Global Quality Management Advisors

Your C-Suite & CQO

Is There One Common Sense Reason to Keep a CQO Out of Your C-Suite?

White Paper

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Management Systems Focused on Quality
Since 1991

Abstract

In this paper we share our collective 90 years of knowledge performing in two high-consequence heavily regulated business sectors regarding 'The Management of Quality.' Our insights are from extensive experience engaged in Nuclear Energy Production and Commercial Aviation, that with no doubts, operate in high-risk high-value services. We explore and pose questions regarding the critical role of your Chief Quality Officer (CQO). Yes ~ we challenge C-Suites to appoint a CQO.

The Chief Quality Officer ~ Why Not?

Currently, why isn't The Management of Quality represented in the modern C-Suite among the other chief officers? C-Suites originally included 5-7 members such as the CEO, COO, CFO, CAO, CIO, CMO, and CTO. We have seen new appointments in recent years that make sense such as Chief Programs Officer, Chief Data Officer, and Chief Nuclear Officer.

Of course, there's always people that push ideas and agendas beyond any level of common sense. Some ideas truly represent personal agendas of no true value to a business group or other entity. As we researched the Chief Officer topic, we came across an online article by Rob Kelly (his blog 'Job Titles'), posted on ONGIG, February 4, 2020[1] https://blog.ongig.com/job-titles/c-level-titles/

Mr. Kelly's article is very comprehensive and includes three groups of chief titles. A few of the more than 75 titles include CPO, yes Chief People Officer, Chief Talent Officer, Chief Digital Officer, Chief Analytics Officer, Chief Brand Officer, Chief Experience Officer (CXO), Chief Growth Officer, Chief Data Officer, Chief Content Officer, Chief Product Officer, Chief Police Officer, Chief Sustainability Officer, Chief Security Officer, Chief Human Resources Officer, Chief Revenue Officer, Chief Compliance Officer, Chief Risk Officer, Chief Strategy Officer, Chief Engineering Officer, Chief Programs Officer, Chief Restructuring Officer, Chief Transformation Officer, Chief Listening Officer, Chief Culture Officer, Chief Visionary Officer, and Chief DEI Officer, yes – the latest spin on Affirmative Action.

We must say, we're intrigued to know what a 'Chief Listening Officer' does and would like to know how much they're paid? We would think all officers are 'listening.' What does the Chief Visionary Officer do all day - stare out the window dreaming about improvements or labor disputes? We hope that person isn't stuck in a cubicle with no view.

So, why would these positions be created for the company as valued workforce representation and yet the quality discipline is left to Quality Manager and Quality Director levels that are charged with the responsibility for ensuring an entire workforce achieves high levels of quality performance, compliance, and customer satisfaction in everything they do? What message is being sent from the C-Suite when the workforce knows what reporting on quality means at these lower levels? Everyone knows that Quality Managers and Quality Directors, at these levels, are at the mercy of operational production directors, program managers, supervisors, employees, and suppliers responsible for the quality of work. Isn't it true that if employees are not represented in the C-Suite regarding quality, that top management has no need to address it as part of running the company?

We've Googled 'Chief Quality Officer' several times over the years. Typically, the role is defined as something like this "The Chief Quality Officer is responsible for planning, administration, and monitoring of consistent readiness of all quality management, regulatory requirements, and quality improvement processes." In our opinion, this definition works in general terms. Without an accurate, meaningful, and fully endorsed definition of quality metrics by C-Suite executives, a solid system of quality management, effective quality assurance and quality control programs, a strong quality and safety culture, absolutely affects profitability.

What is Quality? ~ The Never-Ending Question

Isn't quality a simple understanding of what you like and dislike or what works and doesn't work? Isn't it shopping and finding a sweater that fits perfectly, compliments your wardrobe, and helps you feel good? Isn't it having your favorite food on a Saturday evening with your favorite friends? If your friends pick up the tab, perhaps you've experienced 'total satisfaction.' Perhaps it's having your favorite cake with family members on your birthday. We know what it is when it comes to our personal quality of life.

Come Monday morning, we're on our way to work to make a living and contribute to the goals and objectives of a business enterprise. Isn't it true you enter an environment of requirements that must be met to achieve specified results? Are you showing up for what will be a great week or, will your week start with numerous unknowns: nagging unsolved supplier problems, needing to wear three hats because of an operational RIF two weeks ago, trying to influence the lead design engineer on your proposed solutions, or overly concerned about the procurement group always being behind schedule with a compliance audit beginning in two days. Every week, we face another week of meeting quality requirements in our work life.

IN THE MEDIEVAL GUILDS OF EUROPE[2] ~ The quality movement can trace its roots back to medieval Europe, where craftsmen began organizing into unions called guilds in the late 13th century. These guilds were responsible for

developing strict rules for product and service quality. Inspection committees enforced the rules by marking flawless goods with a special mark or symbol.

Craftsmen themselves often placed a second mark on the goods they produced. At first this mark was used to track the origin of faulty items. But over time the mark came to represent a craftsman's good reputation. Inspection marks and master craftsmen marks served as proof of quality for customers throughout medieval Europe. This approach to manufacturing quality was dominant until the Industrial Revolution in the early 19th century.

IN THE INDUSTRIAL REVOLUTION[2] ~ Until the early 19th century, manufacturing in the industrialized world tended to follow this craftsmanship model. The factory system, with its emphasis on product inspection, started in Great Britain in the mid-1750s and grew into the Industrial Revolution in the early 1800s. American quality practices evolved in the 1800s as they were shaped by changes in predominant production methods.

IN MODERN TIMES DEFINITIONS EMERGED ~ There are several quality definitions, some industry-specific, that have emerged over the past 10 decades. The most important aspect is that each person understands the applicable definition used by their employer or customer and continually pursues improvements and excellence in what work they perform. The world has improved in endless ways because of the pursuit of quality improvement.

- For starters, quality can be represented by how time and energy is being used to accomplish tasks
- A degree of excellence
- Conformance to requirements
- Superiority in kind
- Customer satisfaction
- Fitness for use
- Doing things right the first time
- Zero defects
- It can represent how many ISO9001 requirements are met
- The degree to which an item or process meets or exceeds the user's requirements and expectations

IN TODAY'S GLOBAL HIGH TECHNOLOGY ERA[3] ~ The American Society for Quality (ASQ) addresses Quality 4.0. Digital Transformation Technological advances of the past decade have resulted in a new industrial revolution often referred to as the fourth industrial revolution or "Industry 4.0." It's a revolution driven by the exponential growth of disruptive technologies and the changes those technologies are bringing to the workplace, the workforce, and the markets organizations serve. https://asq.org/quality-resources/quality-4-0

"Quality 4.0" is a term that references the future of quality and organizational excellence within the context of Industry 4.0 needs and performance expectations. Quality professionals can play a vital role in leading their organizations to apply proven quality disciplines to new, digital, and disruptive technologies.

IN TODAY'S GLOBAL MOVEMENT ~ FOR 'THE MANAGEMENT OF QUALITY'

The ongoing efforts to demystify quality and establish a consensus on its context include entities such as:

- U.S. American Society for Quality, Excellence Through Quality, Excellence Through Quality | ASQ
- ISO 9001 QMS Standards, Concept and Definition of Quality, ISO 9001 - Clause 3: Terms and Definitions (iso-9001-checklist.co.uk)
- Merriam-Webster, QUALITY Synonyms: 271 Similar and Opposite Words | Merriam-Webster Thesaurus
- U.S. Home: The Foundation for the Malcolm Baldrige National Quality Award (baldrigefoundation.org)
- U.S. NIST Quality System | NIST
- U.S. The W. Edwards Deming Institute
- U.S. Quality Leadership & Operational Excellence - Juran
- U.S. Department of The Navy U.S.-Dept-Of-The-Navy-TQL-In-The-Fleet-Theory-to-Practice-J.Wasik-B.Ryan-1993-AD-A275-444-92pgs.pdf (gqmadvisors.com)

IN PRACTICE[4] ~ The profession encompasses Four Management Disciplines, https://gqmadvisors.com/disciplines/

- **Quality Leadership (QL)** The Department of the Navy's definition of QL is based on W. Edwards Deming's ideas. "The application of quantitative methods and the knowledge of people to assess and improve a) materials and services supplied to the organization, b) all significant processes within the organization, and c) meeting the needs of the end-user, now and in the future." U.S. Depart of The Navy TQL In The Fleet Theory to Practice, J. Wasik, B. Ryan, 1993, AD-A275 444, 92pgs.
- **Quality Management (QM)** That aspect of the overall management function that determines and implements quality policy. Quality management includes strategic planning, allocation of resources, and systematic activities for quality such as quality planning, operations, oversight, and evaluation.
- **Quality Assurance (QA)** Those planned and systematic activities implemented within the quality system that can be demonstrated to provide confidence that a product or service will fulfill requirements for quality.
- **Quality Control (QC)** Those actions that provide a means of control and measure of the characteristics of an item, process, or facility to established requirements (inspection or source surveillance, or both).
- **Quality's Path to Leadership ~ Timeline QC | QA | QM | QL - CQO[5]** (See last page) https://gqmadvisors.com/wp-content/uploads/2024/06/GQMadvisors-1900-2024-Tmln-QC-QA-QM-QL-CQO-06-10-24-R1-1sld-1.pdf

IN BUSINESS ~ The Quality word is used in numerous ways as a noun and adjective such as: Quality Policy, Quality Plan, Quality Management, Quality Assurance, Quality Control, Quality System, Quality Tools, Quality Culture, Quality Program, Quality Inspection, Quality Test, Quality Engineering, Quality Audit, Quality Assessment, Quality Nonconformance (and Noncompliance), Quality Corrective Action, and Quality Report.

IN ROLES AND RESPONSIBILITIES ~ If you search job boards, you'll find numerous position descriptions encompassing over 100 areas of responsibility ~ Why? Some position description job postings include well over 35 'bullets' of responsibilities. Likely you won't find postings for CPAs, Engineers, Contract Managers, Attorney's, HR Managers, and others with long bulleted lists of responsibilities because people generally understand what work they perform. That tells us that employers do not understand and don't properly apply the Four Quality Disciplines within their organizational structure. 'Quality Managers' don't manage quality; they assist with the management of quality. Quality Managers and Quality Directors perform responsibilities that assist and advise the workforce. Many in the workforce still fear those working in the quality organization ~ Why?

Quality Gurus ~ Philosophies, Schools of Thought, Applications[6]

The industrial revolution is nearing a 125-year milestone. The advances for humankind are remarkable with incredible life extension and Quality of Life improvements. Global Quality Thought Leaders have dedicated their lives to sharing insights in both philosophical and application aspects. The one common characteristic pertaining to quality we all understand is people. Without commitment, trust, desire, teamwork, and ownership for the quality of one's own work, no entity will survive and achieve excellence. Several individuals are known for their leadership in the management of quality. The ASQ website is a nice location to visit for information regarding the work and studies by: Juran, Taguchi, Garvin, Crosby, Shingo, Deming, Feigenbaum, and Ishikawa.

https://asq.org/quality-progress/articles/guru-guide?id=851d6f00e23044a58006d04e0df2df33

Deming's Philosophy, known as Dr. Deming's "theory of management" and later his "System of Profound Knowledge," represents a comprehensive approach to leadership and management. His philosophy brings together an understanding of variation, theory of knowledge, psychology, and appreciation for a system.

A Philosophy of Quality

Dr. W. Edwards Deming's outlook on quality was simple but radical. He asserted that organizations that focused on improving quality would automatically reduce costs while those that focused on reducing cost would automatically reduce quality and actually increase costs as a result.

Crosby's Philosophy is known for the Four Absolutes of Quality: 1 - The definition of quality is conformance to requirements. 2 - The system of quality is prevention. 3 - The performance standard is zero defects (ZD). 4 - The measurement of quality is the price of non-conformance. In the 1980s, ZD met with push back because of the inference that companies can routinely produce 'perfect' product every time. Unfortunately, Crosby's ZD was merely a philosophical target to always stretch to achieve zero defects.

Quality Guru Quotes[7]

- "Quality is free. It's not a gift, but it's free. The unquality things are what cost money." Philip Crosby
- "If you can't describe what you are doing as a process, you don't know what you're doing." W. Edwards Deming
- "Quality improvement at a revolutionary pace is now becoming simply good management." A. Blanton Godfrey
- "Quality control is applicable to any kind of enterprise; in fact, it must be applied to every enterprise." Kaoru Ishikawa
- "As is the case in everything we do, unknown or chance causes exert their influence." Walter A. Shewhart

https://asq.org/quality-resources

Here is another source for understanding the teachings, methods, and philosophies of some Quality Gurus 'QG'[8]

https://www.qualitygurus.com/9-quality-gurus-and-their-contributions/

Quality Management Tools[9]

Seasoned quality management professionals are aware of and use the various quality tools throughout their business operations. Obviously, the key to success is to use the most effective tool(s) that correlate to the work application(s).

- Fishbone Diagrams
- Gantt Charts
- Pareto Charts
- Benchmarking
- Design of Experiments (DOE)
- Scatter Diagrams
- Requirements Management Matrix (RMM)
- Quality Function Deployment (QFD)
- Quality Plans
- Value Stream Mapping
- Impact Effort Matrix
- Statistical Controls

https://asq.org/quality-resources/quality-tools

Now AI presents considerations and understanding as executives review their business strategies for this wave of change. The AI movement will surely cause the workforce to adapt, engage in continuous learning and training, seek career changes, manage new approaches to work, and leverage the capabilities for improvements in quality, safety, cost, schedule, and security.

If defining and implementing the management of quality as a key management discipline is simple, why has it taken over 100 years to essentially crystalize the few definitions of quality and have a logical basis for execution across numerous global sectors? Consistent use of the quality language is critical for communicating quality-related requirements, activities, and tasks. According to Census Bureau Statistics of U.S. Businesses[10] there were over 30 million businesses in 2023 https://www.census.gov/programs-surveys/susb.html Is everyone using the same terms and definitions?

As of April 2024, over 20,000 U.S. companies were ISO9001 Quality Management System certified. Considering there's 30 million companies, why are so few QMS certified? The ISO quality standards are not that difficult to achieve

certification or just compliance. The formal quality movement is clearly a work in-progress since the family of quality management standards were published for implementation in 1987.

Quality Glossary ~ Learn the Language

The concepts of Quality include their own language just like finance, engineering, program management, safety, automation, cybersecurity, and other management disciplines. Our online search for quality synonyms resulted in more than 90 terms in Merrian-Webster.[11] The ASQ[12] is an excellent source for terms and definitions: https://asq.org/quality-resources/quality-glossary Professional societies and industry entities typically have their own glossaries.

Quality ~ Defined Performance Requirements vs. Perception

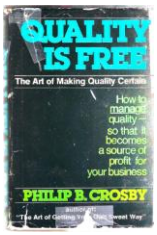
The workforce knows their job is to perform to the standards set by their leaders. It's our desire that you have a strong understanding of your own philosophy and perception of quality and how it applies to your principles and practices in your organization. We expressed how the concept is seemingly simple, until faced with certain situations, especially in a complex work environment. Most individuals in the workplace know that it doesn't take much of a quality problem to tarnish a company's reputation.

One of the roles of the quality professional is to assist the organization with defining performance metrics and determining the proper methods for measuring and verifying conformance to requirements in customer contracts and engineering specifications. Quality engineers typically focus on assisting the workforce for engineered products and services.

What are Requirements?

Basic teachings on quality are founded on the value that if all requirements for procuring something (product or service) are clear, accurate, and achievable (supplier capability), then it's a matter of accepting or rejecting what is produced and delivered. If contract terms, conditions, and specifications have been met, and you are a 'satisfied customer,' then quality has been achieved.

Seasoned quality management professionals know their job is to advise and assist C-Suite executives and senior management in deploying quality-related policies, process descriptions, and procedures that are customer contract-based. The deployment goal is an effective management system within legal frameworks and proven quality system structures based on international norms, regulatory requirements, customer contracts, and corporate objectives. They know each person is responsible for the quality of their work activities and tasks related to stated deliverables.



Before we move forward on the CQO question, we believe a simple and effective definition of quality that most people can relate to is 'Conformance to Requirements.' This definition was established by Dr. Philip B. Crosby in his 1979 ground-breaking book 'Quality is Free'[13] ~ The Art of Making Quality Certain – How to Manage Quality so that it becomes a Source of Profit for Your Business. We believe that was a bold position to take in 1979. How could quality be free?

Dr. Crosby defined a simple approach and perspective by posing the idea of quantifying the number of requirements in his short article 'What are Requirements'[14] published in Quality Progress 1987. In it, he uses an example of one million requirements to run an operation vs. how many requirements were met. Some organizations use Requirements Management Software to account for quality and safety requirements. We're sure readers would agree that it only takes one 'nonconforming requirement' to devastate an enterprise or one's personal life.

Seasoned quality management professionals know they are performing in an environment with complex legal implications. Those in high-consequence sectors such as aviation, aerospace, healthcare, nuclear energy, military asset suppliers are dealing with hundreds of thousands of requirements, if not millions, with critical safety implications. We need to ask routinely if quality-related and safety-related requirements are correct and met every time. A Risk Management (Threat and Error Management) 'What If' workforce environment is imperative. One thought to employ is to use a 'peer review,' 'do-verify list,' or 'self-assess,' discipline for your own work. Perhaps ask a fellow worker for an informal peer review.

What's fascinating about the word quality and its use, is everyone has their own interpretation of what quality is. One challenging aspect is perception. After numerous books, thousands of articles, many certification programs, and many online training courses, wouldn't you think it's finally accepted as a critical management discipline with routine understandings, one definition, and in C-Suite's via a CQO?

In business we measure quality and produce quality metric charts and reports for making high consequence-related decisions. Most people in the workforce know that quality may have severe direct and indirect outcomes and legal implications. We've each worked in high consequence 'safety-related' (quality-related) sectors for well over 40 years. The word usage and meaning are the same for approximately 85% of our discussions regarding industry programs, processes, and procedures. A CQO in the C-Suite would assist the executive team in defining an organization's quality-related goals and objectives.

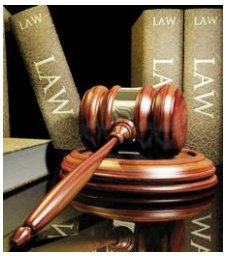
Reason is the Soul of Law[15]

Thomas Aquinas' definition of law is very brief and straight-forward. Most lawyers and even college students will at least have heard of it. It reads: "Law is an ordination of reason, by the proper authority, for the common good, and promulgated." Many things are stated and implied in this brief, compact sentence.

Product and service law essentially touches all our lives. The USA is known as the most litigious society in the world. Products have extensive statements on labels. Credit cards are ladened with legalese wording. Candy bar wrappers include quality policy statements. Warranty labels seem to be everywhere.

Typically, we want to be protected by the law and not be a victim of it. Quality professionals know part of their expertise must be a fundamental understanding of the law and its implications. Before placement of a purchase order, or when a concern arises and a quality professional states "I need to read the contract and specifications," aren't they protecting the company and the public?

Quality and The Law ~ Ignorance of the Law Excuses No One



In our professional worlds (nuclear energy and aviation) we know the inherent need for understanding Quality and The Law. We've always endorsed and lived by the saying 'Ignorance of the Law Excuses No One' knowing that principle is integrated in the safety and quality cultures. Our daily work was performed in environments of federal codes, industry standards, contract terms and conditions, performance specifications, and complex contract deliverables ~ the real world of Quality and the Law.

Quality ~ Assessments | Audits | Surveillance

Assessments, audits, and surveillance are used to determine a level of conformance to requirements. On occasion, they reveal when the product or service exceeds expectations. Each tool has its own purpose, approach, execution methods, and results. The common thread is to produce performance metrics for executives and line management in a way that focuses on potential process improvement of products and services. It's critical to ensure that individuals performing in these three roles are qualified and certified when required. The preparation step must be performed using the applicable requirements in contracts, specifications, process descriptions, and process-related documents. Highly skilled individuals typically perform in these roles with minimum impact on operations and promote a spirit of esprit de corps and leaving workers with a positive experience. The goal is always centered on identifying current and potential issues resulting in improvement.

Quality Performance Metrics ~ Requirements | Data Management

The advent of product final test and inspection and then soon following with statistical process control in the early 1900s, paved the way for business owners and executives to know the levels of consistency of their products and services. Without these advancements supporting mass production of goods required for the WWII effort, historians know the outcome would have been different. In modern times we can benefit from two added business disciplines: Requirements Management (RM) and Data Management.

The RM model by MIT Open CourseWare, based on research by Michael Pasqual, (Data from Raytheon IDS), provides an impactful image of the complexities of requirements within a management system architecture. Seasoned quality management professionals think in terms of the geometric progression of a requirement and typically visualize their paths among functional disciplines. Your CQO typically reveals quality performance in terms that will be shared with C-Suite executives. The CQO, CFO, and COO can express operational performance in terms of Cost of Quality vs. Cost of Poor Quality. Executives will understand profit relative to quality levels of effort.

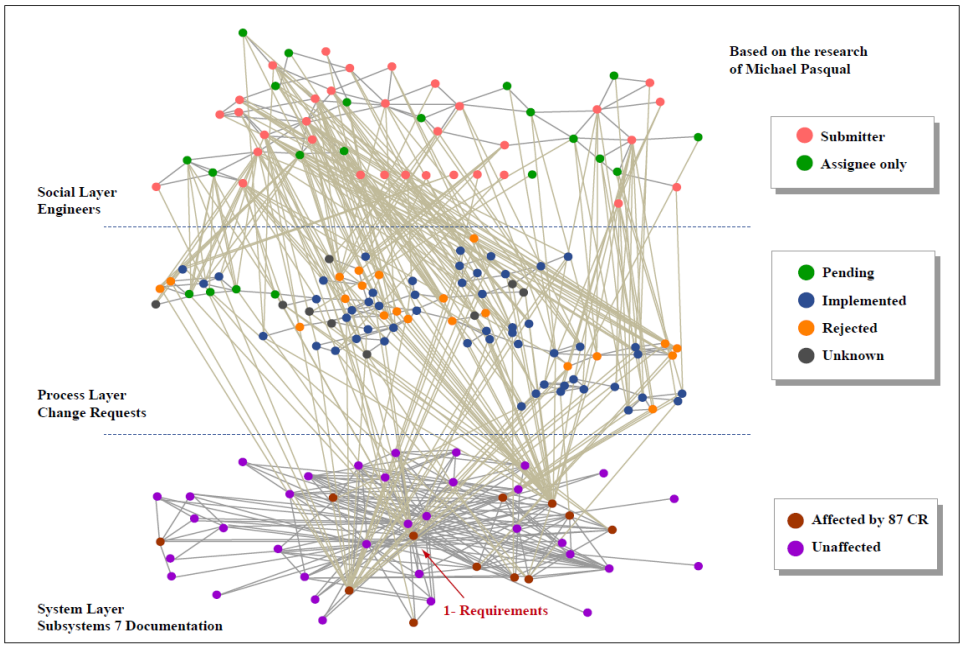


Image by MIT OpenCourseWare.

Data from Raytheon IDS

From those early years of data gathering based on specified core and project requirements, companies have gained vast market shares and greatly enhanced quality performance. Examples of RM | DM software platforms include:

- Jama Software https://www.jamasoftware.com/
- IBM https://www.ibm.com/topics/what-is-requirements-management
- Perforce https://www.perforce.com/products/helix-requirements-management
- ReqSuite ReqSuite® RM Reviews 2024: Details, Pricing, & Features | G2

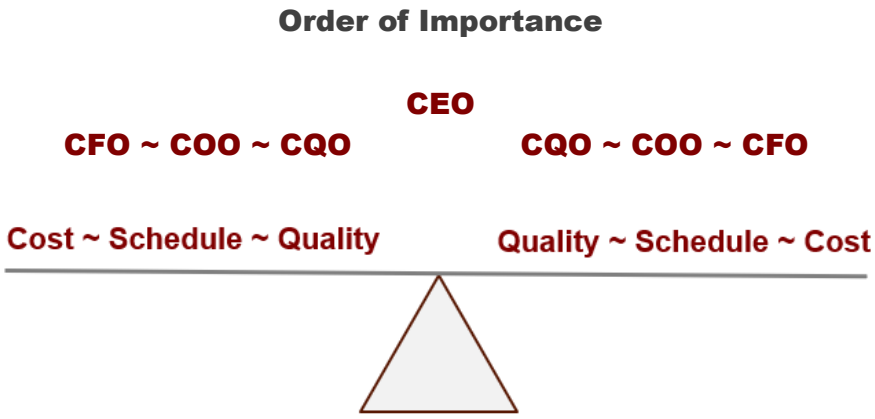
Why Appoint a 'CQO'?

Why would a knowledgeable and seasoned quality management professional work in a company that does not have direct representation in the C-Suite for the entire workforce? Are not the CFO and COO working together to accurately address Cost and Schedule relative to program, quarterly, and annual performance goals? Who's addressing and directing the C-Suites' Vision, Mission, and Policy on 'The Management of Quality' for all operational and program goals and the employees?

Who is the CFO working with to ensure budget allocations are correct and expenditures are effectively reported? Does the CFO understand the true basis of cost impacts when nonconforming conditions arise? Does the C-Suite routinely evaluate quality performance metrics in terms of supply chain performance, cost of poor quality and schedule delays due to rejects/repairs/reworks, customer satisfaction results, and workforce attitudes? Who reports quality metrics to C-Suite members and ensures process improvements will be made as applicable?

Wouldn't you think that at least all publicly owned (traded) companies would be required under SEC rules to appoint a CQO just as SOX compliance (2002) is the rationale and minimum basis for a CFO? We know shareholders want risk prevention methods and customer satisfaction. Why wouldn't everyone in the C-Suite want to know their operational 'Cost of Poor Quality'? Wouldn't your C-Suite want to know areas of employee concern and the root cause of non-conforming conditions?

Collectively, with more than 90 years of experience in the quality profession, why would we keep asking these same questions regarding the three well known key elements of management and success ~ Cost, Schedule, and Quality? Is it because the three elements are typically expressed in this order of importance? We've both experienced deficient planning, weak performance, sub-standard execution, inadequate resources to accomplish goals and objectives, and little to no follow through. In your organization, which depicts the 'Order of Importance'?



Management Systems Focused on Quality

Is it because we all know an 'Effective Quality Culture' is the key to success but it's a complex discipline with extreme difficulty in gaining consensus? Or is it difficult to achieve due to perception differences? Wouldn't an effective quality culture emerge and be ingrained in an organization if the CEO and all the chief officers truly understood and endorsed the management of quality as a part of routine business? Do you wonder how many chief officers worked in a quality professional position during their career path on the way to the C-Suite? We envision executives using the quality word often!

Is it because it's too hard to agree on what quality is, or is it perceived as slowing down production (we've heard this many times during engagements)? If quality problems are perceived as 'slowing down production,' isn't it because somethings are not conforming to specifications (requirements)? Is it that 'nothings perfect'? Is it fear (if quality isn't mentioned then it doesn't exist)? Is it because the concepts, principles, and practices for managing quality are not taught in academia? Is it because it's not taught at home? Is it because no one wants to have their work 'picked apart' or worse be terminated for an error? Don't you wonder how many qualified workers were unjustly terminated?

Quality seems to be a simple concept because we make decisions many times every day using characteristics to judge how we will feel based on the clothes we wear, the weather, the traffic, how Starbucks coffee tastes, the cost of a sandwich, how long the staff meeting lasted and if it went well or not. No one wants to be judgmental but it's our way of life. We believe it's fair to say the quality discipline establishes endless *Good, Bad, and Ugly* aspects of our lives.

There must be clarity, understanding, and agreement on what quality is before it is established for effective application and results. In our personal lives we establish our desired characteristics. In industry, the C-Suite establishes desired characteristics of products and services. Imagine working in a company without clarity, understanding, and agreement on what Quality is? During the early 1900s industrial revolution, Inspection and Testing became methods for product acceptance and rejection (QC). Formal quality methods and programs emerged as mass production increased and now known as Quality Management Systems or more appropriately called Business Management Systems (BMS).

As mentioned earlier, World War II production needs set the impetus for Quality Control Programs in the U.S. supply base. Each supplier was faced with the 24/7/365 fever pitch in delivering products and services on-time, within budget, and meeting what was specified ~ again, the three well known key elements of management and success (Cost, Schedule, Quality). The U.S. military was at the mercy of the supply base to deliver reliable items.

What comes to mind is 'What is Quality'? This paper is not intended to be training materials for answering this ongoing question. It's intended to make it clear that the management of quality is still not in C-Suites and the idea of a CQO in those rooms is long past due! We believe we're providing more than enough impetus for appointing your CQO.

This paper is intended to keep the Why, Who, Where, When of The CQO subject alive until common sense takes over among the sectors and segments that need to have Quality representation in the C-Suite as a matter of routine – not corrective actions due to a catastrophic failure and public apology tour. We mean pure business in our efforts to sound the alarm and bring the general consciousness of Quality Awareness to everyone. Conforming to Requirements is a simple concept and something everyone should understand whether at work, home, school, church, travelling, medical care, and the communities and neighborhoods around the world. What most would call 'Quality of Life.'

Quality Management in Aviation ~ *Scott B. Kaley*

Electronic monitoring of flight data is constantly analyzed for Flight Operations Quality Assurance (FOQA). In concert with Safety Management Systems (SMS) and FOQA, top management in airlines across the world can assure adherence and compliance with all applicable CFRs and company policies to facilitate threat and error management, its negative implications, and associated costs. The Chief Operations Officer, in collaboration with the Director of Operations and Director of Safety, is ultimately responsible for all aspects relating to air and ground FOQA and SMS compliance, efficiency, effectiveness, and continuous improvement.

Boeing Made Big News January 5, 2024, About Quality & Safety ~ How Unfortunate

As this paper presents discussion points regarding the rationale for a CQO in the C-Suite, clearly, on January 5, 2024, Boeing's series of debacles related to the management of quality and implementation of a Safety Management System (SMS) made for a sea change in operations, programs, supply chain management, training, product certifications, and the public's perception of the corporation. We can't imagine anyone not caring about the quality problems. In our professional views, it poses a fundamental question of "which C-Suite executive automatically wears the Quality Leadership Hat" to address all aspects of such an unfortunate accident"?

Boeing's problems did not develop overnight. Boeing's problems have been a series of missteps attributable to a lack of focus on the management of quality. The problems appear to be culturally systemic at Boeing. From the re-engineering of the 787 batteries and electrical systems associated with lithium-ion thermal runaway and subsequent grounding of the Boeing 787 fleet worldwide in 2014, to the 2019 grounding of the Boeing 737 MAX fleet after the loss of two aircraft resulting in significant loss of life within months of each other, the costs associated with worldwide grounding of these fleets are truly breathtaking.

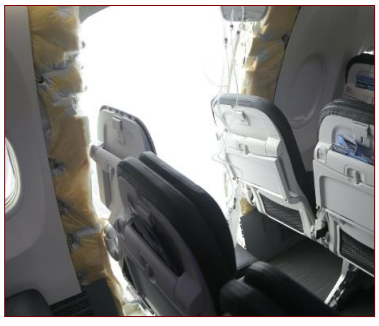
Boeing's CEO, Dave Calhoun, Boeing's First Quarterly 2024 10K Report,[16] and some whistleblowers have several statements now in the public domain to interpret for their own understanding, sense of flight safety, and future perceptions of Boeing. The concerns and fear factors envelop the global commercial aviation business sector. U.S. Congressional hearings are a source that may form a warm feeling, or false sense of security about improvements that

have been or will be made. But, in the real world of airplane design and manufacturing, process and product improvements take time and do not happen without added internal and external time, cost, training, and additional testing and certification steps. Moreover, the secondary and tertiary costs associated with idle production, supply chain vendor disruptions, loss of cash flow with uncertain delivery schedules, breach of contract issues, loss of revenue for airline customers of Boeing fleets, training pipeline costs, planned ASM (Available Seat Mile) capacity loss, further exacerbate the economic toll to the industry.

Boeing has had center stage in the global media since that day in January 2024 regarding their critical 'Quality Control' problems. We find it interesting their representatives don't use quality language such as Quality Management or The Management of Quality in their press releases, including those that have testified before Congress. Messaging with regards to quality is challenging and often causes confusion among experts and the public. There are the Four Quality Disciplines that delineate the roles and responsibilities at each of the four levels. Quality Control is known to encompass the line activities of inspection and testing (verification and accept/reject). QC is typically the discipline for receipt inspection of items from the supply chain. Ideally, and hopefully, Boeing's safety and quality culture is one of error prevention not error detection.

"This is where a clear understanding of the Four Quality Disciplines is very important"

According to Boeing, they are making a move to acquire Spirit Aero Systems (SAS) who supplies the Fuselage Plug Door that failed. SAS is one of the numerous critical key suppliers of safety-related items. Is this a logical business decision assuming Boeing will correct the production process controls and eliminate the potential for future defective products? We can only assume this business step was discussed and documented as one option for 'quality corrective action' during a C-Suite Corrective Action Program meeting. The 'picture is worth a thousand words' in this case will haunt Boeing for years to come (snapshots from the Internet public domain).



Saving $10 Billion or more in FAA certification costs in delivering modified "off-the-shelf" designs, as opposed to a newly designed transport aircraft was clearly a losing strategy. Even a scaled down version of the 787 as next generation

midsize transport category aircraft with a focus on Quality Management would have been a far more attractive investment that had the potential to sustain Boeing's aircraft production for decades, in our opinion.

Boeing 10K Reports First Quarterly Results 2024 ~ Verbatim[16]

Our search for Boeing's quarterly 10K report revealed the following verbatim.

> ARLINGTON, Va., April 24, 2024 – The Boeing Company [NYSE: BA] recorded first quarter revenue of $16.6 billion, GAAP loss per share of ($0.56) and core loss per share (non-GAAP)* of ($1.13) (Table 1). Boeing reported operating cash flow of ($3.4) billion and free cash flow of ($3.9) billion (non-GAAP)*. Results primarily reflect lower commercial delivery volume. **"Our first quarter results reflect the immediate actions we've taken to slow down 737 production to drive improvements in quality," said Dave Calhoun, Boeing president and CEO. "We will take the time necessary to strengthen our quality and safety management systems and this work will position us for a stronger and more stable future."** https://s2.q4cdn.com/661678649/files/doc_financials/2024/q1/2024-03-Mar-31-8K-PR-Ex-99-1.pdf

Why fire the CEO, typically with a large golden parachute, to give the public a feeling that operations will improve with a new CEO and that person's choice of new C-Suite executives? Shouldn't the CEOs management contract stipulate they must remain with the company for a minimum of three (3) years and be an integral member of the corrective action team? Wouldn't this responsibility demonstrate the CEOs accountability, interest in establishing the root causes(s), showing they possessed the body of knowledge to have been in that top management role, all along?

In April 2014, the FAA accepted Boeing's argument that for the 737 MAX, the safety benefit of full compliance with the crew-alerting regulations was "not commensurate with the costs necessary to comply."

In The Seattle Times, October 2, 2019, at 7:45 pm Updated Oct. 3, 2019, at 1:48 pm published the following. "The submission from Boeing then cited an estimate of the cost of full compliance at more than $10 billion. This staggering sum included not only the direct cost to Boeing of redesigning the airplane systems but also the expense of additional pilot training that new systems would require - costs that would have been borne by Boeing's airline customers and would have made the MAX a much less attractive airplane to buy. Costs, coupled with the public's perception of the 737 MAX, the useful life of the 737 airframe is likely to be severely curtailed, in our opinion."

Now, and most recently, the world is watching the Boeing Starliner debacle unfold stranding NASA astronauts at the International Space Station. We speculate, whether or not, it will be SpaceX to the rescue, which will solidify a corporate culture of failed Management of Quality for over a decade at Boeing.

"Will Boeing be the U.S. Corporation to Usher in the CQO Wave"?

Management Systems Focused on Quality

Quality Management in Commercial Nuclear Energy ~ *Paul W. Gladieux*

The Nuclear Power Plant (NPP) Owner (Licensee) is responsible for all safety, quality, and environmental management in all aspects of operations and programs. The Licensee's Chief Nuclear Officer (CNO) executes the daily safety, quality, and environmental activities and tasks throughout the workforce. The CNO is responsible for all aspects relating to NPP site compliance, efficiency, effectiveness, and continual improvement. The only known U.S. commercial nuclear industry supplier with a Chief Quality Officer is Westinghouse Nuclear.[17] In their Nuclear Quality Management System (NQMS), they committed to a CQO in 1994 when they achieved ISO 9001 QMS certification through Llyod's Registrar, London, UK. Who will be the 2nd U.S. company in the nuclear owner/supply chain to appoint a CQO?

Three Mile Island Nuclear Power Plant (Met-Ed, GPU Holding, Co.) Made Big News March 28, 1979, About Quality & Safety ~ How Unfortunate

By early 1979, the U.S. commercial nuclear power plant design/build efforts were well underway to operate over 100 power reactors on the U.S. electric grid. This 'First Fleet' effort inherently developed a workforce that rapidly gained qualifications and certifications, for the high quality/safety class products and services of nuclear power facilities. The supply chain became a robust group for ensuring high integrity power plants for decades to come. On March 28th, the industry took a sudden 180 turn. The GPU Holding Co. TMI Unit 2 accident sent a chill through the entire industry and shook the confidence of the U.S. public. Over 100 plant cancellations followed with no new plant build programs.

In 1984, the industry gained a formal Lessons Learned document by the "U.S. NRC Report to Congress NUREG-1055-1984, Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants."[18] The 564-page report abstract states the following in part.

> ABSTRACT
>
> (In Part ~ 1984)
>
> 'A primary focus of the study was to determine the underlying causes of major quality-related problems in the construction of some nuclear power plants and the untimely detection and correction of these problems. The study concluded that the root cause for major quality-related problems was the failure or inability of some utility managements to effectively implement a management system that ensured adequate control over all aspects of the project. These management shortcoming arose in part from inexperience on the part of some project teams in the construction of nuclear power plants.'
>
> 'The study recommends a number of improvements in industry and NRC programs. For industry, the study recommends self-imposed rising standards of excellence, treatment of quality assurance as a management tool, not a substitute for management, improved trend analysis and identification of root causes of quality problems, and a program of comprehensive third-party audits of present and future construction projects.'

The past 10 years has experienced incredible investments and developments in the U.S. commercial nuclear energy sector with new small reactor designs and safer nuclear fuels. The advanced reactor programs are rapidly moving towards plant construction and startup programs. The Small Modular Reactor (SMR) market is leading this renaissance. Will the U.S. industry owners and supply chain learn from the past – the '70s and '80s first fleet build cycle? The U.S. NRC is counting on quality improvements throughout the industry and suppliers leveraging from the U.S. NRC NUREG-1055-1984 report.

"Why Wasn't General Public Utilities the First Nuclear Plant Owner to Usher in a CQO in 1979"?

We continue to make efforts to educate the workforce on this key management discipline mentioned earlier in our reference to Cost, Schedule, and Quality. Once it becomes obvious that Quality Leadership by hierarchy is in fact the CQO, the question of who manages the various activities and tasks of Quality, then the four disciplines become clear for responsibilities and discussion purposes. Our contention is if a CQO position does not exist at the C-Suite level, then perceptions will be confused, and implementation of the specified quality tools will not be consistently used.

Without a CQO, which C-Suite Executive 'Automatically Wears the Quality Leadership Hat'?

Does that person address quality policy often during daily operations and through internal / external correspondence? Does your workforce know this person is serious about the management of quality and fully understands all aspects required in the leadership role? Is the designee executive position stated in the governing policies and by-laws of the C-Suite? When applicable, does the Board of Directors know who is ultimately responsible for addressing, correcting, and improving quality-related issues? Perhaps take a second look at the timeline 'Quality's Path to Leadership.'

Advisors in our group understand the implications of not having a CQO in the C-Suite. Having a CQO is the next logical step in operational and program excellence. It's a virtual guarantee to foster a strong quality culture and working environment. Employees will respond accordingly, knowing quality concerns and the basis for performance improvement that will directly be represented in the C-Suite. The logical collaboration between the CFO and CQO will further improve a company's performance, overall wellness, and profitability. Performance and compliance will be measured in terms of the cost of poor quality versus high quality. The cost-related numbers will be plain to see. The workforce will learn over time how to correlate 'Conformance to Requirements' with increased profits, less non-conforming products and services, assured customer satisfaction, enhanced safety, and increased market share.

Why wouldn't everyone in your C-Suite want to know their operational and program areas of weakness and high-consequence and high-risk processes that could be improved?

The CQO Body of Knowledge ~ Roles | Responsibilities | Reporting

The CQO basis for qualification at this point is seemingly overwhelming and impossible to define. Who is qualified to know all aspects of quality throughout an entire corporation? Who knows all the requirements and how they are met? Isn't ethics and truth the key to total compliance? Is it possible the CQO position requires a person with inherent generalist 'big picture' skills and the ability to 'reduce their focus' to individual parts? Wouldn't it be best for the person in the CQO role to demonstrate rudimentary beliefs in Quality and The Law with clear understandings of managing risk? We know how fortunate a company would be for the CQO to have hands-on-experience working in the quality profession in QC, QA, and QM before an appointment in the C-Suite as the CQO.

We know from our levels of expertise (commercial aviation and nuclear energy) and relationships with member Executive Advisors in our Group; that other sectors, segments, and applications are faced with the same and many similar regulatory, industry, business, and customer compliance requirements e.g., healthcare, medical device manufacturing, pharmaceuticals, military asset suppliers, ship and bridge building, government site management, engineered safety systems suppliers, and design/build contractors. 2nd, 3rd, and 4th tier suppliers produce the same or similar products and provide services across multiple sectors and segments. Many of the suppliers are faced with being qualified or certified, which typically results in suppliers using the Requirements Management Matrix quality management tool for ensuring accuracy and compliance.

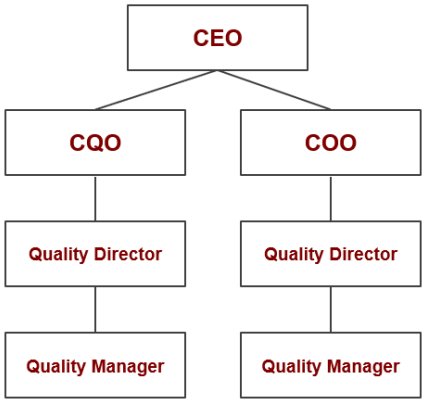
A fundamental principle supporting the management of quality in our modern times, especially in regulated sectors, is that quality professionals are 'free from production pressure.' This does not mean they have the right to slow or stop production unless there is good reason(s). In our past work environments, anything known or 'suspected' is just reason(s) to slow or stop work. In nuclear power generation and aviation, essentially everything is considered 'safety-related.' Our daily routines included always thinking (situational awareness) and 'sweeping areas' (observation) for possible quality problems.

In an ideal world, it would always be clear that good reasons are immediately determined and handled with no conflicts. In the real world of product and service delivery, sometimes known or suspected quality problems rapidly are a point of contention which can create poor opinions about quality professionals. As good hard-working humans we all want everything to work well with no issues. No one wants knowledge of issues to flow up to higher levels of management.

Quality reporting structures vary across the various business sectors worldwide. In highly regulated safety-related sectors and segments, requirements documents state specific reporting roles and structures. These are where 'free from production pressure' requirements apply. What isn't consistent is the requirement of reporting quality-related performance and issues to the CEO. Have you ever talked with a new hire that says 'our Quality Director isn't allowed

to talk with the CEO'? Have you ever heard someone say 'our CQO is the only person allowed to send messages or talk directly with our CEO? Let's consider some basic questions regarding organization structure and reporting.

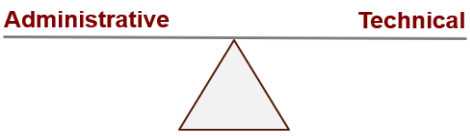
- Does your CQO report directly to the CEO ~ Why Not?
- Does your Quality Director or Manager report directly to the COO ~ Why?
- Which reporting path is how quality is reported to your CEO?
- Which reporting path, in your opinion, is the most effective?
- In your company, can anyone generate a stop work action?
- In your company, can anyone write a non-conformance report?



The CQO ~ An Administrative or Technical Expert?

Isn't it true that most individuals in the workforce perceive the quality profession as highly technical? Isn't quality just dealing with lots of paperwork? Isn't qualification for most quality manager and director positions based on completing technical degree programs (BS & MS levels)? Isn't your quality management system highly technical or does it just seem to be technical because of the complexities and need for highly effective communication among the various disciplines? Isn't the management of quality reliant of 'Information Work' not paperwork?

Perhaps it's the required overwhelming spectrum of requirements that must be defined, understood, implemented, and met? Shouldn't the CQO be an excellent strategist, planner, communicator, organizer, requirements management expert, people-oriented, master of your management system and process control commitments, and know which technical expert(s) to engage at the right time and place? Think about which area of expertise your CQO must possess. Wouldn't a person with mastery in business administration with strong familiarity of technical disciplines be ideal? If the CQO is charged with your management system effectiveness, aren't we addressing administrative expertise?



Why so Many Questions and Inputs About the CQO Topic?

There needs to be a reasonable common-sense explanation for not having representation for the one management discipline applicable to the acceptability of everything done to ensure a company supplies high quality products and services in accordance with customer, business, regulatory, and industry requirements.

A company's global market share across sectors and segments will greatly improve and the U.S. economy will strengthen when the C-Suite properly embraces The Management of Quality by insisting their 'Management System is Focused on Quality' and they embrace their appointed CQO.

The CQO

C-Suite Executives and Boardroom Directors, if you want a feel for where Quality stands in your organization, ask your employees to submit their definition of Quality and the company overall quality performance metric using a 1 to 10 measurement. As internet users, we're asked for performance feedback from retailers, medical providers, and grocery stores. If you want to know your workforce status on the need for a CQO, we suggest you ask a simple yes or no.

- Does your C-Suite include a CQO?
- Are all employees encouraged to directly contact your CQO?
- Is there one common sense reason to keep a CQO out of your C-Suite?

The Federal Department of Quality (DOQ) ~ U.S. Secretary of Quality

Please think about it. Doesn't it make common sense to have a Federal Department of Quality headed by a Secretary of Quality after considering what we've shared in this paper? We have the DOJ, FBI, DOE, EPA, FAA, OSHA, DOC, NRC, DHS, and others. Why not the U.S. DOQ? A starting point is a commitment by the executive branch and congress to enact the U.S. Malcolm Baldrige Performance Excellence Program throughout all U.S. federal governmental organizations. Considering the global adoption and implementation of the International Organization of Standards for quality, safety, environmental, aviation, medical, cybersecurity, and other management system disciplines; we believe certain requirements in these documents should also be committed to by applicable government entities.

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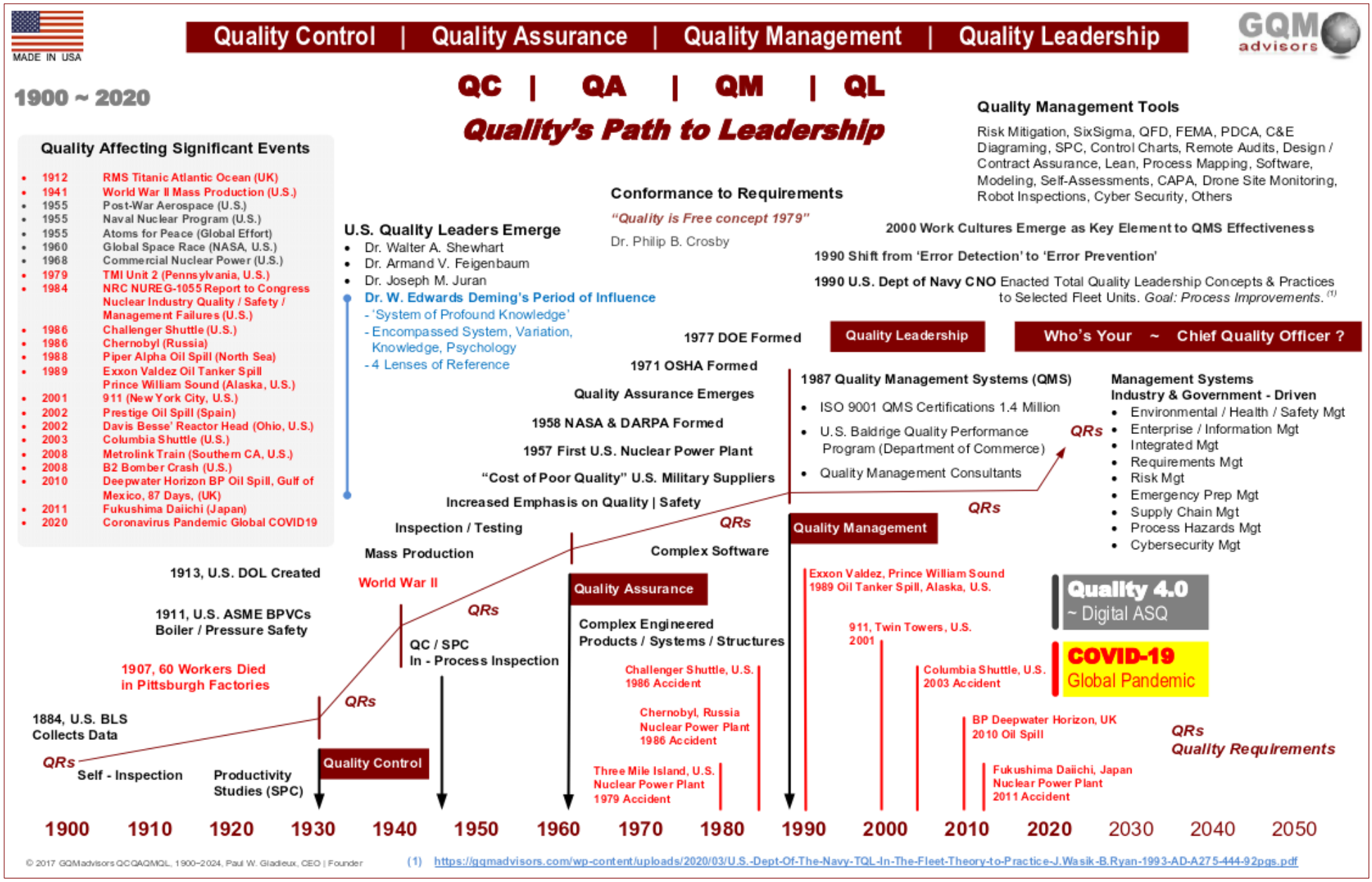

Management Systems Focused on Quality