January Quality Champions breakfast.)

Why Create Supplier Partnerships?

- Brings value to the corporation and the shareholders
- Remove waste and non-value processes
- Satisfy customer needs
- Build in efficiency

What are Supply Chain Partners?

The select group of vendors supplying the most critical items that become true business partners, sharing both the rewards and the risks of a closer working relationship.

Who to Partner with?

Suppliers who see the value in:

- High levels of product and process quality

- Achieving inventory cost reductions through shared planning and simplifying processes
- Establish a framework for performance
- Providing mechanisms to improved communication

A Brief History

Bringing value to the bottom line through ... Total Quality Management ... Downsizing ... Re-Engineering ... Right Sizing ... Lean ... Six Sigma ... ISO ... MBNQA.

Organizations are now understaffed and not operating at 100% efficiency.

- Customer service levels are down
- Production is suffering
- Quality is suffering
- Employee morale is suffering

What brought short term gain is now causing long term concern.

Supply Chain Management

A Relationship Management Program

Manage Your Supply Chain

and

Build Efficiency Into Your Supplier Partnerships

and

Bring Value to Your Bottom Line

Determine your **Critical Success Factors** and stack the cards in your favor. What are Critical Success Factors?

- Something that **must** happen in order for your program to be successful.
- Allows you to set goals that identify Obstacles and methods for removing them.

Some Critical Success Factors are fairly generic and applicable to all industries.

- Open two-way communication
- 'Fair and Honest' Business Transactions
- A 'Total Cost' Philosophy

Critical Success Factors

- Sharing of Risk and Benefit
- Universal Acceptance of Change
- Management Sponsorship

There must also be an acceptance that these initiatives enhance the strength of the supplier chain.

Open Two Way Communication

- Sharing of planned usage
- Sharing of manufacturing schedules or any information that may impact product demand or delivery

'Fair and Honest' Business Transactions

Giving supply chain partners information in enough time for them to react to changes ...
Be open about issues that may affect delivery or consumption of the product.

A 'Total Cost' Philosophy

A supply chain strategy where the total cost of ownership is the basis for decisions.
Total cost of ownership includes all processes from the realization of need through the retirement of the product... includes the cost to engineer, design, procure, maintain, and to retire.

Sharing of Risk and Benefit

All parties share in risk and benefit. If a process improvement reduces the cost to manufacture ... the unit price should be lowered **and** vice versa. If the cost to manufacture goes up due to a specification change, a price increase should be acceptable.

Universal Acceptance of Change

There must be an acceptance by the team and management that there will be **changes!** Continuous improvement and product improvement are the basis for success. The team should always be focused on adding value through change... There must also be an acceptance that these initiatives enhance the strength of the supply chain.

Benefits

- Early supplier involvement in specification changes or new product development?
- Elimination of redundant processes?
- Goals that improve the supply chain?
- Congruent engineering?
- Alignment of vision and process capability?

- Reduction in inventory \$
- Increased Customer Service Levels
- Participation in supplier R&D efforts
- Product and process savings
- Efficiency and reduction of waste ... Lean
- Continuous improvement ...

Reduce Total Cost of Ownership

Services

Efficiency ... in time and process

Product

Quality, Inventory, Inspection, Expediting

Process

Efficiency, Eliminate Redundancy

Direct Benefits

- Zero Defects
- Accurate Demand and Manufacturing Forecast
- Zero Expediting
- Freight Optimization
- On Time Delivery and 100% Fill Rates
- Optimized inventory

Bring value to your bottom line by implementing a 'supply chain management' program. Work with your suppliers to build efficiencies and synergies into the relationship. Add even more value to the program by identifying and implementing *Critical Success Factors*.

Things to be cautious of ... Market Changes ... New Players, New Technology ... Reduced Competition ... Complacency Make sure you do not alienate the rest of the supplier community. Keep your finger on the pulse.

Michael Zimmerman is the Director of Procurement, State of Maryland Department of General Services. He may be reached at 410-767-4244 or at michael.zimmerman@dgs.state.md.us

The "Community" Quality Manager
Grace L. Duffy
Management and Performance Systems
Tavares, FL

I have been thinking recently about how we can use quality tools and concepts to support the greater community. ASQ has identified several strategic approaches to broaden the traditional quality arenas into healthcare, education, local community support projects and other items of "greater good." I have been toying with ways to integrate my years of corporate experience with this new perspective of quality improvement as one of many inputs to community growth and success.

A recent ASQ Quality Management Division survey identified areas of member interest in how the Quality Manager Body of Knowledge (BOK) applies to actual business or community situations. This survey, conducted by the QMD Membership Research Committee and ASQ Division Affairs, is a good source of customer feedback from our Division members. It further prompts me to continue my search for community applications of the BOK.

ASQ continues to seek new applications for quality principles. The 2002 – 2003 ASQ strategic plan dedicates 25% of its focus to being "a worldwide provider of information and learning opportunities about quality". The ASQ Board of Directors has given our Executive Director the responsibility of looking outward from our traditional quality focus to providing

more strategic governance and leadership. As a Society, we are anticipating the future and its impacts and developing stronger ties to senior leaders who champion a “higher purpose.” This means working with internationally focused organizations and businesses that seek improvements and best practices throughout their customer and supplier networks, not just within the core manufacturing environment. Most recently the ASQ Board of Directors approved a new “Good Works Initiative” to encourage local projects in support of community growth and well being.

The Quality Manager BOK fits well into the above strategies. Where better to get the structure for approaching best practices in applications and deployment? The concept of community brings many different perspectives together to share current knowledge, build new knowledge and to expand our use of technology. There are many definitions of community, including geographic, virtual and interaction-based. No matter how we define the relationships among individuals forming a community, the Quality Manager BOK appears to provide strong support to our efforts.

Let me start with the 7 areas of the Quality Manager Body of Knowledge:

- Leadership
- Strategy Development and Deployment
- Quality Management Tools
- Customer Focused Organizations
- Supplier Performance
- Management
- Training and Development

How can the Quality Manager apply these areas to the total community environment? Here are some of my first thoughts by BOK category:

Leadership

Here I see a direct application of our Quality Management skills. One of the more difficult tasks is to find competent leaders for volunteer organizations. The skills that Quality Managers bring to the table are exactly what are needed. The Quality Manager has special training in staffing issues, conflict resolution, motivation and team management. We can help assess the strengths, weaknesses, opportunities and threats facing our elementary school music program. We can effectively suggest an organizational structure that will enhance communication among the many different stakeholders in a new Chamber of Commerce task force. Our understanding of change agents and how to initiate change can be a strong asset as communities

seek to survive the results of corporate downsizing, urban flight or redistricting. It could be a whole separate article to pursue the possibilities of applying major business functions such as safety, product liability, human resources or finance to local community activities.

Strategy Development and Deployment

Quality management helps us identify areas for improvement or opportunities for efficiencies. We can use our skills to gather data on suppliers and customers of non-business processes. There are several initiatives in ASQ and other professional societies underway to apply the Baldrige or related quality standards to education, healthcare or the public sector. Six Sigma concepts are not just for manufacturing. Hospitals, elementary schools and local governments are beginning to use internal capability analyses, stakeholder feedback and environmental scans to align their improvement efforts to their expanded customer bases.

Another intriguing thought would be to establish measurements to monitor or evaluate the effects of local legislation or policy initiatives. This area of the BOK addresses the linkage among Quality Function Needs, Overall Strategic Plan and the Quality Plan. Town Councils and Chambers of Commerce are hard pressed to find volunteers with strategic planning skills. It is more difficult to find those who can identify quality principles and policies or who can help formulate resource requirements to manage the attainment of quality goals.

Quality Management Tools

Use of Quality Tools is a very valuable gift that we can give to our community. Local ASQ sections work closely with community businesses, healthcare and educational organizations in developing and administering quality award programs. These awards, for teams and organizations, feed into state and regional programs based on the Malcolm Baldrige National Quality Awards. Both examiners and applicants are trained on the use of quality tools for data gathering, assessment, statistical process control and reporting. It is exciting to see how creative the award applicants can be in using these tools in non-traditional environments such as hospital emergency rooms, high school classrooms or sewage treatment plants.

The Koality Kid program, supported by ASQ, is another excellent example of the use of quality and quality management tools in the community. The skills transferred to students in these programs will last

them a life-time. The memory of using statistics, Pareto charts, check sheets or histograms will serve these young people as they grow into the leaders of the future. A simple concept like PDCA is the basis for most problem solving and decision making in the business world.

Customer Focused Organizations

One of the major challenges I see in supporting my local community is to identify all my customers. Just when I think I have updated my membership or address listings to include a new executive, government official or quality practitioner, I meet someone who represents a whole new interest in the community. My Quality Manager training has helped me identify many different types of customers. I am working to establish new partnerships, new communication channels among groups who have traditionally been far removed from each other. I am finding that if I can provide some initial structure for the beginning of dialogue, that the parties will quickly establish their own expectations and begin to form focus groups or “Roundtables” for continued sharing of best practices. I can use a customer driven approach to introduce those with common interests for long-term benefit. Customer retention and loyalty is a big challenge. Although most of my constituents are strongly committed to quality, they, too, wear many different hats. It is difficult to address the priorities and needs of so many. Segmentation and multiple-customer management skills come in handy in providing enough rewarding exchanges to keep the participants coming back.

Supplier Performance

Working within a community, whether geographic or not, requires an intricate network of successful customer and supplier relationships. Each of us at any point is either a supplier or a customer of another. Often we are both at the same time. The concept of standards and models for performance within these relationships is valuable for stability and improvement. The Quality Manager training in planning, establishing expectations, setting key measures and alliances is critical in the complex environment of our communities. No longer does a municipality exist in isolation. Rarely does a town or even a school board have the luxury of considering only its internal interests. Just as the quality profession has moved out of the traditional inspection and assurance realm, so have formerly simple project groups been forced to consider the needs of an ever increasingly complex network of stakeholders. A school board must now inspect not only its internal activities, but it also must anticipate the impact of its efforts on those

organizations that supply resources and students to it. The school board also becomes a supplier to other parts of the community, such as potential employers, other schools and the residential community as a whole.

Management

Management skills are critical within the community. These skill areas overlap many of the issues already discussed. It is difficult to work with customers or suppliers without good management techniques. We can help our local volunteer organization in setting up job descriptions, process improvement teams, recognition and reward systems. One of the more critical activities in local initiatives is the recruitment of talented, committed individuals. The Quality Manager can be very helpful in defining member roles and responsibilities and facilitating the establishment of effective work teams. Total Quality Management can take on a new meaning. Not just Total Quality in the organization, but Total Quality throughout the macrocosm of the town, county, district or region.

Project management skills are my bread and butter. These are directly applicable to any activity, business or otherwise. Most organizations, public or private, can use volunteers with good project management skills. We can help by running meetings, identifying stakeholders, setting up budgets, analyzing relevant data, setting milestones or measuring progress toward group goals. How often have we attended a school council planning session, only to find that the discussion leader has not prepared an agenda or researched methodologies to best address the subject at hand?

Training and Development

Finally, the Quality Manager can assist in the development and delivery of skills based training. We understand the importance of strategic planning for training. We know how to conduct a training needs analysis, how to design training events, how to perform post training evaluations and reinforcement. The Quality Manager can be a central resource to our community in identifying areas where a group lacks the skills necessary to perform its appointed function. We can help find or build the required training to meet those needs. As ASQ members, we have available to us one of the world’s best collections of training solutions, texts and resources for continuous improvement. We have fellow members who can help us research new technologies to meet the growing needs of our community. We can serve as brokers to assist our volunteer associations in gaining the

knowledge to address the challenges of their changing environment.

I am excited about the different ways I can use my quality skills to help the local community. I am more excited to see the ways members of other communities use quality skills to better their environment. Although my initial perspective on these quality applications comes from a strong business background, I am quickly learning new approaches from my colleagues in health care, the school districts and local, state or federal agencies.

Baltimore Section - ASQ - Call for Papers

You are invited to submit an abstract for a presentation at one of our monthly membership meetings. Dinner or Breakfast presentations will be 50-60 minutes; tutorials will be 45 minutes.

Deadline for Submitting Abstracts is July 30, 2004. The following information must be submitted for each proposal:

- Author(s) name & organization
- Full address, telephone, fax and e-mail
- Complete title of the presentation/tutorial
- Abstract & bio (500 words maximum each)

Presentations and tutorials will focus on the following topics:

- Quality Tools
- Management Methods
- Manufacturing or Service Quality
- Six Sigma
- Lean Enterprise
- Manufacturing. Global Quality Reliability
- Quality Engineering
- Cost of Quality
- Continuous Improvement
- Change Management
- Benchmarking
- K-12 Education
- Software Quality Management
- Statistics
- SPC
- Leadership Quality
- Standards
- ISO 9001:2000
- ISO 13485:2003
- Basic Quality
- ISO 14001
- Certification
- Malcolm Baldrige NQA
- Retail Quality

- Health Care
- Auditing
- Organizational Improvement
- Team Facilitation

Other topics that you feel would be on interest to Quality professionals

We are looking for interesting case studies, research papers, new applications, new process methods, leading edge methodologies, for any of the above topics. Only educational presentations will be allowed. No commercial presentations of any type are allowed. Presentations may also be selected and used in the Newsletter.

Authors can copyright their presentation with the understanding that all presenters must allow the Baltimore Section to distribute the presentation via hardcopy and electronic media. After the meeting all presentations will be archived on the Section web site for members. Baltimore Section reserves cancellation and editorial rights over the presentations. Authors of accepted proposals will be notified by September 30, 2004, and shall receive detailed instructions for preparing their papers. Please note that electronic submissions are preferred. You may submit your abstract by mail or e-mail to: Sara Parker, email: sara.parker@amedd.army.mil; mail: 400 Shore Drive, Joppa, MD 21085. Thank you in advance for your support with this exciting initiative. Let's share the wealth of knowledge and expertise that we have within the Baltimore Section!

***Managing Software for Growth –
(Without Fear, Controls, and the Manufacturing
Mindset)***

Roy Miller.
Addison-Wesley, Pearson Education - Software
Engineering. Copyright 2001.

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Reviewed by Joel Glazer

During the early decades of the 20th century, the industrial revolution gained steam with the arrival of the production line approach to manufacturing. Manufacturing went full speed ahead to create automation and new jobs. For automation to be efficient, there is a perception for the need of controls on the processes and the schedules to ensure that products can be assembled in timely manner and shipped out of the plants to waiting consumers. Control and schedules are generated from planning and detailed plans that attempt to predict events in the future based on past experience. Deviation from the

plan was “rewarded” with demotion or dismissal from the work force.

Software arrived on the scene in the second half of the 20th century. Business leaders and managers came out of the school of thought that was dominating the earlier manufacturing activities. Therefore, it was a natural transition from manufacturing widgets, to manufacturing software. However, no one had the experience to deal with the unpredictable nature of software - continuously changing requirements, rapidly changing technology and environment as well as personnel turnover.

This book describes why the manufacturing mindset doesn't work for software development, and what might work.

The book does not address the issue of “mission critical” or “safety critical” software applications such as medical devices, space and military applications, air traffic control, flight and engine controls, power-plant controls and in-flight environments – whose risks and stakes involve human lives and billions of dollars – where the cost of failure outweighs the cost of development and the speed of development is seldom dictated by market forces.

Most large software projects efforts are being developed by the use of a methodology derived from the so-called “waterfall.” This methodology is based on linear sequential thinking, i.e., a series of steps that must be followed to reach the end goal, each step building on the last. If they are properly laid out in a plan, they can be allocated sufficient resources of personnel, funds and material to be achieved in the desired time frame. There is little room in the plan and schedule for the unknown. The assumption is that each chunk of work has an achievable end date and result and each chunk is reviewed before moving on to the next chunk – no surprises allowed.

In the manufacturing mindset – increased predictability, efficiency and “quality” is obtained by dividing the work into minutely small work units that can be scheduled precisely as to start time and completion time. This was, and continues to be, attempted in the development of the majority of software efforts – i.e., we attempt to manufacture software in the same manner as widgets.

Taylor, the father of modern industrial efficiency studies, wrote “The Principles of Scientific Management” in 1911. He solves an “optimization problem” in moving manufactured goods from raw material to finished products. Schedules and control

are essential ingredients of the solution of optimization.

The manufacturing mindset assumes that:

- The problem is predictable
- The problem is controllable
- The focus should be on optimization
- The manufacturing chain is depicted:
Engineering -> Production Design -> Assembly -> Inspection -> Done

Translating this approach to software implies that:

- We can make detailed accurate long-term predictions about software development
- We can control events and people to make our predictions come true.
- Our attempts to control will produce the results we want.
- The current software development chain is depicted:

Analysis -> Requirements -> Design -> Build -> Test -> Done

Both chains are linear, i.e., phased, and a phase cannot start until the predecessor phase is complete.

With this approach we first produce verbose “requirements,” followed by detailed design documents. We hold various design reviews with the customer community and maybe the user community as well before we are authorized to generate a single line of code. These efforts are followed by an endless string of change notices to unfreeze the previous work and thus create lots of rework.

Unlike manufacturing, which for the past hundred years was studied and refined to the point that the workers can easily be interchanged with little or no training, software is still highly dependent on the individual worker, her knowledge and even mood. In the manufacturing world, schedules can be developed and work units predicted quite precisely. But in software, no such precision has been achieved, regardless of numerous attempts. None of the methodologies to date have been able to duplicate the manufacturing scheduling ability. No sooner that a software schedule is presented to management, something causes the work to be derailed; be it a new understanding of a requirement, a new requirement, new technology, an error that cannot be found when needed because insufficient time was allocated in the schedule for someone out sick, etc.

An attempt is made by the Software Engineering Institute (SEI) at Carnegie Mellon University in Pittsburgh to create a software development environment that would eliminate wild and wide variance between estimates and actual results in schedule and cost with some confidence as the developing organization matures in its development capabilities. The Capability Maturity Model (CMM), produced by SEI, tries to provide such assurance.

The author states that software problems are messy and complex, with many interdependencies and unknown consequences. These types of problems belong to a class of systems called “complex adaptive systems (CAS)”. CAS is in a class of problems that:

- Organizes itself
- Exists at the edge of chaos, and
- Where co-evolution happens

“The result is a dynamic, ordered reality that is most practically adaptable to its constantly changing environment. A CAS functions as if it were under some sort of external control, but it isn’t.” Chapter 6 provides a detailed explanation of a CAS, which is the core of Mr. Miller’s assertion of “growing” software versus “manufacturing/developing” software in the traditional methodologies.

The author uses over two-thirds of the book to describe the current state of software development and its failings. The remaining book attempts to explain how software can be “grown” rather than manufactured.

The book is divided into four parts:

Part I Manufacturing Software. What it means for projects, why we keep doing it, and why it makes very little sense anymore.

- The Manufacturing Mindset
- The Way We Think
- Different Work
- Square Pegs in Round Holes

Part II Complexity. How complexity science can help us understand software development, and be more realistic about it.

- Making a Mess
- Order for Free
- Muddling Through

Part III Growing Software. What it is, how it’s different from manufacturing software and what modern software development should look like.

- Growing Software

- The Lost art of Conversation

Part IV Change. What managers should do differently, starting tomorrow, to help their organization grow software.

- Thinking Differently
- Losing Control
- Managing Uncertainty
- Staring Projects
- Finishing Projects
- Catalysts
- A Regular Lead Bullet
- Agility
- Tomorrow

The author devotes a large portion of the book in laying the groundwork that the current i.e., traditional, methods and processes used in developing software do not produce the desired end-products on time, within budget and meeting all of the customer’s needs and requirements.

The book goes on to explain what is meant to “Grow Software” as opposed to “Developing Software”, and how this may solve the chronic problems of software development. The book concludes with some examples of programming techniques that could be used in growing software, namely “agile programming,” and as a key example of this technique “Extreme Programming (XP).”

In a ‘CrossTalk’ article published October 2001 titled “Dispelling the Process Myth: Having a Process Does not Mean Sacrificing Agility or Creativity” Mr. H. Glazer points out that XP and CMM are not mutually exclusive. Therefore, mission critical software developed for DOD or those that require certification can be “Grown” if the “growth process” can be documented, repeatable and validated.

Missing from the book are concrete examples of successful applications and the domains to which it is best to apply the technique of growing software. Under typical contractual vehicles available to most software/system developers, it would be difficult, if not impossible, to contract for software with unknowable objectives, cost and schedule, although indeed, as pointed out in the book, current contracting methods are filled with unknowns anyway, and few (if any) of the predictions are accurate. (Continued on back page)

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There is a move by DoD to change acquisition techniques and contract strategies from Firm Fixed Price/fixed schedule to an "Evolutionally Acquisition and Spiral Development Process" strategies, which will be able to accommodate XP approach to development. When this is in place it would be easier to implement "Software Growth." Until then, the author encourages the software manager interested in piloting the proposed method to initially hide this fact from the customer, and reveal it later in the process after demonstrating achievable results.

Joel Glazer (joelglazer@ieee.org), current ASQ Region 5 Software Division Councilor, has over 30 years experience in the Aerospace Engineering, Software Engineering, and Software Quality fields. He has dual Masters degrees from The Johns Hopkins University in Computer Sciences and in Management Sciences. He is a member of IEEE and a Fellow of ASQ. He is a CSQE, CQA, CRE and CQ Manager. Joel is a Fellow Engineer in the Software Quality Engineering Section at Northrop Grumman Electronic Systems in Baltimore, MD.

"The real voyage of discovery consists not in seeking new lands but in seeing with new eyes." - Proust

"Life is not a journey to the grave with the intention of arriving safely in a pretty and well preserved body, but rather to skid in broadside, thoroughly used up, totally worn out, and loudly proclaiming -- WOW--What a Ride!"

Certification Exam Schedule

Examination	Application Date	Exam Date
CQE/CQA/ CSQE/CQIA/ CCT	April 2, 2004	June 5, 2004
CQT/CRE/CMI/ SSBB/HACCP/ Biomedical/ Quality Mgr.	August 20, 2004	October 16, 2004
CQE/CQA/ CSQE/CQIA/ CCT	October 1, 2004	December 4, 2004

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OUR MISSION: *To create value for our members and others by providing opportunities for development and resources for managing quality in the community.*

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