Back to the Future

'Foresight 2020' offers scenarios for quality's next 20 years

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A FUNNY THING HAPPENED ON THE WAY TO THE FUTURE: IT GOT HERE A lot faster than expected.

During 1995-96, the Board of Directors sponsored ASQ's first futures study. It was a look forward to the year 2010 to analyze how potential changes would affect society as a whole as well as ASQ and its members. At the time, not everyone could see the value of the study, and some questioned whether an exercise in imagining the future would have much usefulness in the day-to-day application of quality. But two developments since that study have confirmed the value of futuring.

First, ASQ took the results of that study, *Quality, the Future and You*, and used them in making several significant changes to prepare for the years to come. These included a constitutional convention that changed the Society's name and streamlined its operating guidelines, a technology strategy that led to a $2 million systems upgrade, a research strategy designed to put ASQ at the forefront of developing new quality technologies and methods, and a new strategic plan focused on building global alliances and increasing the effectiveness of society operations.

The second development has been the arrival of projected changes far sooner than we anticipated. Some examples include the boom in the Internet and in cellular communications, as well as the rapid convergence of telecommunications and computer technologies. We've also seen significant shifts in the global marketplace, with a growing role for China, while Japan—long the mainstay of the Pacific Rim economy—has suffered a reversal of fortune.

Change on such a scale and at such a rate persuaded the board that it was appropriate to take another look at the future and conduct a new study. It is called *Foresight 2020* and was intended to expand our vision to two full decades into the future.

A team met in Milwaukee in the middle of August to sift through data about technological, economic and demographic growth; sort through observations from learned futurists and technologists; and consider the opinions and responses that were solicited from ASQ volunteers at the section, division and national levels. This team was facilitated by the Institute for Alternative Futures (IAF), which is the same not-for-profit organization that facilitated our first study.

Complete results of the *Foresight 2020* study are scheduled for release at the Annual Quality Congress in Indianapolis next May. Over the next few months *Quality Progress* will provide information about the study, starting this month with a look at the scenarios that were developed by the futures team.

Scenarios are a key tool in this futuring process. They describe how current trends may intersect and interact to create the economic and social conditions of the future. These scenarios are not intended to give us a single forecast of the future but rather a range of possibilities, which in turn can be used to test our thinking about current assumptions and paradigms.

IAF describes scenarios as "windows for learning" and suggests that they be used in a way that combines a broad consideration of the macroenvironment with focused attention on relevant aspects of the operating environment. Typically four scenarios of the future are developed: a best-guess extension of current trends, a worst-case look at hard times and two additional versions of a future, both of which are structurally different from the present.

We don't expect that these scenarios will describe precisely how the future will unfold, but we can use them to stimulate our thinking about the role of the quality professional in the future. These scenarios help us see some important implications from our journey back to the future, such as:

- The pursuit of quality must change: becoming more innovative, flexible and faster at implementation of effective solutions that drive business results and reflect customer desires better than competitors do.
- Although the requirement for quality professionals may be diminished, the need for quality and statistical expertise will continue into the foreseeable future.
- Quality professionals cannot afford to be passive but must establish personal plans for development that help them to grow both a broader understanding of business and the required technical and statistical skills that will serve them in the next millennium.
- ASQ must evaluate the findings from this study and examine its structure, systems and style of operation to determine what it must do to prepare to serve its members.

Quality Progress is publishing excerpts from the scenarios that were developed by the ASQ Foresight 2020 Futures Team for two reasons. For the Society as a whole, these scenarios can help inform our thought process as we develop strategy and tactics. In addition, individual members can use these scenarios to explore how their personal lives and careers may be affected by the changes that the future will bring.

As IAF points out, there are no data sets to help us measure the future. But that doesn't mean that we can't make intelligent extrapolations to help us get ready. Take these scenarios and try them on for size. In thinking about how you may or may not fit into them, you may also see ways in which you can shape the probability of any particular projection of the future becoming a reality.

As a society, we can shape the potential future by forming a strategy that erects barriers where possible to those future states that are undesirable. We can also build strategic bridges to help facilitate those future states that we find attractive.

The Fruits of Knowledge

The Fruits of Knowledge *represent the "official future," extending today's status quo—especially the rise of the knowledge economy—out to 2020. In this scenario, quality has been instrumental in realizing the benefits promised by the knowledge society. But many companies and countries have yet to "get the religion."*

Looking back over our collective shoulder to 2000, it's easy to see that quality was quietly responsible for pointing society toward many of the benefits we enjoy today.

The incredible economic boom of the '90s never led to the crash many feared. Instead, as some pundits

guessed, information technology and the rise of a knowledge economy were rewriting the economic textbook.

FORESIGHT 2020

In 2005 a team of economists (now Nobel laureates) unveiled their ingenious application of quality principles to devising new theories appropriate to these realities. This in turn raised quality's profile and prompted many governments to adopt proactive "quality policies," spurring deep-seated sectoral reforms and more sustainable economic health. In 2012 the International Monetary Fund took a cue from these successes and began extending quality's benefits to poorer nations; many economists consider this milestone decisive in the Russian and Brazilian turnarounds.

Technology remains the chief driver of change. In 2013 e-commerce eclipsed global gross domestic product; quality helped by devising international protocols and standards to facilitate, regulate and safeguard transactions. Bandwidth is unlimited thanks to the bevy of broadband satellites ringing Earth.

Convergence (of information technologies) and consilience (of knowledge bases), which in 2000 were just beginning to lift many specialties to new heights of synergy, have borne rich fruit. In health care, for example, the human genome map has been combined with longitudinal data and holistic approaches to yield customized, prevention oriented care.

Machine knowledge exceeds human knowledge: more appliances than people are on-line, and some expert systems outperform human logic. Machine intelligence does not yet exceed human intelligence, but the addition of sensory capabilities, massive interconnection and uncertainty are expected to deliver the breakthroughs artificial intelligence has sought so long.

Thanks to quality, information technology has finally fulfilled its social promise. For five years we have subjected all-important decisions about whether and how to exploit new technologies to a rigorous set of criteria devised by quality experts. But too many nations still toil in the rear, unable to make the leap. Benchmarked processes are being instituted to attack the widening gap between information haves and have-nots.

Technology also has intensified social strife. It's brought myriad new voices to the table, with a consequent rise in "noise." And it has introduced thorny ethics questions: the gene splitting furor makes the 1990's abortion debate look like a kindergarten spat. Also troubling is the rise of a "global hermitage," that population of loners who relate only electronically, shunning the real world with all its bewilderments.

Globalization has been a harsh mistress, sidelining most organizations that fail to apply quality. Leading organizations are learning organizations, and quality is seen as the best strategy for creating and sustaining learning. Knowledge management (KM) is considered an essential subset of quality, systematizing the capture and just-in-time transformation of knowledge into bottom-line value. In turn, quality tools have helped overcome KM's early weaknesses, for example, creating measures and benchmarks for both knowledge processes and knowledge itself.

Mergers and alliances have completely revamped the business landscape. Today's companies are so modular they are more aptly termed "value chains." Each consists of a major brand-holder supported by thousands of niche partners and microenterprises. Competition in most industries is among three or four such value chains.

In the global agora, quality has been a priceless aid for providing customized experiences (every product and service is now couched as an "experience") to history's most demanding consumer base. Aging baby boomers, today's largest and wealthiest demographic, consider basic quality a given. They expect sellers to provide "systematic delight" geared to their personal values, tastes and goals. Thus, service is the prime source of competitive differentiation; it must be personal, information-rich and up to the minute.

Much production is actually in lots of one; other products are released in beta and then customized for or by their purchasers. To accomplish this, supply chain management has become a strategic function. Thanks to quality, the supplier-consumer partnership is mostly mutually respectful, profitable and enlightening (aside from a stubborn stratum of quality have-nots who eschew quality but scrape by in some small niche).

Yet this is only part of today's corporate agenda. Companies exist in a fishbowl, with consumer groups and word of mouth instantly broadcasting their every move. They must be exemplary citizens and environmental stewards. Quality has been used to develop social responsibility measures.

Workers fall into two categories: those who are free to work where they like and those whose jobs chain them to a single location. In either case, loyalty between workers and their employers is nearly nil.

Quality professionals are fewer in number but higher in status. Scholarly practitioners are university presidents or deans. In business they are change leaders and knowledge managers who operate at the strategic level. The Global Society for Performance Excellence (formerly ASQ) is at the crest of this wave, helping professionals and nonprofessionals carry quality's message throughout society.

SCENARIO 2

Back to the Past

Back to the Past *visits a world in which economic and environmental disruptions, ineffective leadership and social fragmentation have created a vicious circle. Quality has spiraled downward, due partly to institutional cost cutting, partly to disenchantment with its outcomes and partly to the profession's own failure to grasp the seriousness of the situation and respond proactively. The profession has dwindled to near extinction.*

Another recession is upon us, the fourth in 20 years. While we can count our blessings that it is not a depression, nonetheless we at *Quality Progress* must convey sad news: Along with the rest of ASQ, we cannot survive this downturn. We must close our doors.

In the spirit of quality, what lessons can we draw from this (perhaps temporary) turn of events? Could the quality profession have tilted the game toward a different outcome?

Today's unwelcome situation originated in the stock market crash of 2003. The high tech bubble finally collapsed, sapped by persistent recessions in Japan, Indonesia and Brazil; Alan Greenspan's untimely death in office was the final straw. From there everything went downhill. Millions of middle-class investors found themselves bankrupt—and unemployed. As major firms lopped heads, small businesses were left without markets and entrepreneurism wilted.

The inequities between small numbers of wealthy and increasingly large and desperate masses triggered breakdowns in cooperation and communication across all social facets. Citizens who could afford it retreated into walled compounds. The number of armed households rose to 75%. In developing nations, economic hardship blew the lid off a brewing backlash against globalization. Tribalist and nationalist protests swelled, destabilizing pro-Western governments. The Sri Lankan conflict drags on; war between China and Taiwan could pull in the West.

The Internet, helpless against organized terror, has become a playground for hackers and hate groups and a vibrant black market in personal and national security data. Gangs have adopted quality principles, making their escapades terrifyingly effective. Most individuals and, increasingly, most utilities have moved "off-matrix." Embittered, millions of citizens have marched to "take back the Net!" A coalition of governments has declared war against the information pirates.

Technology research and development (R&D) itself has spun out of control, with labs and companies ignoring ethical and quality concerns in their pursuit of quick profit. Their laxity has allowed lethal microbes to fall into the hands of terrorists.

While quality professionals could not have averted all these trends, they could have injected a critical note of sanity—encouraging government oversight of technology commercialization and reviving the conversation about sustainability. Quality could have framed the crime debate on crime's root causes and their elimination. More broadly, is there any way the profession could have ensured quality would permeate the knowledge economy? The debilitating cycle of recessions has been prolonged in part by the failure to apply quality to financial institutions.

Speaking of sustainability, ecological disasters have been piling up like the cars in last week's 320-vehicle collision outside Berlin (after brakes failed simultaneously on four trucks). In the United States, funding cuts forced the Environmental Protection Agency to curtail enforcement; thousands of companies began ignoring the regulations (which since 2002 have been based on quality principles).

Globalization has contracted along with everything else. Alliances among nations, customers and suppliers have begun to break down. In global companies, knowledge management and porous organizational structures have largely reverted to knowledge hoarding, organizational pyramids and functional silos. Knowledge bases have been dispersed by massive layoffs. Overall, business has regressed from a quality stance, which had been starting to take hold universally, to a dog-eat-dog model in which the most cutthroat tactics win.

Forced to cut corners, by 2015 most organizations had frozen quality efforts wherever they stood. Many were disenchanted with quality in any case, since a study in 2011 showed no link between ISO 9000 and ISO 14000 certification and stockholder return. ISO standards are no longer supported by most companies. Customers themselves seek the cheap rather than the good.

Governments have become increasingly bureaucratized and hard to do business with due to their paranoia about technology theft and information

security. Reaching national, much less international, consensus on public problems is a challenge. Depression and the breakdown of meaning are the world's most pressing health concerns. Millions spend their waking hours immersed in virtual-reality games and theme parks.

Unsurprisingly, quality in every sector has slid drastically. Although centers of excellence remain, they are islands in a sea of mediocrity. At worst, quality is being fingered for not forestalling the disastrous conditions of our time.

For now, adieu. The haunting questions are left to our readers: Could quality have saved itself? Could it have helped avert economic and social meltdown?

The Sustainability Show

The Sustainability Show *finds a paradigm shift in progress: Sustainability is the central organizing principle for society. Quality is recognized as the best tool kit for achieving sustainability, and its principles, techniques and tools are ubiquitous. However, much of this progress has been achieved at the price of stronger, larger government. There is a foreboding rise in paternalism and authoritarianism.*

Two decades of worldwide turbulence have pushed global society to a sustainability paradigm. Starting in 2001 all the bad habits of the Industrial Age seemed to bear rotten fruit at once. Years of rolling environmental crises, economic meltdowns, social violence and international terrorism finally led shell-shocked citizens to turn en masse to governments, pleading for an end to the anarchy and environmental destruction.

The United Nations effectively became our world government, with executive and legislative branches. National governments, too, are stronger. Public order has tightened, crime has declined, and social networks have strengthened. Faith in the group and authority have revived. And there is a strong consensus for sustainability—an end to the folly of fouling our planetary nest.

However, we have also seen worrying declines in civil liberties and freedom of information. For example, the era of unfettered Internet commerce is over: taxes, access charges and cyberporn censorship have won the day. Perhaps these are just side effects of the pendulum swing toward centralization. But China's rise as a superpower has been influential, too. Since abolishing communism, China has displayed a pragmatic, cooperative face and lingering communist/Confucian paternalism. This style is spreading to non-Asian nations, including the United States.

Demographics will likely reinforce these trends. Baby boomers are starting to exit the world stage, along with their individualistic and idealistic legacy; on their heels, Generation-Xers are bringing a shrewd realism and a preoccupation with civic order to the public realm. And Generation-Yers, now in their 20s and 30s, are vigorous advocates of teamwork, rationalism and institution building; their influence will grow as they mature. So far, the effects are largely positive. Quality is recognized as the ideal set of tactical principles for executing sustainability. The Global Quality Council plays a key role in resolving world issues.

Many governments have diligently applied quality internally, becoming more globally oriented, agile, customer focused and technologically capable. An entire body of theory is emerging around the application of quality to governance in a knowledge based society. Governments' championship of private sector quality is equally keen: In the United States and European Union, public companies include quality in their shareholder reports, and last year the United States anointed its first secretary of quality.

Quality's mandate has expanded to include quality of life in the broad context of community and environment. In health care, to take just one example, this focus has fed into both lifestyle transformation (life expectancies of 95 are common in the advanced nations) and ecological restoration. In organizations, Six Sigma has become standard practice in all sectors.

Environmental sustainability became a regulatory mandate in 2019, backed by the Clean Earth Policy established at the 4th U.N. Conference on the Environment and Development. The policy is enforced by national and international regimes, but consumers, too, overwhelmingly vote with their pocketbooks if a company is deemed noncompliant.

The technological tide is turning away from R&D for profit's sake toward "appropriate" technologies that support social and environmental wellness. Quality also was applied to redefining the system of national

accounts. Now a nation's wealth is not limited to gross national product, but includes natural resources and social health.

Capitalism now aims for "good growth." Free markets are guided by win-win principles, enforced by rules and regulations. The stock market is being completely revalued around long-termism and appropriate technology. Some audacious young people sell stock in themselves, betting on their own future success. EarthDollars, a universal currency devised by quality professionals and administered by the new Global Treasury, have eliminated currency trading while still allowing local markets to set value.

Global society is mobile society. Loosening of national work permit restrictions has created a near global talent pool—and incited many governments to focus quality tools and techniques on creating attractive work/live communities. Employment is managed centrally through the Internet (in the process creating a global database of individuals' characteristics as well as their whereabouts—a development some view as dangerously Big Brotherish). All knowledge workers require basic quality skills to compete.

Corporations and governments share an uneasy alliance. Government regulation is significant—but thanks to quality, regulations are directed mainly at ends, not means, allowing maximum local decision making. Companies that fully reshape themselves for sustainability become inherently agile and knowledge enabled.

SCENARIO 4

The Garden of Quality

*In **The Garden of Quality** our world has turned upside down. Since the millennium we have progressed from allowing technology to drive business and business to drive society, to subsuming technology to human and biospheric well-being. Most large institutions—legal systems, national governments, financial markets, universities—are fraying, giving way to fluid, self-evolving, human-centered systems based on trust and mutual benefit. Quality is invisibly embedded in every sphere of activity. People work within affinal communities to pursue common goals for human betterment. The planet has become a global village.*

Ten thousand years of human history have led us at last from seeking utopia—no place—to a version of utopia—good place. We have much to learn, but it seems that the social and technical structures are finally in place to support universal human and planetary well-being.

Quality has been central to this transformation. In the early years of quality's rise in the 1950s, we focused on inspection because we lacked the ability to control materials and their production. This emphasis shifted to control of work processes and evolved into continuous improvement directed at satisfying customers. In the 1990s an enhanced focus on measurement and statistical methods drove us toward Six Sigma performance.

Finally—following a decade of social and environmental turbulence—in the 2010s we embraced quality into our entire lives, radically reshaping society at every level. Quality itself moved up the value-added chain from operations (doing things the right way) to strategy and vision (doing the right thing). Quality professionals now are called on to lead visioning, as well as conversations about aspirations and co-creation.

What led us to such wholehearted adoption of quality? Snowballing social and ecological crises led to a mass realization that we had to change—fast. So how does our world look today? Let's take a virtual cruise.

Environment. An intensive worldwide research effort, roughly 100 times the scale of the Human Genome Project and supported by DNA supercomputers and satellite networks, seeks to fully map the intricate interactions of

Earth's biosphere and atmosphere. This will allow us to intelligently apply quality to handling the ecological legacies of the 20th century.

Technology. Technology is almost invisible yet almost everywhere. It has enabled new levels of self-governance and mutual aid. All computing is either biological or optical; tangible technology products are relatively few. Universal access to the global network allows it to serve as a worldwide institutional memory, connecting generations and cultures with a shared sense of history and future. Artificial intelligence is integrated into almost all systems, providing error-less service and leaving humans free to pursue the next level of breakthrough thinking.

Organizations. Visions and values—both developed via quality techniques—guide the processes and identities of most organizations. Whereas the Information Age held, "We are interdependent and should cooperate," organizations today feel, "We are one and choose to co-create." Large organizations use quality measurement and reporting systems (the later generations of SA 9000, Natural Step, and ISO 14000 and above) to manage change. Quality is an inherent skill of all knowledge workers—and every worker is a knowledge worker. Leaders are selected (usually under protest) by merit, and their mandate includes helping their teammates learn, grow and have fun.

Everyone is to some degree a generalist. Work is satisfying, with strong emphasis on motivation and recognition; creativity is born of play, learning and passion. E-lancers from all over the world collaborate virtually to solve problems and advance social goals. A huge library of best practices is maintained on the network by the Global Society for Performance Excellence (formerly ASQ), among its many functions.

Individuals. Serene and secure within concentric circles of family, work team, community, bioregion, planet and cosmos, most individuals enjoy strong self-esteem and mutual trust and respect with their familiars. Self-actualization is seen as one of society's chief purposes, and the proper balance of freedom and responsibility is a source of constant experimentation.

Society. Society is more pluralistic than ever as it fragments peacefully along affinal lines. We seem to be moving toward unity with diversity. Most problems are solved at the local or regional level, but local leaders cooperate intensively over the Internet.

Government. Governing institutions are minimal and nimble, focused on common services, such as transportation and common problems, such as environmental restoration. Even so, they need to watch their step. Today's citizens are not likely to cut much slack to governments that lapse into dogmatism, inefficiency or getting too big for their britches. QP