

Redefining Quality

Key Points

- Quality is defined beyond the more traditional definitions, processes, and procedures.
- Quality is defined as performance excellence as viewed by all stakeholders.
- Quality is a measure of our ability to **economically and profitably** satisfy a set of stated or implied requirements associated with ever-changing needs.
- Quality is not static.
- “Relationship quality” is implicit in achieving performance excellence.
- “Fit for purpose” means meeting the owner’s project requirements (OPRs) and helping the owner achieve capital efficiency.
- “Right the first time” means doing the right things right, on time, every time.
- Quality, importantly, means we must deliver our projects profitably for ourselves.

Introduction

This Executive Insight looks at defining quality within the design, engineering, and construction industry, moving beyond the textbook definitions.

Defining Quality

Quality has been defined by many in many ways. The American Society of Quality has defined quality as “a subjective term for which each person or sector has its own definition.” In other words, you will know it when you see it. This, as you recognize, leaves a lot to be desired. Therefore, the definition continues as follows: “In technical usage, quality can have two meanings: 1) the characteristic of a product or service that bears on its ability to satisfy stated or implied needs; 2) a product or service free of deficiencies.” According to Joseph Juran, widely regarded as the founding father of key quality management programs, quality means “fitness for use.” According to Philip Crosby, the influential author, businessman, and initiator of many quality management concepts, quality means “conformance to requirements.”

This Executive Insight will look beyond the Juran v. Crosby debate and offer a perspective perhaps more fit for the design, engineering, and construction industry—a perspective which in some ways may be harder to deliver.

Redefining Quality

The perspectives on quality extend across industries with various quality management standards and systems (for example, ISO 9001 and Total Quality Management) that seek to further define quality and assure its achievement. From the perspective of an industry executive, quality might be more simply stated as “**performance excellence as viewed by all stakeholders.**”

No longer can quality be judged narrowly as conforming to requirements or just fit for use. The large complex projects our industry increasingly undertakes have a degree of emergence that does not allow us to so neatly put quality into a box. It is not just *what* we do, but is also *how* we do it.

Quality is a measure of the ability of the inherent features and essential characteristics of a process, service, product, or deliverable to **economically and profitably** satisfy a set of stated or implied requirements associated with the ever-changing needs of our clients, our companies, our employees, and all our stakeholders. We must recognize that quality is not static.

Quality is doing the right things right, on time, every time. Quality can only be achieved through continuous improvement and innovation in all that we do.

For the engineering and construction industry, quality has three essential attributes:

- Relationship quality
- Fit for purpose
- Right the first time

Relationship quality is implicit in achieving performance excellence. It is not just what we do and how we do it, but also how we engage as viewed by all stakeholders. Our quality objectives include obligations, stated or implied, to our customers, our employees, our suppliers and subcontractors, our partners, and to all other stakeholders we engage with and to whom we have obligations. They all should expect and receive quality performance in their engagements with each of us. Courteous behavior should be an essential characteristic and inherent in the services we provide.

Fit for purpose means that the process, service, product, or deliverable is suitable for what is intended. For the projects we undertake, this means meeting the owner’s project requirements (OPRs) and helping the owner achieve capital efficiency¹ through consideration of an expanded basis of design² founded on construction-driven execution³ and consideration of life-cycle⁴ requirements.

Quality is a measure of the ability of the inherent features. Not all features are explicitly stated all the time. For example, being in conformance with code and within the law may not always be stated. Importantly, our client’s desires for capital efficiency, capital certainty, and schedule certainty may not

¹ NAC Executive Insight, “Capital Efficiency – Pull All the Levers”

² NAC Executive Insight, “Expanded Basis of Design”

³ NAC Executive Insight, “Management of Engineering in Design-Build”

⁴ NAC Executive Insight, “Life Cycle Control Basis”

be explicitly stated, but are features of what they expect us to deliver. So are ethical behavior in our transactions, resisting corruption, and being good corporate citizens.

The owner defines project requirements that many quality systems use to define achievement of quality, namely the meeting of requirements. It is here our industry must differentiate itself in some important ways. The owner's project requirements (OPRs) do not represent the totality of the requirements a project must meet.

A project must be constructible or, in a more nuanced way, *efficiently* constructible. This is where the notion of a construction basis of design becomes important and shifts our definition of requirements to a more important notion of essential characteristics. Efficiency and effectiveness of construction and more broadly life-cycle performance are important and essential characteristics in all capital facilities.

We must deliver capital efficiency for our clients. Capital efficiency is not necessarily the lowest capital expenditures (CAPEX) The actual optimization point may vary by client or project as well as temporally. Even more, however, we must deliver capital efficiency profitably for ourselves. We have an obligation to our investors and employees and stakeholders in all we do. We must fairly charge for our services, collect what is due us in a timely manner, and spend each dollar as if it were our own.

Right the first time means mistakes should be eliminated and outcomes should be highly predictable. We must continuously improve our processes to meet the ever-changing needs of stakeholders. This is key, especially in an environment where technology and priorities are changing at ever faster rates. Our industry must work even harder to deliver the capital and schedule certainty that our clients require. The perfect approach and deliverable today will not necessarily be so tomorrow. It is important for us to continuously challenge our performance and, importantly, track and understand our explicit and implicit assumptions. Assumption tracking will become an essential element of achieving quality on a sustainable basis.

Summary

Quality is doing the right things. The explicit requirements will vary, but the process of determining what those requirements are must be more rigorous. Process increasingly will be more important than procedures. Also, outcomes will be more important than the explicit nature of outputs and certainly more important than inputs.

Certainty of outcome is an essential characteristic of quality. Whether one thinks in terms of statistical quality control or confidence levels, we and our clients must have expectations met with increasingly tighter performance bands. Quality can only be achieved through continuous performance improvement and innovation⁵ in all we do. Quality has no boundaries.

Focusing on the design and construction industry and the supply chains involved in engineer-procure-construct (EPC) projects, we have defined quality as "performance excellence as viewed by all

⁵ The model T Ford was innovative at its time, but not changing it would have soon turned a high-quality product into a defunct one.

stakeholders.” Quality is a measure of our ability to **economically and profitably** satisfy a set of stated or implied requirements associated with the ever-changing needs of all our stakeholders. Importantly, quality is not static.

In closing, we have recognized that a key dimension of quality means we must deliver our projects profitably for ourselves.

About the Author

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