

The Emancipation of Quality: Building Bridges and Closing Gaps

Editor's note: This is the third of three articles by Gregory H. Watson on the evolution of the quality movement. Watson, vice president of research and technology for the American Society for Quality (ASQ), was instrumental in developing the Society's technology plan following his participation in the ASQ 1996 Futures Project.

In a time of drastic change, it is the learners who inherit the future. The learned find themselves equipped to live in a world that no longer exists.

—Eric Hoffer

Offering quality to the masses—celebrating our lack of control

by
Gregory H. Watson

THE AMERICAN SOCIETY FOR QUALITY IS now free of C—it is out of control—free from the restricting perception that the Society cares only about the technical aspects of quality control found in manufacturing applications.

Does this emancipation mean that the Society should no longer care about a focus that represents its tradition of the past 50 years? No, what it means is that the practical definition of quality has been broadened from an emphasis on manufacturing quality control to all work and organizations. Quality no longer applies just to work; now it also has a prominent place in other aspects of people's lives. The principles and tools of quality help people conduct meetings, define problems, interpret data, and make decisions, whether we are working with the Girl Scouts, our school system, or our church group.

The Society's name change reflects the change that already has occurred around the world. It is a sign that ASQ recognizes and accepts this broader application of quality. Quality is not just a subject for technical professionals; it now belongs to the masses.

The future requires a changing role for quality professionals, who must facilitate quality's application in all environments and situations. In its Futures Project, ASQ discovered its responsibility to help its members prepare for a future that will be driven by technology and the integration of quality methods into all tasks:

"Every professional, in almost every field, will need to know advanced quality tools and approaches in order to succeed. In fact every organization will need to apply quality principles, or will be overrun by those that do so successfully. Those who use quality must get involved in community improvement efforts. Looking into the future reveals how closely our destiny is linked to

that of society as a whole. Our involvement is essential."¹

Quality concepts and tools will be used everywhere in society to improve the quality of products, services, and life.

What are these basic skills of quality management that will be deployed so universally? They include problem solving, process analysis, data collection and analysis methods, process auditing, and teamwork. In addition, some of the advanced quality tools, such as design of experiments, quality function deployment, and failure mode effects analysis, will be used by professionals in many other fields.

What will be the role of today's quality professional? One conclusion in the Futures Project was that quality professionals will generally be fewer in number and will be more involved in strategy development.

What does this mean to you, the quality professional? It means communication, strategic thinking, information retrieval, and interpersonal skills will be essential to your work. You will get involved in strategic business opportunities to apply your skills to higher-level projects and broader responsibilities. Any quality professional who wants to be active in the future must take a leap in that direction now, preparing to wield digital hammers and use electronic nails, the tools of the shrinking global marketplace.

Making the journey one step at a time

So what should you do now to begin the journey to the future? How do you influence your colleagues to think strategically, focusing on developing the skills that will be needed in the future?

ASQ's first step in the journey involved building scenarios for analysis of what might happen. Scenario planning provided alternative views of potential future events. It is not the accuracy of the

scenario or the relevance of its outcome that is most important; it is the ability to plan and implement a transition from the current condition to the future that is most important.

Once this gap was estimated by the Futures Study Team, current practices were extrapolated to determine what actions are required to move toward the desired state—in this case to the situation where basic quality is being used throughout society, advanced quality methods are integrated into all professions, and quality specialists have developed new competencies.

The extrapolation indicated that the business of improvement would be focused on adding value to the corporation and that three possible strategies seemed most likely: improving human skills, technical skills, and problem-solving skills. In other words, three transitions will have occurred based on this extrapolation: the transfer of knowledge from quality professionals to the public at large, the transfer of knowledge from quality professionals to all professionals, and the development of new competencies by quality professionals.

Most important for the profession, quality professionals will become the key problem solvers of the management team, attacking the chronic issues that the organization must conquer in order to succeed. This means that the quality community must embrace two critical factors for sustained success: technical competence and accountability for outcomes.

Step 1: Thinking strategically, acting tactically

Business success depends on management thinking in a strategic dimension and acting in an aligned tactical dimension. This increases the value of the owners' or shareholders' investment, as measured in financial terms, such as return on net assets, earnings per share, return on investment, return on capital employed, operating profit, and cash flow.

These indicators also demonstrate the company's value to customers because sustained levels of financial excellence require that the purchasing criteria of customers be met continuously.

Financial measures of global performance, however, are lagging indicators of performance because they show what has happened in the past and do not help an organization to anticipate problems or to understand changes in its business model as that change is happening. More helpful for management are leading indicators that can predict future results from today's actions.

The measurement system should be able to predict changes in financial success based on changes in daily work processes. An excellent system for performance management measures work processes in a way that predicts the organization's overall performance capability.

These performance measures are linked by cascading objectives that deliver the predicted outcome by aligning activities across the organization. They include a coordinated set of metrics from top-level indicators to the frontline measures of process performance.

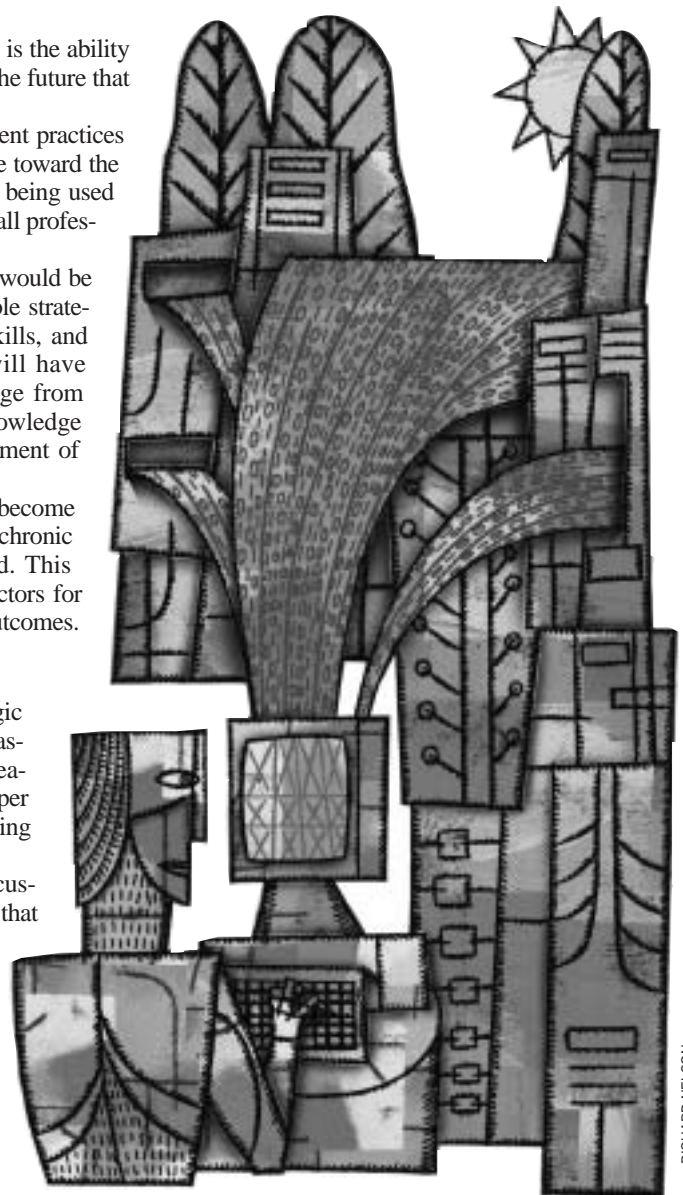
Likewise, business success becomes a function of managing the daily work processes, applying control points to optimize cycle time and output quality, and challenging process owners to operate at the lowest possible cost while optimizing performance of the entire business system. How is such excellence in work process performance delivered on a regular basis?

The universal process of management consists of three subprocesses that define the sequence of actions taken to perform work: planning, control, and improvement. These three subprocesses operate together to optimize the performance of a work process, which leads to the attainment of business objectives. It is, therefore, necessary for future quality professionals to be able to

assist with all three subprocesses.

Most businesses rely on three key processes: product creation, product delivery, and management. Planning is required for all three to occur effectively and efficiently. Project management, logistics management, and annual strategic action planning are all integrated into these systems. All of these also use comparative analyses: product creation uses competitive product analysis and process benchmarking, product delivery uses competitive market analysis and process benchmarking, and management uses competitive customer satisfaction, technology assessment, and process benchmarking.

Control guides the appropriate adjustment of the work in the face of process variation that



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Behaviors Leading to Success

In a study sponsored by a Fortune 500 company, the following behaviors led to success for quality professionals:

- **Customer-orientation.** Focus work on understanding and meeting the needs of external customers.
- **Customer advocacy.** Aggressively represent the perspective of the customer to internal associates in order to improve work activities and achieve acceptable solutions that improve customer relationships.
- **Organizational astuteness.** Work across functional boundaries and build collaborative relationships by developing shared goals based on mutual benefits; anticipate and recognize the implications of actions and decisions on organizational agendas and business strategies.
- **Influence.** Get others to accept new ideas and obtain support for own ideas; gain the trust of others; modify personal style or approach to achieve desired outcome; present ideas and facts in a convincing manner.
- **Interpersonal diagnosis ability.** Identify, understand, and accept different types of people, their skills, and communication styles; exercise self-control in emotionally sensitive circumstances and defuse confrontational situations.
- **Goal orientation.** Seek out and set challenging goals and demonstrate ability to achieve significant results; challenge status quo; have the will to win without putting self-interest first.
- **Persistence.** Follow through until problems are resolved or actions are implemented satisfactorily in spite of resistance or difficulties.
- **Planning and organization ability.** Organize and execute projects and activities in a way that optimizes resources while accomplishing the desired results; set appropriate objectives for self and others in order to achieve organizational goals.
- **Ability to mentor subordinates.** Define associates' developmental needs relative to the organization's needs and opportunities; assist others in developing their aptitudes, skills, and competencies; coach and identify experiences that provide opportunities for self-discovery and learning.
- **Collaborative ability.** Promote common goals to build cooperation among diverse individuals and organizations.
- **Initiative.** Seek opportunities and originate ideas and actions; seek relevant information about problems; adapt new methods, skills, and approaches; accept suggestions from others; take calculated risks to achieve specific business benefits.
- **Professionalism.** Identify problems and resolve issues by rapid implementation of workable solutions; have capacity to work hard over an extended period of time with excellent results, despite the pressures and stress; continuously extend knowledge in professional and business areas; recognize personal developmental needs and seek learning opportunities for personal development.
- **Conceptual ability.** Assimilate and understand abstract numerical and verbal information; analyze complex issues and draw logical conclusions based on priority of importance.
- **Innovativeness.** Generate and introduce new ideas, models, and methods that result in performance improvement; develop imaginative and creative solutions; be able to replace traditional work methods with totally new methods that increase productivity.
- **Communication ability.** Share information and data with team members; express concepts effectively in writing or orally with appropriate body language; encourage others to express their opinions freely; use probing questions that uncover relevant issues.
- **Self-confidence.** Control and direct others; accept leadership roles in order to help the organization resolve pressing issues; obtain the trust and confidence of others.

This study also evaluated the unsuccessful quality professionals. In addition to missing the 16 behaviors noted here, this group was too directive. This relates to behaviors that direct the outcome of group choices, charge others to improve work efforts, or command action that individuals and teams must execute.

comes from identifiable causes. This means that the process has been mapped, measured, and characterized so that all activities and tasks are understood and the root causes of common-place process variation have been determined.

On the other hand, improvement activities are directed toward eliminating the "uncommon" sources of variation. Improvement occurs when the work measures are monitored regularly and opportunities are identified for shifting the process performance in a way that reduces variation or increases the stability of the process performance variables (quality, cost, or time).

Improvement projects that are within the ability and resources of the local process owners should be implemented without delay. Those improvement projects that require capital investment or the participation of cross-functional groups usually require more attention for implementation. The ability to implement this second type of project is a function of its return on investment and its relative priority when competing for scarce resources within the organization. Improvement represents the periodic assessment, identification, and implementation that overcomes chronic process degradation or sporadic degradation that occurs because of a special cause.

How are these subprocesses implemented in a real-world business environment? Strategic insight will be required of the next generation of quality professionals, who will be called upon to facilitate this planning process that transforms strategy into daily work objectives. This will require quality professionals to have detailed business knowledge and understanding of the direction of the company.

Step 2: Harnessing technology, acting proficiently

To manage a business well, it is important to have a variety of means to solve problems. Sporadic problems should be detected by the work group teams, and they should apply their problem-solving and process tools to resolve any defect-producing situations. Chronic problems should be addressed by the professionals in their areas of vocational competence.

The quality professional of the future should be able to harness technology to analyze complex business problems.

Because all employees will have mastered the basic analysis tools and functional professionals will have mastered advanced quality analysis tools that are related to their professions, quality professionals will need expertise to address the remaining problems.

Karou Ishikawa once said 80% of all problems can be solved with basic quality tools: those being used by all associates. Applying the Pareto principle, it seems reasonable to postulate that 80% of the remaining 20% of all problems can be solved by professionals using the advanced quality tools. This would leave only the last 4% of all problems—the truly tough ones—the expert problem solvers that remain in the quality profession.

In addition to this trend, a second trend influences the job content of future quality professionals. Today, in many large organizations, the responsibilities of quality professionals are being merged with human resource professionals (industrial psychology, training and development, employee relations, organizational development, and so on), industrial engineers (applying such tools as design for manufacturability, process capability analysis, statistical process control, and work process measurement), and information technology professionals (work process analysis, information management, and systems analysis). This trend is being driven by the overlapping charters given to these functional organizations for process improvement and building teamwork at the front line.

In addition, the expansion and integration of information technology has been a catalyst for the convergence of competence. It will be much easier to bring these functional areas together once the core elements of their traditional competence areas have been dispersed to frontline employees and once teams are self-facilitating and empowered to use real-time data for adaptive improvement of work processes, requiring only occasional support for obtaining nonroutine data or applying more sophisticated analysis tools.

Some competencies that are not traditionally covered in these professions, which will become more critical, include reliability engineering; process design; product and service design; anticipation of customer requirements, expectations, and factors that will cause customer delight; customer and employee survey design and administration; and management of quality system certifications and product approvals of government agencies, such as the Food and Drug Administration and Federal Communications Commission.

Step 3: Behaving with quality competence, acting empathetically

The quality professionals of the future must be able to act empathetically to relate to the people involved in all areas of the organization, from frontline workers to top-level managers. They must be able to adapt to the different conditions of work that occur at each organizational level and across the different styles and types of management that individuals exhibit. They must be flexible so they can influence individuals and teams to come to collaborative decisions, in addition to providing the technical support required for handling complex problems.

The sidebar “Behaviors Leading to Success” lists the results of a study by one company.

Step 4: Living locally, acting globally

The fourth area of expanded competence involves achieving and maintaining operational excellence in the knowledge world

by collaborating within and across organizations. Organizations will not only rely on their own people, but they also will need to build business alliances and partnerships that extend the capability of the firm. Internal competence in managerial, technical, and behavioral proficiencies will be increased by following the first three steps of this transformation process. This fourth step will increase the business’s ability to compete.

There are three areas where quality professionals will build their networking capability: internal networks within their organization, external networks within their profession, and external networks outside their profession.

Quality professionals will need to build internal and external networks of people who share related competence. ASQ’s divisions address this requirement by providing groups that are centers of excellence, such as statistics, reliability, and quality management, as well as communities of practice, such as automotive, education, food and drug, and chemical.

This makes it possible for quality professionals to learn how to apply technical concepts across a field of industries, as well as in specific industrial settings. As the future unfolds, the issues addressed will involve more strategic areas, such as competitive analysis and management analysis.

Step 5: Ubiquitous competence, acting expertly

The future is happening now, across many applications and geographies, but quality professionals have not embraced it and stepped forward to lead the charge. The availability of a wide variety of computational approaches (the electronic hammers) now takes the drudgery out of statistical analysis, making it possible for all employees to handle more complex problems. Quality professionals, however, still will be called upon to help with tool selection and application.

The reality that quality principles and tools can be applied in every organization and situation is apparent when the following anecdotes from the public sector and not-for-profit organizations, historically considered the most challenging environment, are considered.

- In Rochester, NY, a group of Black Muslim men, under the leadership of their Imam, Hanif Abdul Wahid, have partnered with the local community center and formed a group called the Rochesterians Against Illegal Narcotics (RAIN). They use quality methods to identify community problems, prioritize neighborhoods for action, form teams to work on economic improvements, and confront drug dealers with the fact that local residents will no longer stand by and let the drug dealers claim the 19th Ward as their own.
- In Houston, TX, Memorial Baptist Church has been using quality methods to improve management of its local ministry and outreach to its community.
- In Wisconsin, the Madison Area Quality Improvement Network has built an alliance of more than 170 members. This group identifies up-and-coming grass-roots leaders from housing projects, parent-teacher organizations, and other community groups and provides them with a year of mentoring and training in leadership skills with an emphasis on the application of quality improvement methods. Their theme is: “Everyone is a learner; everyone is a teacher; everyone is a leader.”
- In Tacoma, WA, city staff and community leaders have teamed with members of the Deming Institute to learn how to prevent systemic problems. Following a year of education for local business owners, concerned citizens, and city staff, as

well as members of other county, state, and federal agencies, a unified project to eliminate domestic violence is under way.

Quality professionals need to encourage this transition by providing suggestions, fully participating in the changes, and taking personal responsibility for bringing quality into our communities and all areas of our personal lives.

The quality professional faces a tough decision: to sit in an ivory tower on a hilltop and be the archetypical, iconoclastic guru who loses touch with the real world and watches the time pass, or to be a true active learner, who reflects on the past and present and reaches out to discover the pathways to the future.

Are we ready to take this journey? Think back to the technology transitions we have observed over our lifetimes. Many of us learned touch typing on electric typewriters; today's students are aided in their learning by high-powered Pentium microprocessors. Yesterday's textbook doesn't even fill a single CD-ROM.

We must face the future not with technophobia, but learning how to apply technology in appropriate ways to help ease the problems we face as people involved in ever more complex work processes.

The pace of technology has accelerated over the last 50 years at a blinding rate. Inevitably, quality professionals also must change or be left on the sidelines. Change, however, should fit well into the world of continuous improvement. Quality professionals accept the fact that work processes must change to improve. Will the necessity of personal changes in competencies and approaches be so widely accepted? The future will answer this question by showing whether today's quality professionals were prepared for their new role or were left by the wayside. How about the fact that we must change as people in order to improve? As Winston Churchill once remarked, "To improve is to change; to be perfect is to change often."

Reference

1. Futures Project report (Milwaukee, WI: American Society for Quality, 1996).

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