How will "Managing for Quality" change?

Quality Management
Division
ASQ Excellence Through Quality™

Abstract of Session #11:

Subjectively based definitions of quality have been offered by all "quality gurus;" however, there is a way to develop understanding that is based on a "natural language approach" proposed by David Garvin in a 1984 *Sloan Management Review* article.

Garvin proposed establishing what he had called a "transcendental definition;" a metaphysical or ethically-based definition that can be broadly applied which then becomes customized that are suited to particular applications and industries. Applying this transcendental definition, the purpose would be to create a non-limiting definition that could be translated according to the perspective of individual interpreters and users. This webinar suggests how to use and apply such a transcendental definition of quality.

Quality Management Division
ASQ Excellence Through Quality™

Learning Objectives for Session #11:

Learning Objective 1: Review the Historical Meaning Assigned to Quality
Investigate historically applied definitions of quality and assess the degree of ambiguity that they hold when applied to the basic quality definition as offered by Aristotle.

Learning Objective 2: Decompose Macro-Quality into Operational Ideas
Discover how a macro-quality definition can be applied for interpretation within a variety of organizational and social contexts while maintaining its alignment with the original Aristotelian concept.

Learning Objective 3: Realize How Macro-Quality Applies in the Future
Scrutinize the application of the macro-quality, transcendental definition of quality as it is applied to economics and how it fits with the Sustainable Development Goals (SDG) of the United Nations.

Quality Management Division
ASQ Excellence Through Quality™

Defining Quality to Apply to Everyone, Everywhere

Part 1:

The Historical Meaning of Quality

Quality Management
Division
ASQ Excellence Through Quality™

Quality is treated as an ambiguous term:

It is easy to become confused about the meaning of quality because it is treated differently based on the context in which it is applied.

- **One modern author went so far as to proclaim that quality is an almost entirely subjective term stating that: "I'll know it when I see it!"**
- **Others have attempted to proclaim quality as a tightly bound term as fixed in precise quantity in engineering specifications.**
- **Others blend these two concepts, so the perspective of quality depend wholly on whatever a customer requires.**

- **The purpose of this presentation is to investigate what are the historically-applied definitions of quality and assess their relative degrees of ambiguity compared to the basic definition of quality as offered by Aristotle.**

Quality Management
Division
ASQ Excellence Through Quality™

The Ancient Philosophical Basis:

Philosophical considerations about the meaning of "quality:"

The ancient beginnings of the idea of quality were established by **Aristotle** in his *Metaphysics* (ca. 330 BCE) where he identified four potential ways to think about the meaning of quality:

- The differences of real substances, as in quality characteristics.
- The mode of a subject in motion, of itself; ways which a subject works and may be classified according to its value.
- *Good* [**eudaimonia** (εὐδαιμονία)] a good that is composed of all goods, perfection in virtue or excellence [**aretē** (ἀρετή)], and
- *Bad* [**akrasia** (ἀκρασία)] inferiority or a characteristic reasoning mode that is undesirable as it represents a lack of self-control.

Dr. Noriaki Kano used this Aristotelian definition of "goodness" to establish the juxtaposition of "goodness" and "badness" for his mental model in thinking about product quality characteristics.

Aristotle on the concept of "excellence:"

Moral excellence is a virtue, described by Aristotle, it becomes a habit.

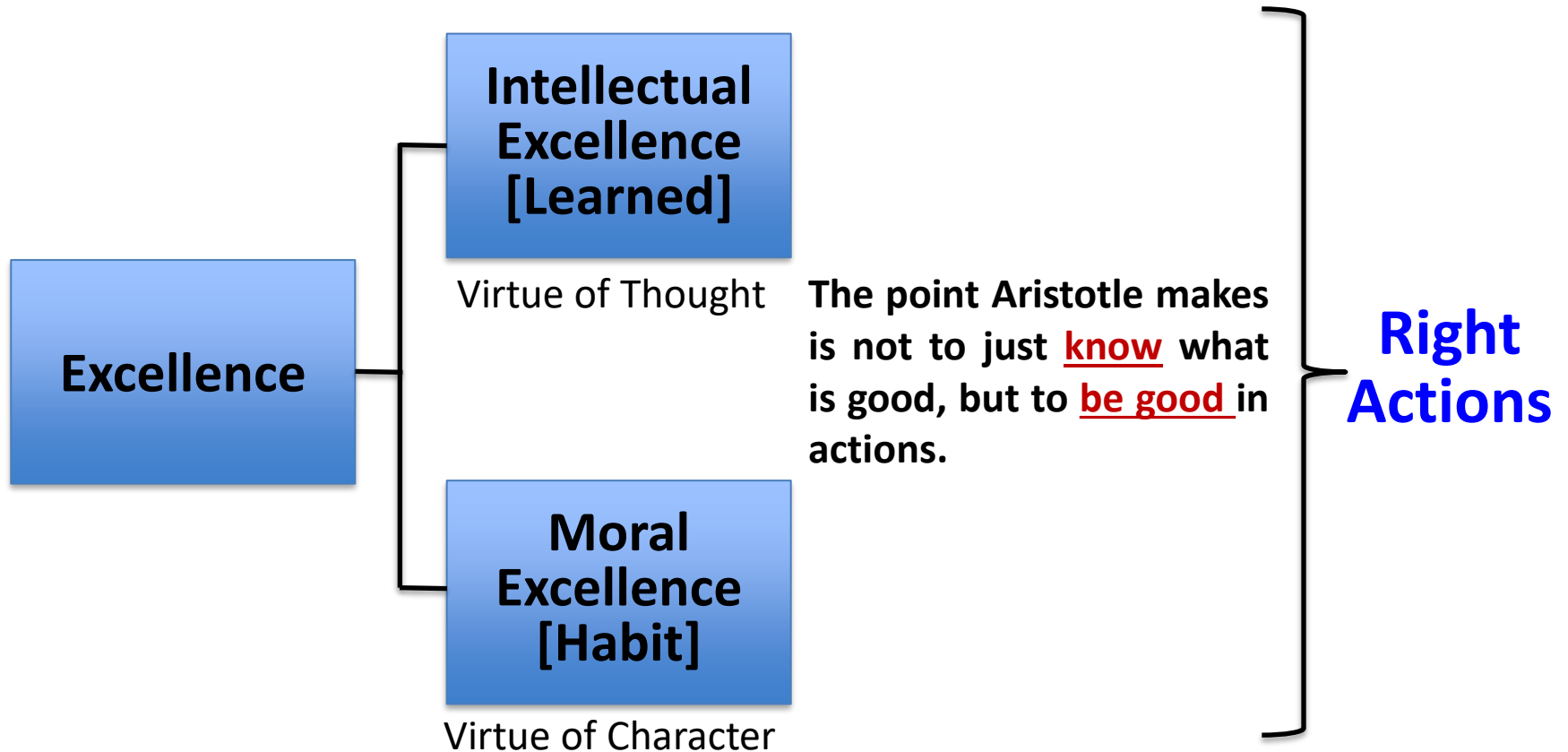"**Excellence**, then, being of these two kinds, intellectual and moral, **intellectual excellence owes its birth and growth mainly to instruction**, and so requires time and experience, while **moral excellence is the result of habit or custom**. These virtues are formed in man by his doing the right actions."

~ **Aristotle**

Nicomachean Ethics, Book II

Quality Management Division
ASQ Excellence Through Quality™

Applying Aristotle's categories to excellence:

In his first book of the *Organon*, Aristotle described how to categorize:

Excellence

Intellectual Excellence [Learned]

Virtue of Thought

Moral Excellence [Habit]

Virtue of Character

The point Aristotle makes is not to just <u>know</u> what is good, but to <u>be good</u> in actions.

Right Actions

Quality Management Division
ASQ Excellence Through Quality™

- **What is the action required?**
- **Who decides what is right?**

Concept of philosophical dualism and quality:

Philosophical considerations about the meaning of "quality:"

René Descartes, a French rationalist, separated thinking about any topic into two ways of comprehending: "*learned ideas*" compared to "*innate ideas*" and that a search for meaning could be pursued to find a "first cause" which Aristotle had called a "final cause" at its source through one of these ways of comprehending (see his *Meditations on First Philosophy* (1641).

John Locke, a Scottish empiricists, defined the concept of quality in *An Essay on Human Understanding* (1689) as the "power to produce ideas in people's minds is the quality of the subject in which this power exists." He distinguished between the primary and secondary characteristics of objects. *The primary quality is inseparable from the object while secondary quality is produced by an interaction with the senses regarding the primary quality*.

Quality Management Division
ASQ Excellence Through Quality™

1. René Descartes (1641 [French], 1999 [English]), *Meditations on the First Philosophy*, 4th ed., Donald A. Cress, trans. (Indianapolis, IN: Hackett).
2. John Locke (1689), *An Essay on Human Understanding* (London: Basset.).

Immanuel Kant: The Categorical Imperative

In his "critiques" Kant explores the limits and conditions of knowledge. People ought to think autonomously and "dare to be wise" – then act.

Immanuel Kant, pioneered the German enlightenment, observed that his mind did not work like an empty container to only process historical data. Intuition and a sense of moral duty provided order to this stream of incoming data. Four of his major works centered on the concept about how the human mind operates and decides.

- *Critique of Practical Reason* (1788): ***Pure practical reason must be cultivated and not restrained****.*

- *Critique of Pure Reason* (1781): ***transcendental things conform to sensible forms of intuitions about "things in themselves."***

- *Critique of Judgment* (1790): ***discusses judgment, intersecting understanding (processing information) and reason.***

- *Groundwork of the Metaphysics of Morals* (1785): ***the rational agent seeks to discriminate between right and wrong; good and bad.***

Kantian critical thinking and judging trilogy:

Undisputed commonsense premises ("the good") yield universal laws.

Groundwork of Metaphysics and Morals

Hindsight [Physics]

Categorical Imperative [Ethics]

Foresight [Logic]

Critique of Practical Reason

Critique of Pure Reason

Insight [Aesthetics]

Critique of Judgment

"I ought never to act except in such a way that I could also will that my maxim should become a universal law." ~ Immanuel Kant

Act as a rational agent according to what should become the universal law.

Aesthetics: Beauty is a purposeful free play of imagination and understanding.

Quality Management Division
ASQ Excellence Through Quality™

12

Industrial application of philosophical quality:

Shewhart's pragmatic concept of quality:

Walter A. Shewhart defined quality in his book *Economic Control of Quality of Manufactured Product* (1931) as having two aspects.

The first was an *objective reality* in the nature of the object that is not influenced by human interpretation (characteristic of the actual entity) and the *subjective reality* that "relates to thinking, feeling, and discerning as the result of this objective reality." It is this subjective idea of quality that Shewhart uses to relate to the "goodness of a thing" which he applied to the outcome that has been fashioned into the manufactured product.

In a 1939 book, *Statistical Method from the Viewpoint of Quality Control*, Shewhart linked backward analysis of quality data to the design of quality in products "*Hindsight supplements foresight: a view backward often adds materially to a view forward*."

1. Walter A. Shewhart (1931), *Economic Control of Quality of Manufactured Product* (New York: Van Nostrand).
2. Walter A. Shewhart (1939), *Statistical Method from the Viewpoint of Quality Control* (Washington, Department of Agriculture).

Theory of control relates to rational agents:

Shewhart expounded a theory of control to describe the distinctions among: "belief" – "justified belief" – "justified true belief" – "science."

Distinctions exist between belief (personal, subjective); justified belief (rational, objective); and justified true belief (scientific law). Science will start with a will to believe as in a research hypothesis with no evidence.

"To indicate the relationship which the ***theory of control*** bears to exact science, it is interesting to consider six stages in the development of better ways and means of making use of past experience. They are:

"1. Belief that the future cannot be predicted in terms of the past.

"2. Belief that the future is pre-ordained.

"3. Inefficient use of past experience in the sense that experiences are not systematized into laws.

"4. <u>**Control within limits**</u>.   **= Statistical Process Control**

"5. <u>**Maximum control**</u>.   **= Engineering Process Control**

"6. Knowledge of all laws of nature – exact science."

1. Essays by William K. Clifford (1877) "The Ethics of Belief" and William James (1896) "Will to Believe."
2. Walter A. Shewhart (1931), *Economic Control of Quality of Manufactured Product* (New York: Van Nostrand).

Quality Management Division
ASQ Excellence Through Quality™

14

Shewhart's application of Kant's trilogy:

Study the past to correct problems and create a predicably stable future.

| HINDSIGHT | → | SPECIFICATION / PRODUCTION / INSPECTION | → | FORESIGHT |

INVESTIGATION   **CONTROL AND TRANSFORMATION**   **PREDICTION**
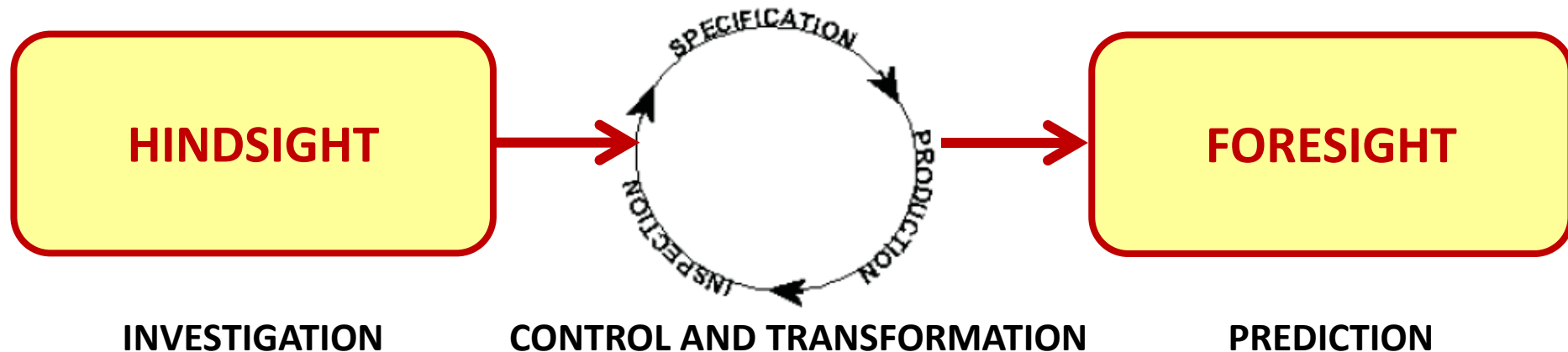
"Hindsight supplements foresight: a view backward often adds materially to a view forward."

~ Walter A. Shewhart (1939)

Statistical Method from the Viewpoint of Quality Control
[Editorial comment made by W. Edwards Deming.]

Quality Management Division
ASQ Excellence Through Quality™

Japanese contributions to quality definitions:

Contributing ideas of quality from Kaoru Ishikawa and Yoshio Kondo:

Kaoru Ishikawa defined a difference in "***backward-looking quality***" and "***forward-looking quality***" as two distinct modes of operation. In the first the focus is on removing issues or problems that have occurred in historical experiences of customers while the second aims to create positive value by enhancing those features that differentiate products from competing rivals.

For Ishikawa, the most important judge of quality is a customer who is the recipient of that product and their judgment supersedes that of the conceptual designer or engineer. ***Value is judged through the eyes of the customer in the final analysis***.

Yoshio Kondo linked customer satisfaction to human ***motivation*** and the idea of "***stimulating the enthusiasm***" to engage in an activity.

1. Kaoru Ishikawa (1989), *What is Total Quality Control?* (Englewood Cliffs, NJ: Prentice-Hall).
2. Yoshio Kondo (1989), *Human Motivation* (Tokyo: 3A Publishers).

Quality Management Division
ASQ Excellence Through Quality™

Japanese cultural influence on quality ideas:

Meaning of Japanese expressions related to quality definitions:

Atarimae Hinshitsu **(当たり前品質):** This means that a product is *"fit for function"* – it can do or perform its intended purpose – the idea that things will work as they are supposed to (e.g. a pen that will write). **Noriaki Kano** called this "must be" quality.

Miryokuteki Hinshitsu **(魅力的品質):** This refers to the *"charm of quality"* (i.e. measuring variables such as appearance, sound, and touch that give personality to a product). It is a quality that fascinates, "worthy of attraction," or "fit for love." It extends well beyond a concern for immediate product characteristics. It has an aesthetic quality distinct from "*atarimae hinshitsu*" (e.g. it is a pen will write in a way that is pleasing to the writer and leave behind ink that is pleasing to the reader). Kano will describe this as "attractive" quality.

Noriaki Kano (1984) "Miryokuteki Hinshitsu to Atarimae Hinshitsu," *Quality, The Journal of the Japanese Society for Quality Control*, 14:2, pp. 39–48. [In Japanese].

Peter F. Drucker on rational interrogation:

We must critically examine what we do and how we do it!

QUESTION 1:*

Are we doing the right things?

We must not waste our time on doing the wrong things.

QUESTION 2:

Are we doing the right things in the right way?

We must not waste our time doing things in the wrong way.

QUESTION 3:

Are we doing the right things in the right way at the right time?

We must not waste our time doing things that are not a priority.

Quality Management Division
ASQ Excellence Through Quality™

*Peter F. Drucker (1956), **The Practice of Management** (New York: Harper).

Armand V. Feigenbaum defining what is quality:

Total quality enables a total focus on the customer to deliver quality.

**Armand V. Feigenbaum
(1920-2014)**

- Quality is **perceived by customers**, not by the company.
- Quality and cost are identical.
- Quality **requires commitment by everyone** both as individuals and as team members.
- Quality and innovation are interrelated and mutually beneficial.
- **Managing quality manages the business.**
- Quality is not a temporary or quick fix but **a process of continuous improvement**.
- Productivity is gained through beneficial investments in quality.
- Quality engages customers and suppliers.

Quality Management Division
ASQ Excellence Through Quality™

W. Edwards Deming defining what is quality:

Measure quality by an "objective function" of customer requirements.
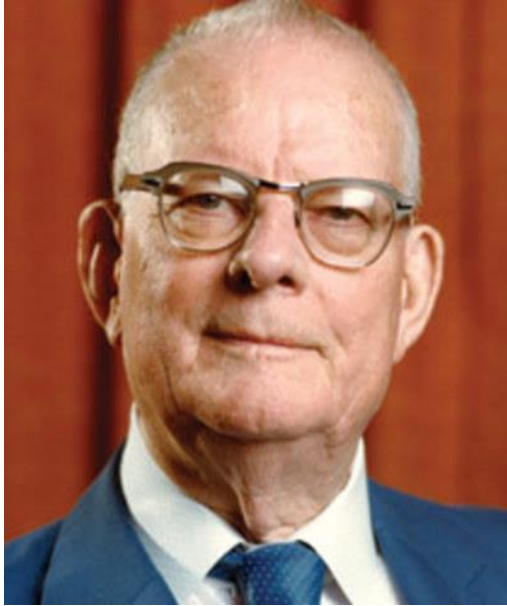
**W. Edwards Deming
(1900-1993)**

- Deming's had a *multidimensional* concept of quality, depending on the perspective that is taken. Workers might be proud of their work. Managers may consider quality the result of products produced that meet specifications.

- In general, quality is defined by *satisfaction of customers according to their needs and expectations*. Quality must be *predictable in an acceptably uniform and dependable way* to the standard suited to customers. It must be *dynamic* and change to adapt to changing standards.

Quality Management
Division
ASQ Excellence Through Quality™

Joseph M. Juran defining what is quality:

A broad definition of quality, according to Juran is "fitness for purpose."
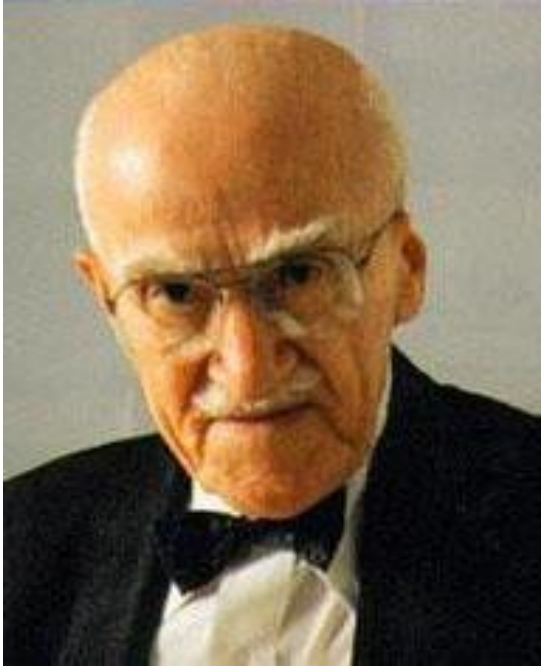
**Joseph M. Juran
(1904-2008)**

Quality means a product *meets customer needs leading to their satisfaction*. It must be "*fit for purpose*" according to the need or desire of external customers.

One way to *achieve quality* is to improve it *project-by-projec*t. The methods to deliver quality results are by *planning, control, and improvement*.

Improvements can be either *incrementally evolutionary* or by **radical breakthroughs**.

"Top management must be quality-minded."

Quality Management Division
ASQ Excellence Through Quality™

Philip B. Crosby defining what is quality:

Quality is conformance to requirements – doing it right the first time!
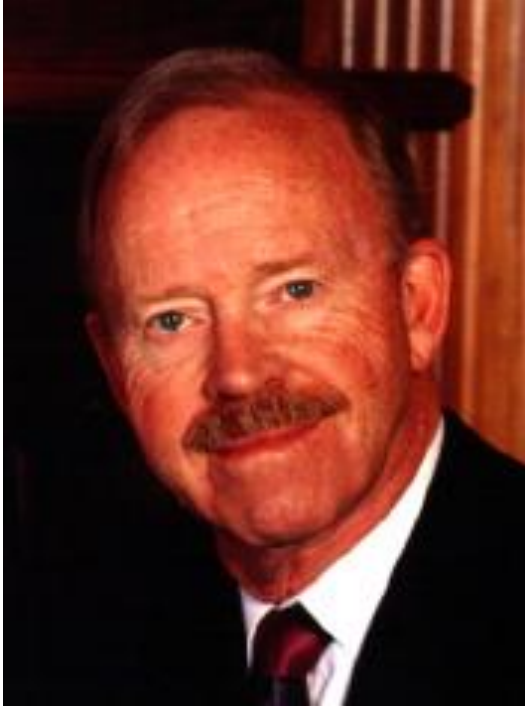
Philip B. Crosby
(1928-2001)

The basic principle of "doing it right the first time" is defined using four principles:

1. The definition of *quality is conformance to requirements* (requirements meaning from product and customer indicators).
2. The *system of quality is prevention*.
3. Quality's *performance standard is zero defects* (relative to requirements).
4. The *measurement of quality is the price of nonconformance*.

Quality is free!

Genichi Taguchi defining what is quality:

**Genichi Taguchi
(1924–2012)**

> **Cost is more important than quality, but quality is the best way to reduce cost.**
>
> **The cost of quality is the loss caused to society after a product is released to customers for use.**

- Losses from poor product quality are not limited to production processes but include losses in waste in its full product life cycle.
- Most losses occur after a product is produced as it creates a loss for society: accumulating all negative impacts that occurred.
- Quality should not be measured as conforming to specifications, but on the impact created as feature performance deviates from its functional target. This is called "robust" quality.

Quality Management Division
ASQ Excellence Through Quality™

Product quality requires robust design!

Noriaki Kano defining what is quality:

**Noriaki Kano 狩野紀昭
(1940-)**

Attractive quality anticipates the latent, unspoken needs of customers.

"Quality activity can only begin if *top management is conscious of the critical need for organization wide commitment to quality and its own responsibility for introducing such activity*."

"Improving all attributes of quality will not lead to satisfied customers as *not all attributes are equal in their eyes*. *Some quality attributes will increase the value to customers because they are attractive and do not detract even when their physical fulfillment is not strong*."

Quality Management Division
ASQ Excellence Through Quality™

Noriaki Kano, et. al. (1984), Attractive Quality and Must-be quality, *Quality, Journal of Japanese Society for Quality Control*, 14:2, pp. 39–48.

Noriaki Kano's Theory of Attractive Quality:

Customer Satisfaction ☺

Attractive Quality

One-Dimensional Quality

Degree of Fulfillment ☺

☹

Must be Quality

☹

Noriaki Kano, et. al. (1984), Attractive Quality and Must-be quality, *Quality, Journal of Japanese Society for Quality Control*, 14:2, pp. 39–48.

Quality Management Division
ASQ Excellence Through Quality™
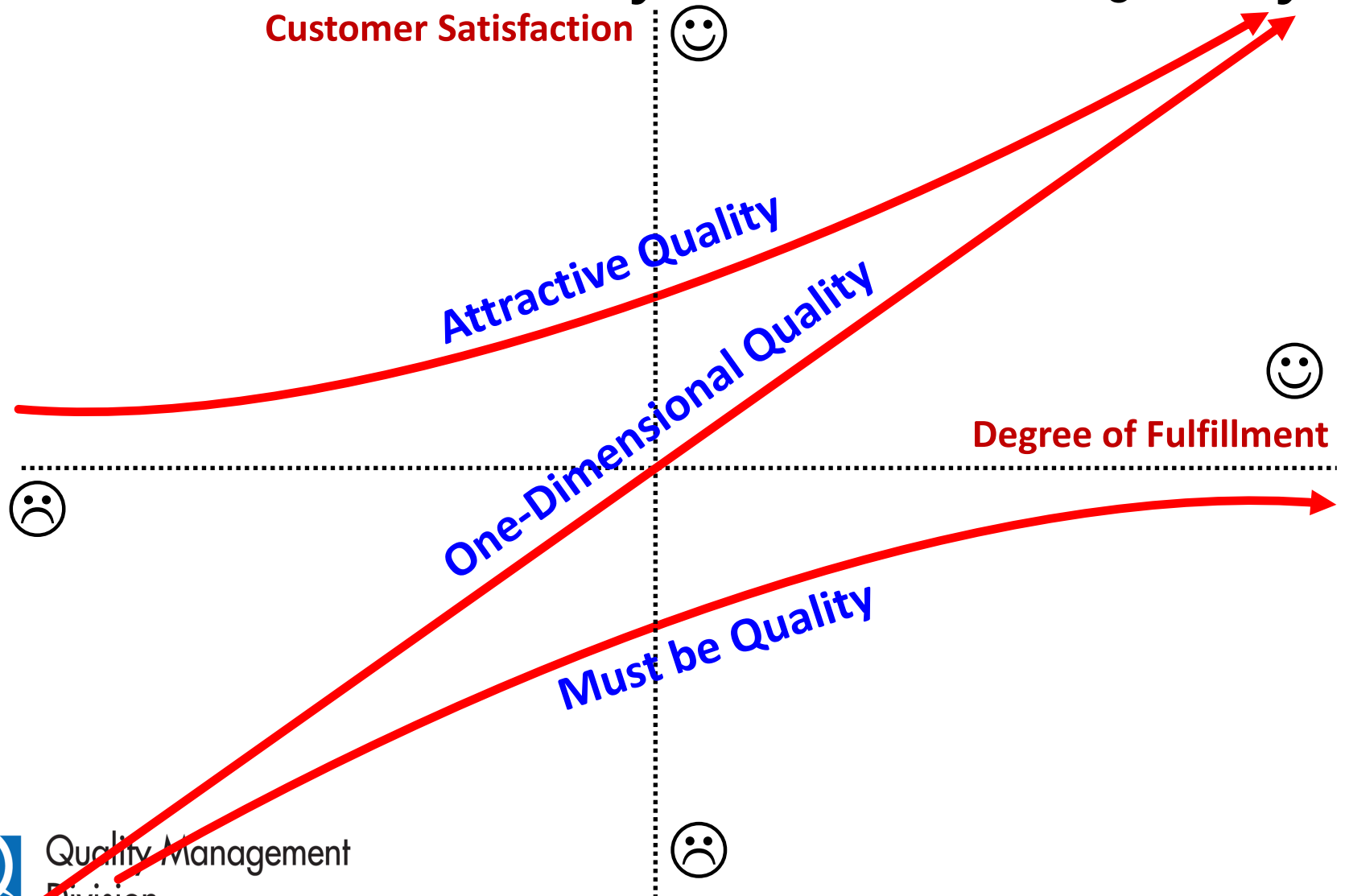
The Psychological Basis of the Kano Model:

Frederick Herzberg's Hygiene-Motivator Theory is the main influencer.

Noriaki Kano compared the idea of backward-looking quality to *hygiene factors* in Frederick Herzberg's theory of motivation – they are neutral or dissatisfiers, but they never contribute to the satisfaction of users. Kano identified Herzberg's *motivators* as factors that contribute to forward-looking quality in the customer experience and should be "designed into" products. [Note: Abraham Maslow and his theory of the Hierarchy of Human needs had no influence on the origins of the Kano Model.]

Kano called marketing features or engineering functions that the are hygiene factors of backward-looking quality "**must be**" quality factors. He called forward-looking features "**attractive quality**." It is attractive quality features of a product or service that create a "deep affection" among customers for a product or service and which build strong brand reputation and distinguish it over time.

Quality Management Division
ASQ Excellence Through Quality™

1. Frederick I. Herzberg, Bernard Mausner, and Barbara B. Snyderman (1959), *The Motivation to Work*, 2nd ed. (New York: John Wiley).
2. Frederick I. Hertzberg (1987), "One More Time, How do you Motivate Your Employees?" *Harvard Business Review*, 65:5, September-October, pp. [reprint from 1968 original article].

Scientific perspective to studying quality:

"Do not seek to follow in the footsteps of the old masters, seek instead what these masters sought."

~ Matsu Basho (1644-1694)

Quality Management Division
ASQ Excellence Through Quality™

Defining Quality to Apply to Everyone, Everywhere

Part 2:

Decomposing Macro-Quality Perspectives

Quality Management
Division
ASQ Excellence Through Quality™

Understanding the metaphysics of quality:

A comprehensive, "transcendental" definition of the concept of quality:

"Quality is the relentless pursuit of goodness coupled tightly with the persistent avoidance of badness."

How should we "operationalize macro-quality" for real-world commercial or production application?

*   Noriaki Kano (1976), "Degrees of Badness," *SQC Journal*, JUSE, 27:4, p. 70 [In Japanese].
** Gregory H. Watson (2016), "Understanding the Role of Quality in Daily Management," *Proceedings of the Croatian Society for Quality Annual Meeting in Poreč, Croatia*, 17 May 2016.

Quality Management Division
ASQ Excellence Through Quality™

Decomposing this meaning of Quality

Model from Medicine: the Hippocratic Oath of professional doctors.

Ethical decision: *primum non nocere*, first, do no harm!

Core principles of medical ethics:

"I will respect scientific gains of those who have walked before me."

"I will protect the environment which sustains us."

"I will abstain from all intentional wrong-doing and harm."

"Practice two things in your dealings … either help or do no harm."

Goodness careful of "unintended consequences" from actions.

Quality Management
Division
ASQ Excellence Through Quality™

From what viewpoint should we judge the goodness and badness of outcomes?

Decomposing transcendental quality:

Transcendental Definition

Macro-Quality

- **Product Quality Definition**
- **Service Quality Definition**
- **Process Quality Definition**

How will you operationalize these deliverable specific definitions for your use?

Micro-Quality

Quality Management Division
ASQ Excellence Through Quality™
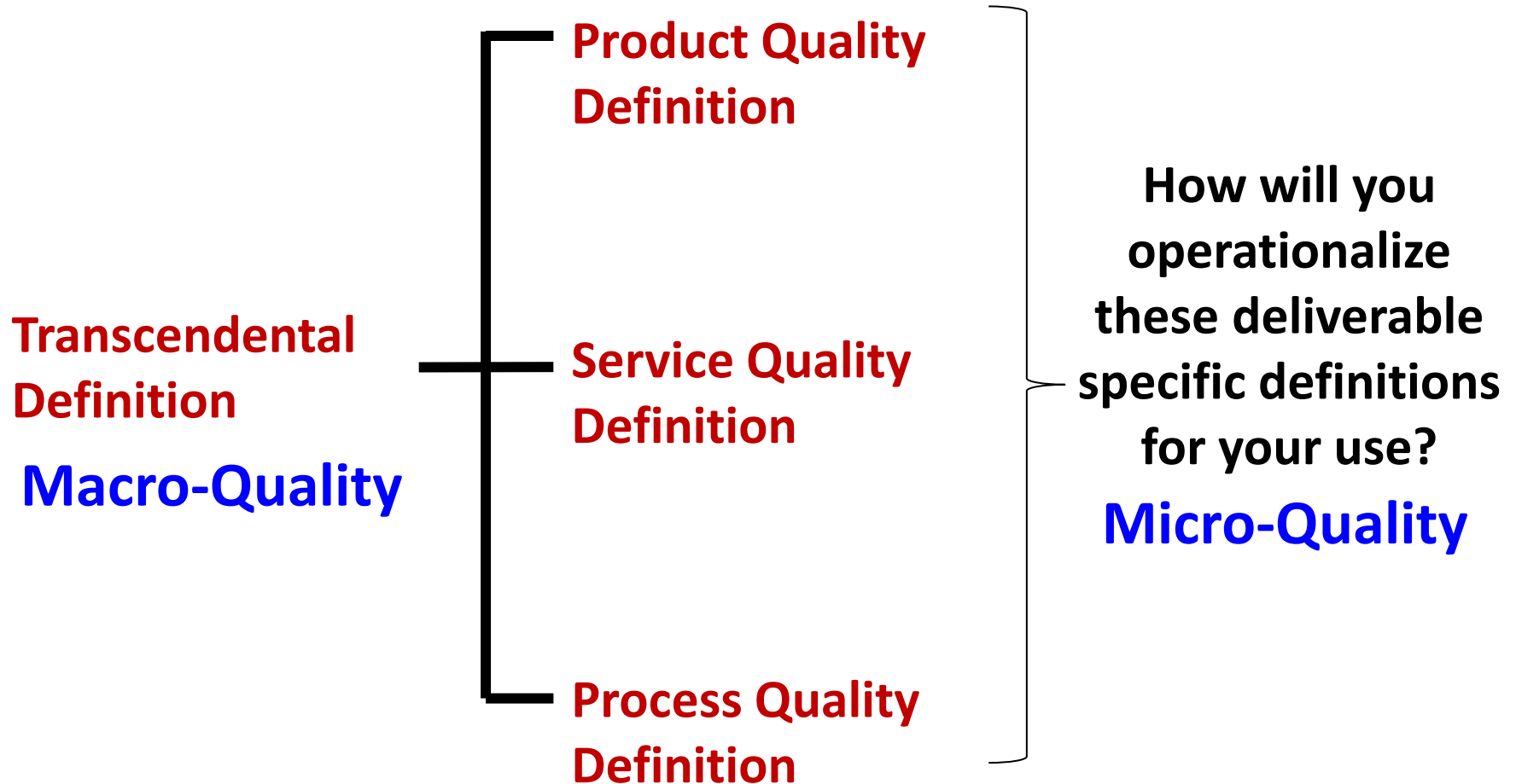
Operationalizing "product quality" by focusing on the "actual entity":

Product Quality Definition

Fitness for use by the customer in the intended application and the actual environment.

Actual Entity
- Product Requirements
- Reliable Results
- Customer-Judged
- Fault-free Operation
- Cost-effective Outcome

How will you change your organization to improve and obtain excellence?

Quality Management Division
ASQ Excellence Through Quality™

Operationalizing "service quality" by focusing on the "actual experience":

Service Quality Definition

Consistent delivery of the desired service level over an extended period of time and across all locations.

Actual Experience
- Service Requirements
- Reliable Results
- Customer-Judged
- Mistake-free Operation
- Cost-effective Outcome

How will you change your organization to improve and obtain excellence?

Quality Management
Division
ASQ   Excellence Through Quality™

Operationalizing "process quality" by focusing on the "actual activity":

Process Quality Definition

Maximizing the level of productivity relative to the customer demand with minimal waste, cost, inefficiency or loss.

Actual Activity
- Process Requirements
- Reliable Results
- Customer-Judged
- Waste & Loss-free Operation
- Cost-effective Outcome

How will you change your organization to improve and obtain excellence?

Quality Management Division
ASQ Excellence Through Quality™

Making quality "real" to its benefactors:

Decide how to define your quality!

- **Operationalizing the definition of quality must be managed carefully so people know what it is that they must pursue and avoid.**

- **Your definition must be informed by the content of both its transcendental definition and its deliverable specific requirement.**

- **It must also consider industry practices and external constraints and encourage employee commitment motivate their pursuit of quality.**
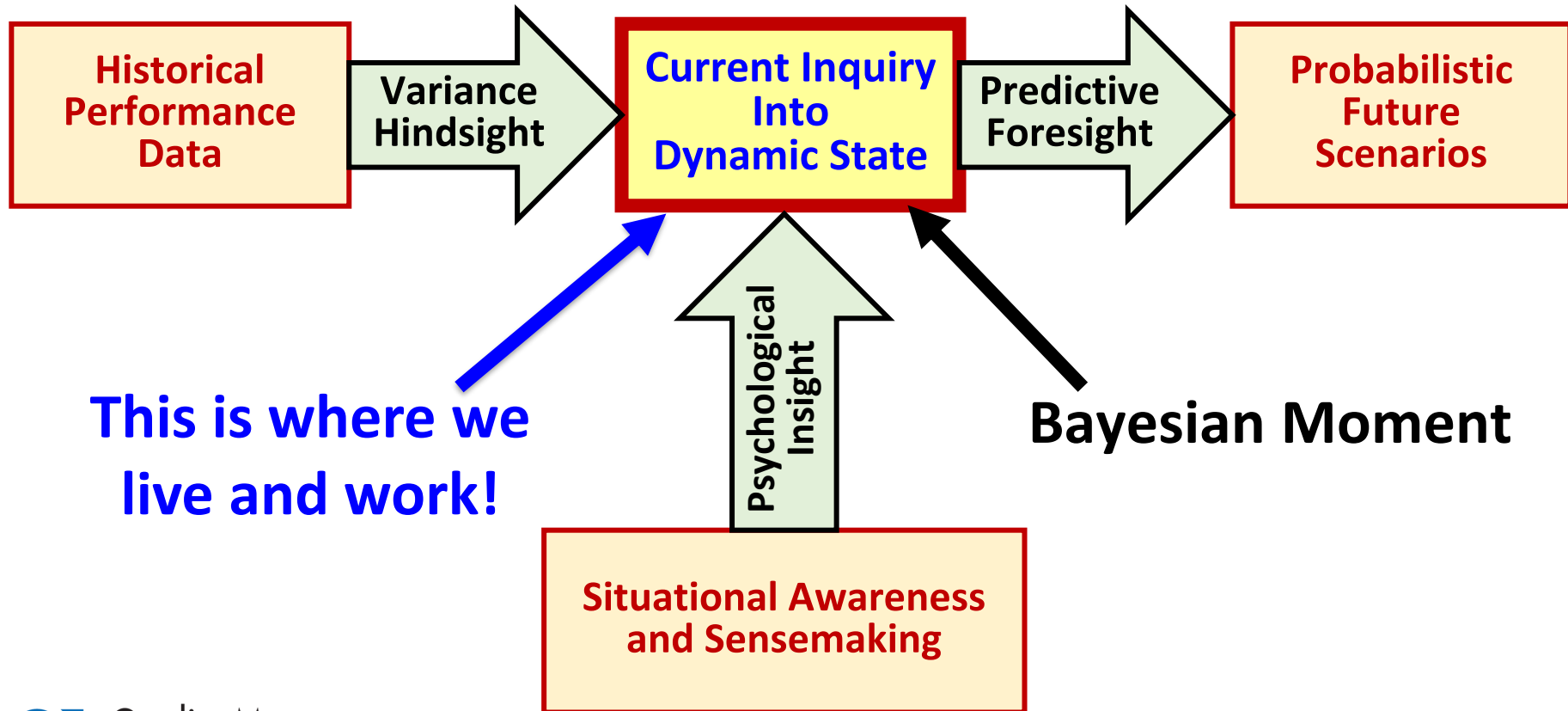
Quality Management
Division
ASQ Excellence Through Quality™

Defining Quality to Apply to Everyone, Everywhere

Part 3:

Identifying the Macro-Quality Perspective

Quality Management
Division
ASQ Excellence Through Quality™

Quality inquiries occur in the Bayesian Moment:

Combining the logical concepts of Kant, Ishikawa, Shewhart, and Kano:

| Historical Performance Data | → Variance Hindsight → | Current Inquiry Into Dynamic State | → Predictive Foresight → | Probabilistic Future Scenarios |

This is where we live and work!

Psychological Insight

Situational Awareness and Sensemaking

Bayesian Moment

Quality Management Division
ASQ Excellence Through Quality™

Transcendental quality and economic theory:

Problem: Macroeconomic theory treats bad quality as a fiscal benefit.

- *Sociological and macroeconomic thinking act against practicing quality as an accepted way of life.* The prevailing economic view operates on the premise that human beings are inherently selfish. However, quality pursues goodness for all society and implies decency in humanity.

- **Gross Domestic Product (GDP) defines economic productivity; it ignores the cost of depleting Earth's resources, essentially treating resources as infinitely available and free.**

- *GDP counts many wastes as contributing positive economic value to society*: cleaning up after an oil spill that was avoidable raises the GDP; increasing commuting by automobile at higher cost raises GDP; and providing medical treatment for an accident or pollution victims raises GDP as does correction of surgical errors and hospital-induced infections.

- *Globalization has created volatility in the fortunes of individual firms, both management-led improvements and worsening of profitability are masked by external setbacks or windfalls, confounding an understanding of true financial performance.*

Quality cannot be measured using traditional financial and economic indicators!

Quality Management Division
ASQ Excellence Through Quality™

Transcendental quality and the UN SDG's:

The UN SDG's define transcendental quality for all of humanity!

Quality Management Division
Excellence Through Quality™
ASQ

All goodness, no badness for all Planet Earth!

Social and technical disruptions abound!
How should these socio-technical trends be approached?

Comprehensive Inclusion?

Technological Agility?

Social Innovation

Technical innovation

Uncertainty and Risk

Social Disruption

Technology Disruption

Social Responsibility?

Technological Complexity?

Quality Man... Division
Excellence Through Quality™
ASQ
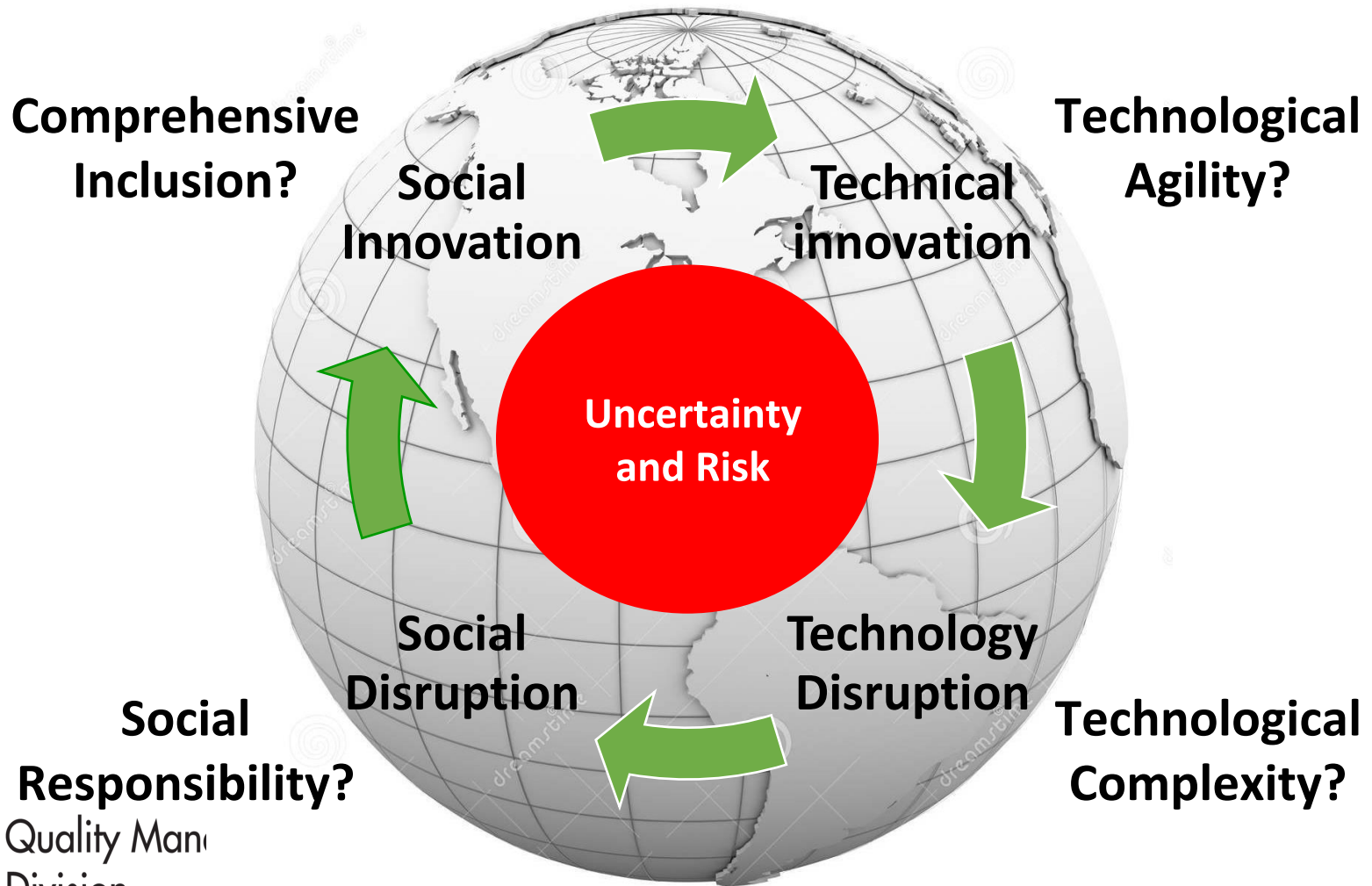
Quality makes sense out of non-sense!

Challenge for the global quality community: Reinvent ourselves!

- Extend the scope of quality to less developed nations.

- Move beyond manufacturing, service, or business uses.

- Create more profound understanding of the quality sciences.

- Embrace new technologies and integrate in quality methods.

- Emphasize data and evidence-based decision-making.

- Involve all levels and disciplines in the pursuit of quality.

- Serve all quality customers : commercial, internal, and social.

- Harmonize strategic improvements with daily management.

- Create a culture of mutual trust, happiness, and prosperity.

- Most importantly: do no harm to society or the planet.

Quality Management
Division
ASQ Excellence Through Quality™

Advancing quality amidst these challenges:

Quality: A persistent pursuit of goodness coupled tightly with a relentless avoidance of badness!

- ➢ **Nondiscriminatory**

- ➢ **Egalitarian**

- ➢ **Inclusive**

- ➢ **Comprehensive**

DO

No

HARM

Good for People – Good for Planet – Doing No Harm to Either!

Quality Management
Division
ASQ Excellence Through Quality™

Pursuing "goodness" and avoiding "badness" …
Quality development innovates to avoid "loss to society!"

Kaoru Ishikawa 's hope and prayer of quality for humanity:

"…that quality and related activities be spread everywhere in the world, that quality all over the world be improved, that cost be lowered, that productivity be increased, that raw materials and energy be saved, that peoples all over the world be happy, and that the world prosper and be peaceful."

…inclusive action result in good quality of life for society!

Quality for humanity is the global social imperative!

Quality Management Division
ASQ Excellence Through Quality™

Defining Quality to Apply to Everyone, Everywhere:

Take-away Lessons Learned

Quality Management Division
Excellence Through Quality™
ASQ

Critical take-away observations:

Summary statement

The validity of quality as being applicable to issues, concerns, or problems of society **depends on how people think about quality. If people realize that** *quality is a judgment that is relevant in all of the areas of our lives,* **then it becomes important. But, if we** *as a global quality community continue to downplay what is the value of quality by linking it to daily management issues as the solution to all issues, then we reap the result of irrelevance that have have sown by our attitude.*

This webinar addressed three learning objectives:
- **Review the historical meanings assigned to quality.**
- **Decompose macro-quality into operational ideas.**
- **Realize how macro-quality applies to the future.**

Quality Management
Division
ASQ Excellence Through Quality™

Thank you

Gregory H. Watson, PhD.

greg@excellence.fi

Future QMD Webinars:

Managing for Quality Webinar Series by Dr. Gregory H. Watson:

No. 12: "Managing for Quality Amidst Digital Turbulence" November 17, 2020; to be delivered at 1800 ET (6:00 PM ET).

Other Webinars Offered by the ASQ Quality Management Division:

Quality Management Division Part 4 – "How to Create Content in Support of Quality Management Professionals" by Dawn Ringrose; to be delivered on October 29, 2020 at 1400 ET (2:00 PM ET).

"Strategic Planning and Hoshin Kanri" by Jd Marhevko and Eric Zinc; to be delivered on November 5, 2020 at 1800 ET(6:00 ET).

Quality Management
Division
ASQ   Excellence Through Quality™

Join ASQ for more **exclusive content** and access to **thought leadership**

ACCESS TO THE BEST QUALITY TOOLS & RESOURCES

Whether you're looking to enhance your knowledge, find solutions or stay up to date on the latest in quality and continuous improvement, we've reviewed and compiled it all for you from experts and thought leaders around the globe.

| ASQ QUALITY RESOURCES | PRACTICAL TOOLS | BOOKS & STANDARDS | BECOME A MEMBER |

ASQ Quality Resources

Accessible anytime, anywhere, ASQ's exclusive Quality Resources puts today's most popular quality and continuous improvement topics, tools, publications, case studies and more at your fingertips.

Learn from classic and current quality principles and theories with your unlimited access to all the knowledge and tools ASQ has to offer.

Quality Management Division
ASQ Excellence Through Quality™

ASQ Members

Continue the conversation at:

https://my.asq.org/communities/home/28