GLOBAL

Challenges to well-being and success are affecting individuals, organizations, and society on a daily basis. By expanding the role of the quality professional, even seemingly insurmountable problems can be addressed more effectively and efficiently.

QUALITY CONFRONTS GLOBAL CHALLENGES OF THE Coming Century

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In the early 1960s, the musical, "Stop the World! I Want to Get Off," by Leslie Bricusse and Anthony Newley premiered. It told the thought-provoking story of an everyman character, Littlechap, and his journey through life in a circus-like world, as he faced and dealt with many challenges. Quality practitioners now are living in tumultuous times, and they

may be sharing a wish to escape from the current realities that are making it increasingly difficult to increase customer satisfaction and enhance customer experience through improved processes, products, services, and other outcomes. Throughout the past three decades, ASQ has conducted studies to investigate how global megatrends might impact the attainment of quality and improvement, as well as how people/organizations, nations, and even society might be positively affected by the application of quality principles and tools. Although many differing factors have emerged in association with that research, one thing has been consistently clear—change is inevitable, and the pace and breadth of change are increasing rapidly.

This article presents the perspectives of global quality thought leaders from North America, Europe, and Asia regarding the current state related to four of these megatrends and the challenges that they create for the quality community. Four trends are spotlighted, focusing on issues that warrant the attention of quality professionals across the world—digital diversity, business barriers, democratic dualism, and environmental explosion.

Digital Diversity

One obvious megatrend involves the pace of technological change, which has exceeded our capacity to adapt to new options that are generated constantly. Although younger generations deal with technological change based on emotional and intuitive assessments, older generations tend to address it differently, relying on rational and reflective evaluations. This latter approach may appear to be "sloth-like" to younger people, and it may impede the ability to cope quickly with lifestyle shifts that are stimulated by global connectivity and social media. People's lives are becoming saturated with technoshifts, and this reality can create yearning for stability and freedom from the imperative to adapt or become fossilized. In the song "Digital Man" by the rock group Rush, there is a line that sums up this human situation—"He's adept at adaptation because … constant change is here to stay."

In the quality field, continual improvement is essential for managing the challenges associated with process and performance degradation that are natural consequences of entropy. What can quality professionals do to ensure that they are coping effectively with digitization and technological change? How can they manage the diversity of constantly occurring technoshifts more efficiently?

During the 20th century, individuals and organizations experienced the inventions of radios, television, and computers, as well as the beginning of the "Age of the Internet." Digital transformation expanded and technology now rules the workplace and everyday life. For instance, the use of sensors as well as dependence on data and computations are ubiquitous. These days, data can be gathered by satellite, camera, and a wide variety of other mechanisms, making it easy to almost instantaneously share data globally. Younger generations are comfortable communicating in many different environments, including social networks that foster real-time idea exchange. Digital information is transferred seamlessly from laptop to mobile phone to television to gaming platform, providing incredibly diverse ways of accessing and interacting with data.

What seemed to be the creative notions of science fiction writers 50 years ago, are now realities that have changed the landscape of quality

and how its concepts and tools can be applied. Reliance on technology and digitalization not only is accepted but also has become a necessity. These days a "killer app" or some "breakthrough technology" is much more likely to gain attention than a historical novel or a live debate. News reports are delivered in segments that last less than two minutes because attention spans have declined substantially due to constant digital stimulation. Quality of life is subtlely shifting from a measurement standard that is based on human experience to one associated with technological engagement. The human aspect of quality needs to be returned to a dominant position in the measurement of what constitutes a successful life. Restoring this element to its rightful focus will require quality professionals to emphasize cooperative engagement, involvement, and participation in order to foster human collaboration and generate social breakthroughs that lead to an equitable society for humanity. Technology must serve mankind, not the other way around.

In the digital age, quality professionals must seek digital diversity. This should not involve proliferation of emerging technologies, but instead, focus on the integration of technology into the human sphere where quality of life is assured for all through enriched consumer experiences that support pursuit of successful and enjoyable lives.

Business Barriers

Individual responsibilities can be quite disparate depending on the size of the organization; smaller organizations often expect workers to handle a broader scope of assignments and tackle more projects than their peers in larger organizations. This reality is highlighted in the lyrics to the theme song from the recent revival of the Broadway musical, "How to Succeed in Business Without Really Trying," based on the book by Shepherd Mead. It humorously suggests, "How to choose the right company before applying for a job? Make sure you have chosen the right company. It is essential that the company be a big one. It should be at least big enough so that nobody knows exactly what anyone else is doing."

There were 125 million micro, small, and medium enterprises (MSME) in the 132 international economies that were tracked in a country indicators study published in 2010, and 89 million of them were located in emerging economies. Those organizations employed more than one-third of the global labor force.[1] MSMEs face barriers to development and growth that do not exist for their larger counterparts, multinational corporations (MNC). This challenge arises primarily due to the comparatively smaller scale of their enterprises. It is as if the world is divided into a dualistic competitive business environment, where MSMEs are contrasted with MNCs. In the commercial world, the advantage goes to the MNCs, which have the resources and political astuteness to set the global agendas and/or rules by which competition generally occurs.

Essentially, smaller organizations are powerless to overcome this existing construct, so they must find ways to comply with it. For instance, to compete in international trade, the MSMEs often must follow procurement rules set by the MNCs. These established systems favor big business by creating generally insurmountable barriers for the MSMEs. This, in turn, limits the ability of the smaller organizations to trade freely and remain sustainably profitable.

With this issue so prevalent in the global marketplace, it is not surprising that quality requirements often also are formulated in a way that impedes MSMEs' abilities to fulfill them. Some of these barriers occur because requirements related to independent product testing are too costly. Furthermore, complex certifications for assuring quality and safety may require resources beyond the means of MSMEs. In addition to globally mandated compliance standards, large multinational corporations often also levy their own specific rules to constrain the supply chain. Smaller organizations may not be capable of integrating these requirements into a holistic quality system for managing their processes and providing products/services.

Of course, continual improvement is essential for organizations of all sizes. The costs of poor quality are usually very substantial. Much waste exists in the processes of most organizations, and there are many improvement opportunities available for delivering higher value to customers. Clearly, improvement initiatives can enhance business results and competitiveness for smaller organizations and can help the global quality community shift control of the current inequities to a more even-handed approach that fosters success in organizations of all sizes.

Democratic Dualism

"Warning lights are flashing down at quality control" according to the Dire Straits song "Industrial Disease." Some people blame management for the

disease, and others insist the fault lies with employees, but everyone agrees the disease is endemic. Indeed, it seems that dualism always emerges when a conflict occurs that separates winners from losers and results in a zero-sum game.

This reality is obvious in all aspects of society and organizations. Conflicts disintegrate into dualistic democracies that generate the mental boundaries "us vs. them" (e.g., north vs. south, east vs. west, rich vs. poor, elites vs. masses, nationality vs. nationality, gender vs. gender, etc.). Introduced in Robert Axelrod's book, *The Evolution of Cooperation*, a zero-sum game describes a situation where there is no common interest between the parties, so a game begins that divides into winners and losers. If there is a common interest, win-win or lose-lose, results can be achieved depending on the type of challenge that exists.[2] The quality challenge that the world faces in the future can be described by the questions, "How can a more harmonious world be built where all parties gain an improved quality of life? How can the work of quality professionals ensure that there are sufficient social benefits for all mankind and not a logistically unbalanced distribution of them?"

At first it may seem that there never will be enough resources available to meet this lofty goal, but seemingly unattainable things can happen if creativity, innovation, and human ingenuity are applied to the challenges. This has been proven many times throughout history, where imaginative ideas later came to fruition. Indeed, quality practitioners routinely lead teams to solve problems that have plagued their organizations for decades and were believed to be unsolvable. Although the quality field traditionally has been assumed to focus strictly on organizational process, products, and services, and to rely on mathematical and engineering approaches, in recent years quality has incorporated innovation techniques into its tool kit and expanded its applications to much broader social issues.

For example, the healthcare sector is faced with a shortage of affordable and accessible care, and quality of not only patient safety and health outcomes but also operations have become increasingly important. Elimination of waste and errors in healthcare could be instrumental in addressing the inequities that currently exist across the world. The notion of building in quality and doing things right the first time fits healthcare just as it does manufacturing and service organizations. Using improvement methods such as lean and Six Sigma to reduce waste and errors, simultaneously decreasing costs and increasing availability of professional services to diagnose and treat more people—particularly underserved populations—could be possible.

Certainly, there are also issues about the general availability of healthcare in specific areas of the world. Improvements in technology that provide greater functionality and accessibility are being used to reach patients in distant locations that cannot support traditional clinics, hospitals, and other facilities. For instance, healthcare professionals now use technology to conduct virtual consultations, robotic surgery driven from a distance, and 3-D printers to make medications and medical devices that can be available anywhere quickly and inexpensively. New technology also makes it possible for healthcare professionals who have different levels of training and experience to handle more complex issues; technology provides information and tools that increase their professional competencies.

Clearly, the combination of quality improvement methodologies and technology could have a profound effect on the challenge of democratic dualism in healthcare, but there are many other circumstances where those approaches could be used to achieve similar results, too. Here are a few examples.

- Education has similar issues with accessibility. Many qualified candidates for higher education and advanced workforce development are denied the opportunities because affordable options are not accessible to them locally or are too costly.
- Studies have indicated that a sufficient amount of food to feed all people a nutritiously suitable diet is attainable, but issues related to distribution systems stand in the way of meeting this basic human need.
- The need for clean drinking water exists across the globe, but a variety of issues make this resource a precious commodity that is unavailable to all people in all locations.
- Safe and affordable housing also are denied to many people. Homelessness rates are increasing—even in seemingly well-to-do regions.

Although quality practitioners generally focus their attention on the processes, products, and

services offered by their organizations, the time has come for the principles and techniques used in those situations to be applied more broadly to benefit society and mankind as a whole. Quality professionals are able to aid in changing the landscape of issues such as democratic dualism by applying their unique knowledge and skills.

Environmental Explosion

Environmental change has emerged as a global issue recently, and there is increased recognition that quality approaches can help solve problems and establish reliable processes for ensuring a safe environment for future generations. Environmental activism is prevalent across the globe, and many songs lament the losses that have occurred in the past. For instance, Marvin Gaye wrote and sang, "… Mercy mercy me; ah things ain't what they used to be …," and described a variety of harmful environmental impacts that exist today and need to be addressed.

Environmental issues now are important to organizations not only because of increasing governmental regulations and customer/stakeholder attention, but also because there is a greater understanding of how the environment is affected by and affects the well-being of individuals, organizations, and society at large. Neglectful behaviors generate enormous risks in both the short and long terms; therefore, the knowledge and skills of quality practitioners need to include this critical issue in their efforts.

The concept of "causing no harm" is embedded in the definition of quality. It is inherent to the quality being measured by fitness for use, and Genichi Taguchi defined quality in terms of loss caused to society,[3] which clearly encompasses all aspects of life, including the environment. It seems, however, that almost every day there are news agencies reporting another incident of environmental abuse or devastation. Despite the increased emphasis on reducing organizations' environmental footprints, new products/services are introduced that cause environmental harm by wasting energy generated from precious fossil fuels, incorporating harmful ingredients, producing byproducts that can't be recycled or that damage land and/or water, and many other ill effects that can last for several generations into the future. These are societal problems that should be incorporated into quality efforts, not slotted into separate categories that receive far too little attention.

Clearly, the accepted definition of quality needs to be expanded so that leaders and all people understand that this field not only fulfills the needs of customers but also society. Quality professionals should steer discussions away from the question, "Who is to blame for this environmental issue?" Instead they should ask, "What is the root cause of this problem and how can it be eliminated?"

For example, consider the environmental issues related to global climatic warming. As with most complex or "wicked" problems, there is an ongoing debate regarding whether or not this is even a valid issue. On one side of the debate is a preponderance of supporting facts and data developed by the scientific community. On the other side are anecdotal—and often emotional claims—that debate the validity of the scientific research. The debate misdirects attention and impedes the use of quality principles and tools for solving the many root causes of the problem. This quandary poses a significant challenge for quality professionals, who could be leading initiatives to face this challenge in a positive manner.

The gift of quality is to determine problems, symptoms, and causes systematically—however shadowy they might be. Furthermore, the application of quality approaches increases the ability to design processes and products/services more effectively and efficiently with society being considered as the customer in this case. The paradigms associated with the quality field are characterized by a long-term orientation; respect for humanity; emphasis on a purpose that goes beyond self-interest; and regard for facts, data, and variation. The methods used by quality practitioners identify the most appropriate metrics and targets, involving all stakeholders at each stage of process development and implementation. Additionally, reduction of waste and undesirable byproducts are key considerations, and quality management approaches focus on getting all members of an organization to cooperate in the initiatives established to achieve objectives.

Quality management systems once were used to transform organizations in Japan and then the rest of the world. Now, they can help preserve the planet and improve the quality of life for all of society.

Conclusion

The desire to return to a more nostalgic and carefree life is shared by many people in these hectic days that are filled with change and a largely ambiguous future. As Mary Hopkin sang, "Those were the days my friend. We thought they'd never end." Unfortunately, a wistful return to the past may not be possible in the modern world. The role of quality professionals must encompass new dimensions that include preserving the Earth and improving the everyday existence of humanity. Quality professionals have an obligation to apply what they have learned about the technical and human factors associated with this field in support of the continuing betterment of society at large.

In the 1937 precepts of Toyota Motor Company, the emphasis on employee service was not limited to the organization, but it also focused on the country.[4] Similarly, Kaoru Ishikawa reminded practitioners of their higher purpose—actively propagating quality knowledge (theory) and spreading activities (practice), writing "… that quality all over the world be improved, that cost be lowered, that productivity be increased, that raw materials and energy be saved, that peoples all over the world be happy, and that the world prosper and be peaceful."[5]

Understanding of the mechanisms of quality improvement and management cannot stagnate, but they instead must advance into a higher state of profound knowledge, stimulated by technical advances and addressing the evolving global challenges of organizations, politics, and the environment. The key question is "Are members of the quality field accepting Ishikawa's challenge so they can contribute to solving the problems that occur as the world changes?"

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