The world is changing at an increasingly fast pace, and, of course, the quality field must adapt to fit its shifting landscape. Unfortunately, the path forward is at times murky, and it isn’t easy to predict exactly how to prepare for what will come; however, we cannot sit back and wait for the new situation to emerge fully before we begin to update our organizations’ quality systems and our own professional capabilities. That’s why ASQ partnered with APQC and the International Academy for Quality (IAQ) in 2016 to conduct several research studies to explore the perspectives of global organizations and leading quality professionals. This article recaps those investigations and suggests some actions that practitioners may want to pursue in order to be ready for upcoming developments.
Expert Panel Assessments

Initially, two focus groups gave participants from ASQ and IAQ the opportunity to share their views in an open forum. A broad set of topics and questions related to the future of the quality profession and quality professionals was addressed. Approximately 50 people participated in one or both of the focus groups. A list of topics was used to start the discussions; then two more specific questions served as the basis for further exchange. The research design assumed that quality practices and the professionals who lead their application would need to respond to changes in the business environment to have a differentiating impact on organizational success. At the same time, the knowledge and skills necessary to be a competent quality professional who could lead improvement and ensure high organizational performance also would be likely to change. The focus groups captured summary remarks from the discussions, which were assigned to high-level categories, and affinity diagrams and Pareto charts were created.

A follow-up survey was conducted next. The expert panel was expanded and included members of IAQ, ASQ world partners, ASQ past chairs, and the ASQ Executive Roundtable, as well as emerging leaders in the quality field. The survey requested some high-level demographic information and invited respondents to answer the same two open-ended questions. It was distributed to 222 individuals, and 48 percent of them were from outside the United States. The participation rate was 12.5 percent. Once again, the feedback was categorized, and affinity diagrams and Pareto charts were prepared.

The more in-depth comments collected in the survey aligned well with the summaries from the original focus group discussions. The findings of these two research studies are summarized in the next two sections of this article. The actual Pareto charts appear in the online supplemental article, “Expert Perspectives on the Future of the Quality Profession and Its Practitioners.”

Factors Impacting the Future of the Quality Profession

The first research question was “What are the key changes you see in business in the next 10 years?” The notes from the focus groups were sorted into the following categories, and some of the reported discussion points are listed to provide insight on the expert panel members’ perspectives:

- **Quality concepts and tools**—Focus on lean methods and incorporate reliability more into quality management. Retain the old tools, but develop new tools as well—particularly ones that fit the specific industry or function. Different considerations will affect quality systems in the future, such as market demands, changing customer requirements, the need for increased flexibility, pace of change, etc. Quality needs to be an organization-wide strategy managed at the board level, not a department.

- **Definition of quality**—The definition of quality needs to be updated; value may be the best description for quality and culture needs to be encompassed in the definition of quality. Quality goes beyond products and services, applying to all aspects of life.
Global considerations—Nations will need to establish brand identities. ASQ and other quality organizations’ policies and practices will need to be fine-tuned to fit global needs better.

Education/Training related to quality—Information on quality/value needs to be instantly accessible to increase learning.

Impact of technology on quality—Technology will have an increasingly important impact on quality and quality systems.

Using a similar process to organize the survey responses related to this area resulted in the following categories with a representative comment.

Acquisition, analysis, and use of data—“Managing change, analyzing data (as technology allows us to collect so much, many are swimming in a sea of data and don’t know how to make sense of it to help their organizations).”

Approaches for sustainable business—“Disruptors will continue to restate businesses as we know them and introduce new ways of delivering value (e.g., Uber, Airbnb).”

Changing demographics and people management—“Baby boomers are almost dinosaurs now; businesses need to rethink how they develop people, the talent they’ll need, etc. Leaders will emerge faster with less experience and more critical thinking and other skills to enable collaboration.”

Factors affecting globalization—“Local products will gradually be valued more (because of the much lower overall environmental impact).”

Impact of IT/internet/technology—“Artificial intelligence will play a greater role in products, processes, and people’s lives.”

Impacts on quality management systems—“Quality management will struggle for resources and will have a problem being a topic for top management.”

In both the focus groups and the survey responses, there was repetitive feedback that quality needed to be raised to an executive-level management system, rather than subjugated to a specialized department or operations. In order to make this change a reality, however, the panelists indicated that the language of quality would need to shift from statistics to finances.

Expert Panel Recommendations: Changing Requirements for Quality Professionals

Of course, as changes occur in organizations and to their approaches for managing quality, quality professionals need to update their knowledge and skills in order to be fully competent. Information provided by the focus group participants and survey respondents made it abundantly clear that complacency was not an option for practitioners who wanted to ensure a solid career path in the future. The second research area delved into this by asking, “What are the skill gaps in the current quality professional? What skills do they need to meet business requirements in the next 10-15 years?”

Three major aspects of professional development were proposed—management/leadership, technical, and people, as described in more detail in Table 1. Five topics were mentioned specifically in the survey—business acumen and leadership, critical thinking and analysis, em-

<table>
<thead>
<tr>
<th>Major aspects required for professional development</th>
<th>Specific components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management/Leadership</td>
<td>Vision and strategic plan development and deployment</td>
</tr>
<tr>
<td></td>
<td>Communication skills</td>
</tr>
<tr>
<td></td>
<td>General business skills, including accounting/finance and marketing</td>
</tr>
<tr>
<td>Technical</td>
<td>Integration of quality systems and technology/IT</td>
</tr>
<tr>
<td></td>
<td>Knowledge management—retaining and applying quality — and process-related learnings</td>
</tr>
<tr>
<td></td>
<td>Critical thinking and analysis—particularly handling big data</td>
</tr>
<tr>
<td></td>
<td>Statistically based process improvement, including failure analysis, root cause, and preventive action</td>
</tr>
<tr>
<td>People</td>
<td>Culture development and adaptation</td>
</tr>
<tr>
<td></td>
<td>Change management and employee development and coaching/mentoring skills</td>
</tr>
</tbody>
</table>
ployee performance and cultural change, process management/improvement/tools, and value of quality (from a strategic perspective as it affects organizational sustainability).

Here are a few of the comments that were submitted in regard to this area.

• “Quality professionals need to be more innovative, creative, business savvy. They need exceptional skills in leading people in collaborative and innovative business processes.”

• “Statistics is being watered down. Individuals are not being taught to analyze and interpret data. Quality professionals need more training in advanced statistics.”

• “Concentration on failure analysis, root cause, and preventive action (not just ‘Let’s make everyone happy so the meeting will get over sooner and I can go back to Pokémon.’).”

• “Applying quality thinking to other business functions such as planning, marketing, support, product retirement. Quality training must go beyond the ‘problem solving’ mode to ‘value creation’.”

Organizational Perspective:
Global State of Quality

ASQ and APQC initiated groundbreaking research to identify quality successes and opportunities from around the world. More than 2,000 survey responses from organizations in more than 22 countries provided the foundation for the first report, *The ASQ Global State of Quality: Discoveries 2013*. Regional quality trends throughout the world were identified, offering a baseline of benchmark data to help organizations compare their performance to the current state of quality and pinpoint new growth opportunities.¹

These foundational results were taken a step further in 2016 when a second study was conducted, involving 1,665 survey respondents with 59 percent representing manufacturing and 41 percent service organizations. This was a notable shift from the previous research where the split was approximately 50/50. Figure 1 shows a more detailed breakdown of organizations, which indicates that a reasonable cross-section was obtained.²

The five themes described in the sidebar, Research Discoveries 2016, reflect the overarching summary of the survey results. More detailed information on those findings is available in the supplemental online article, “Global State of Quality Detailed Results.”

### Research Discoveries 2016

**Theme 1: Quality: Strategic Asset, Competitive Differentiator**

- Shift toward centralized governance
- Increased frequency of quality metric reporting

**Theme 2: Business Performance Impact**

- Quality has a direct impact on business performance
- Measurement and visibility of financial impact is limited

**Theme 3: Accelerating “Customer”**

- Concept of customer as the only one who can define quality is shifting
- However, customers are still the primary influence on quality programs and business objectives

**Theme 4: Setbacks—Controlled or Not**

- Managing setbacks continues to be an issue for quality departments
- Many organizations lack measurement and visibility of setback’s financial costs

**Theme 5: Knowledge, Learning, and Culture**

- Knowledge retention and training vary widely globally, as does perceived impact
- Types of training provided to employees is similar across industries
**Expert Panel Perspective: Global State of Quality**

These themes served as the basis for questions used in the most recent exploratory study. Members of IAQ and recipients of ASQ’s Feigenbaum Medal, which recognizes young individuals who have displayed outstanding characteristics of leadership, professionalism, and potential in the field of quality and also whose work has been or will become distinctly beneficial to mankind, were invited to participate in this study. Table 2 provides the percent of responses obtained for each of the 18 scalar questions in this survey, and Table 3 lists the categories that were generated when the responses to the six open-ended questions were sorted. A third online article, “Following Up on the 2016 Global State of Quality Research Study,” presents the graphical

Table 2: Survey Results for Scalar Questions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Survey item</th>
<th>Percent of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Quality: strategic asset, competitive differentiator</td>
<td>Quality is shifting from a continuous improvement focus to a competitive differentiator.</td>
<td>27.3 48.5 15.2 9.1 0.0</td>
</tr>
<tr>
<td></td>
<td>Leadership is looking at quality measures more frequently.</td>
<td>20.6 44.1 17.6 17.6 0.0</td>
</tr>
<tr>
<td></td>
<td>Leaders are interested in different quality measures now than the ones on which they used to focus.</td>
<td>14.7 47.1 23.5 8.8 5.9</td>
</tr>
<tr>
<td></td>
<td>There is a shift toward centralized governance of quality processes.</td>
<td>8.8 41.2 20.6 29.4 0.0</td>
</tr>
<tr>
<td>Business performance impact</td>
<td>The impact of quality now is measured in terms of business performance.</td>
<td>20.6 35.3 26.5 17.6 0.0</td>
</tr>
<tr>
<td></td>
<td>Organizations have difficulty quantifying the financial impact of quality.</td>
<td>41.2 35.3 14.7 5.9 2.9</td>
</tr>
<tr>
<td></td>
<td>The financial impact of quality should be measured in the future.</td>
<td>50.0 32.4 8.8 5.9 2.9</td>
</tr>
<tr>
<td>Accelerating “customer”</td>
<td>Customers currently define quality.</td>
<td>26.5 44.1 23.5 2.9 2.9</td>
</tr>
<tr>
<td></td>
<td>Customers should be the key drivers of quality programs and objectives.</td>
<td>41.2 41.2 2.9 11.8 2.9</td>
</tr>
<tr>
<td></td>
<td>Organizations should leverage the impact of customer experience and brand reputation.</td>
<td>52.9 44.1 0.0 2.9 0.0</td>
</tr>
<tr>
<td></td>
<td>Organizations should share product quality information with customers.</td>
<td>55.9 29.4 11.8 2.9 0.0</td>
</tr>
<tr>
<td></td>
<td>Organizations should train quality resources in customer experience skills.</td>
<td>61.8 32.4 5.9 0.0 0.0</td>
</tr>
<tr>
<td>Setbacks—controlled or not</td>
<td>Total investments in quality are increasing.</td>
<td>9.1 30.3 27.3 33.3 0.0</td>
</tr>
<tr>
<td></td>
<td>Most organizations know how much they are spending on remediating quality-related setbacks.</td>
<td>2.9 8.8 23.5 52.9 11.8</td>
</tr>
<tr>
<td></td>
<td>The highest frequency of setbacks is product defects (versus supplier-related, service delays, etc.).</td>
<td>9.1 39.4 24.2 24.2 3.0</td>
</tr>
<tr>
<td>Knowledge, learning, and culture</td>
<td>There is a large variation in the impact of lost knowledge.</td>
<td>29.4 52.9 8.8 5.9 2.9</td>
</tr>
<tr>
<td></td>
<td>The loss of knowledge affects quality programs.</td>
<td>52.9 32.4 8.8 2.9 2.9</td>
</tr>
<tr>
<td></td>
<td>The focus in most organizations is on training of improvement disciplines versus compliance activities.</td>
<td>5.9 29.4 41.2 23.5 0.0</td>
</tr>
</tbody>
</table>
Although there are prevailing perspectives among the expert panelists, there certainly is not a consensus. There was a definite sub-set of the respondents whose opinions directly opposed the mainstream perspectives—in general they think the world of quality always has been this way (and they don’t see the changing world as having an impact on those historical situations). Furthermore, the survey participants had a tendency to disagree or be more divergent in their perspectives related to the fourth theme regarding setbacks. Overall, however, the respondents were more likely to agree or strongly agree than to disagree or strongly disagree.

Here are just a few of the comments provided for the open-ended questions.

- “There is considerable variation in measurement systems. Organizations in a highly competitive environment and those leading a quality revolution focus on customer-oriented quality measures. Among these organizations there is a movement toward controlling variation rather than percent or parts per million non-compliance. Such organizations may constitute less than 10 percent of all organizations. Most organizations are still focused on percent defective through inspection. Often they look at averages/mean rather than variation.”

- “Management answers to the governance of the organization (e.g., the representative function of ownership). The board and set of external advisors and business analysts judge results based on financial performance, which summaries for the scalar questions and categorized comments.

Table 3: Categories for Open-Ended Survey Questions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Open-Ended Question</th>
<th>Categories</th>
</tr>
</thead>
</table>
| Quality: strategic asset, competitive differentiator | What quality measures do you think are being used most commonly by leadership? Why? | - Customer satisfaction  
- Cost savings/cost of quality  
- Defect rates  
- Benchmarking and key performance indicators  
- Variation/Six Sigma  
- Productivity and efficiency  
- Compliance and management systems  
- Culture |
| Business performance impact | Why do organizations have trouble measuring quality in terms of business performance? | - Vague/Not clear how to measure positive aspects  
- Contradictory  
- Lack of strong integration/causal relationship  
- Distortion when converting to financial indicators  
- Management and culture  
- Organizational structure (silo approach)  
- No problems measuring financially |
| Accelerating “customer” | Who will be involved in defining quality in the future? | - Customers  
- Stakeholders  
- Management/Organization  
- Those impacted (society and environment)  
- Innovators and strategic planning team  
- Employees/All levels of the organization |
| Setbacks—controlled or not | How are setbacks affecting the definition of quality and the role of the quality professional? | - Changing role of quality professionals in industry  
- Lack of understanding of quality, TQM, and quality-systems thinking  
- Lack of leadership commitment/organizational focus  
- Lack of understanding relationship between quality and cost  
- Poor communication  
- Difficulty and speed of resolving setbacks  
- Changing definition of quality to include safety, reliability, and service  
- Lack of skilled and professional quality teams  
- Rapid manner of spreading setbacks (Internet)  
- Lost market opportunity  
- Not clear |

(continued on next page)
is the language of management; however, internally the language is of the daily management system with indicators of quality, cost, time, and safety. Management’s language requires a conversion of operational measures into financial indicators, and this is done using artificial constructs of standard cost accounting with allocation of unassignable costs. This so distorts the reporting system that performance data tends to become ‘bad data’ and, as physicist Stephen Hawking says so appropriately: 'The cost of bad data is the illusion of knowledge.'”

“+In addition to the customer, impact on society and the environment will become key drivers. Definition of customer is also changing to include all those impacted by the product and/or service. They will play an important role in defining quality.”

“Most organizations have no idea of the real impact of quality on their total cost of doing business (e.g., based on the economic analysis of supplier business, internal economics, and market or customer economic impact). In a recent analysis of a major producer of durable goods, its estimate of the internal cost impact of field failure was found to be off by a factor of five (e.g., estimates of warranty costs were in the range of 1.5 percent of sales, where the reality was closer to 7 to 8 percent of sales). Today’s quality leaders are not trained in the disciplines required for unpacking the true cost of the organization’s quality performance, and the current accounting practices of organizations distort conclusions as they dissipate costs and assign them to

<table>
<thead>
<tr>
<th>Theme</th>
<th>Open-Ended Question</th>
<th>Categories</th>
</tr>
</thead>
</table>
| Knowledge, learning, and culture | How is quality knowledge currently retained? | • Standards/Quality management systems/Compliance  
• Training and conferences  
• Tribal knowledge/each individual  
• No actions to retain/retention of information is not of interest  
• Manual or procedures  
• Repositories/Summary data  
• Societies and councils |
| | How should quality knowledge be retained in the future? | • Training throughout organizations  
• Flexible retirement options to retain key employees  
• Electronic media, such as videos  
• Trained facilitators connecting elements  
• Emphasizing innovation  
• Sustainable processes |
| General | What other trends do you see occurring in the next 10-15 years in quality? | • Understanding societal and sustainability impact  
• Integration of quality, innovation, and/or management systems  
• Quality will be integrated throughout product life cycle  
• Quality becomes part of everyone’s responsibility, not centralized  
• Ability to manage big data  
• Balancing between processes and people  
• Lean, Six Sigma, and quality profession will fade  
• STEM will emphasize soft skills, soft skills in quality profession  
• No change  
• Expanding the quality definition  
• Global markets and teams  
• Quality as a service  
• Greater emphasis on fact-based quality management  
• Successor concepts will have less technical rigor  
• Short lead time influencing quality professionals’ speed  
• Economic impact will be understood  
• Job advancement  
• Lean initiatives  
• Quality as an academic discipline  
• Ethics |
illusionary cost categories through the process of cost allocation, which burdens good-performing processes and products with the costs of the bad ones by spreading unassignable costs across all products and processes uniformly. Accounting practices have the effect of creating management hyperopia in vision at a time when managers are seeking managerial myopia so they can cast personal aspersions on managers for guilt of non-performance in customer experience through root-blame analysis.”

- “Quality knowledge is an essential skill for all the roles instead of for just the quality roles. Now quality is everyone’s accountability. Hence I am seeing that designers, developers, and program managers are trained on quality rather than just the quality group.”

Summary
No one has definitive answers on what will happen in the future, but research studies, such as the ones described in this article can paint a picture of what seems to be on the horizon. Instead of waiting for the changes to occur, now is the time to begin to prepare—much like modern quality management practices that focus on prevention rather than detection.

More Online
The three supplemental articles that provide the detailed research findings in tabular and graphical format can be found at www.asq.org/pub/jqp/.

References