

Strategic Reflections on Kano's Attractive Quality



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How will “Managing for Quality” change?

- Session 1 Making Quality-Based Executive Decisions
- Session 2 Leading Transformation – Managing Improvement
- Session 3 Designing Quality as an Inclusive Business System
- Session 4 Conducting Executive Inquiry and Formulating Strategy
- Session 5 Understanding Japanese-Style Strategy Management
- Session 6 Organizational Learning – Triple-Loop Experience
- Session 7 Engineering Management – Designing Future Firms
- Session 8 Understanding the Financial Component of Quality
- Session 9 Strategic Reflections on Kano’s Attractive Quality**
- Session 10 Discovering Profound Insights of Operational Excellence
- Session 11 Defining Quality to Apply to Everyone, Everywhere
- Session 12 Managing for Quality Amidst Digital Turbulence

Abstract of Session #9:

Noriaki Kano's Theory of Attractive Quality is one of the most important concepts that introduced to the quality community in the past 100 years. Kano positioned his theory with respect to understanding the nature of quality characteristics for an item – whether it be a product or service. However, application to strategic domains is appropriate too. This webinar introduces different ways this theory influences strategic considerations of management teams and proposes how to interpret the dimensions that the model described where “Must-be” quality relates to management of “Critical-to-Quality” characteristics; “One-Dimensional” quality relates to design of “Critical-to-Satisfaction” characteristics; and “Attractive Quality” relates to innovating “Critical-to-Motivation” characteristics.

Learning Objectives for Session #6:

Learning Objective 1: Understand the theory behind the Kano Model

Discover the historical, cultural, philosophical, and psychological roots of Noriaki Kano's Theory of Attractive Quality

Learning Objective 2: Define the Meaning of the Quality Characteristics

Learn the way that the Kano Model operates to describe how features of products are related to product and service design in a sensitive way that can elicit customer emotions relative their engagement in the commercial purchase or re-purchase decision.

Learning Objective 3: Describe Strategic Implications of the Kano Model

Investigate how the meanings of the quality characteristics in the Kano Model can be interpreted with respect to a process of developing strategy that differentiates an organization from its competitors.

Noriaki Kano and his Quality Theory:

Attractive quality anticipates the latent, unspoken needs of customers.



Noriaki Kano 狩野紀昭 (1940-)
Japanese Quality Professor

“The Theory of Attractive Quality” (1984)*

“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.”

Presentation Outline:

Understanding the practical and strategic aspects of attractive quality.

1. Origins of the Theory of Attractive Quality
2. Understanding the Basic Principles
3. Expanding the Theory to Strategy

Strategic Reflections on Kano's Attractive Quality

Part 1:

Origins of the Theory

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:

- Differences of real substances – as in quality characteristics.
- Mode of a subject in motion, of itself – ways which a subject works and may be classified according to its value.
- **Good** (excellence) – a characteristic mode that is desirable, and
- **Bad** (Inferiority) – a characteristic mode that is undesirable.

Kano used this Aristotelian definition to establish a juxtaposition of “goodness” and “badness” in his mental model for thinking of quality characteristics in products.

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.**



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.”**



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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).

Japanese Influences on Kano's quality concept:

Contributing ideas of quality from Kaoru Ishikawa and Yoshio Kondo:

Ishikawa described 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.



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

Japanese cultural influence on Kano's Model:

The Japanese way of thinking influenced how Kano defined quality:

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). Kano called this concept “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 described this as “attractive” quality.



The Psychological Basis of the Kano Model:

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

Kano compared backward-looking quality to **hygiene factors** of 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.



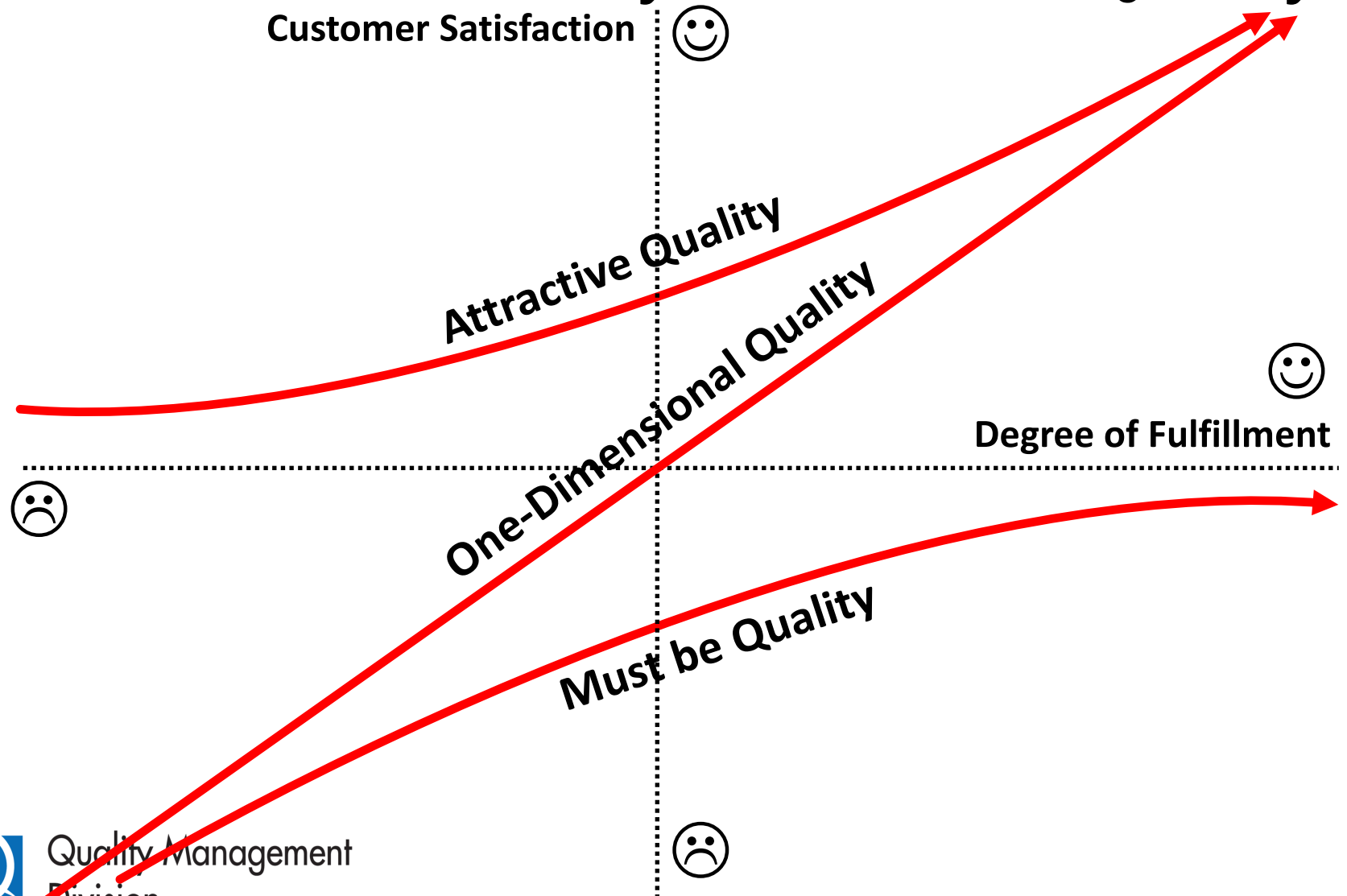
1. Frederick I. Herzberg, Bernard Mausner, and Barbara B. Snyderman (1959), *The Motivation to Work*, 2nd ed. (New York: John Wiley).
2. Frederick I. Hertzberg (1987), “One More Time, How do you Motivate Your Employees?” *Harvard Business Review*, 65:5, September-October, pp. [reprint from 1968 original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

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Part 2:

Understanding the Basic Principles

Model – Kano's Theory of Attractive Quality:



Interpreting the Kano Model conceptually:

The Kano Model describes how the Theory of Attractive Quality works:

The model has two axes which define the three quality functions.

The X-Y Coordinates: The vertical axis represents the degree that a customer is satisfied ranging from dissatisfied at the bottom to neutral at the center to highly satisfied at the top. The horizontal axis represents the degree to which the design fulfills a customer requirement from poorly to the left, neutral in the center, and highly to the right.

The Three Functions: Three quality functions are defined in this model: “Must-be” quality is the hygiene or minimal requirement; “One-dimensional” quality is a requirement which is used to make a value-based decision among alternatives; while the “Attractive” quality is the motivator that encourages customers to purchase.

Understanding the Basic Principles

Curve 1: Must-be Quality

The “Must-be” Dimension of Quality:

This quality characteristic defines the essential elements of quality.

Must-Be Quality: (expected, implicit or basic requirements of a product). Customers expect this requirement to be consistently met. Dissatisfaction is increased if it is not met, but satisfaction is not increased when it is met. Requirements are “*dissatisfiers*” (not delivering customer satisfaction) or “*satisficers*” (delivering a compromises in performance that does not fully meet promises that lead to satisfaction) – the desired outcome is minimum cost without extra capability as that does not influence people to purchase. Poor performance creates negative customer response.

Unspoken Requirements – Often customer requirements remain unspoken as they are unable or lack knowledge to describe such needs. On this case the requirement is unspoken because it is so well known that customers expect that it will be included in the product or service (e.g., the ability of a car to start, stop or steer should not need to be defined in buying an automobile).

Competing on the Eight Quality Dimensions:

Organizations compete on quality characteristics in eight dimensions.

1. **Performance**: The basic operating characteristics of a product
2. **Features**: Secondary characteristics that support performance.
3. **Reliability**: The likelihood of a product failing or malfunctioning during a specified period in its operational life.
4. **Conformance**: The ability of the product characteristics to meet established standards.
5. **Durability**: The ability to withstand wear during operational life.
6. **Serviceability**: Ease of operation, courtesy of service, response to requests, competence in making repairs or maintaining products.
7. **Aesthetics**: An artistic sense about how a product is sensed: look, feel, sound, taste, smell, etc.
8. **Perceived Quality**: Customer opinion about the total experience.

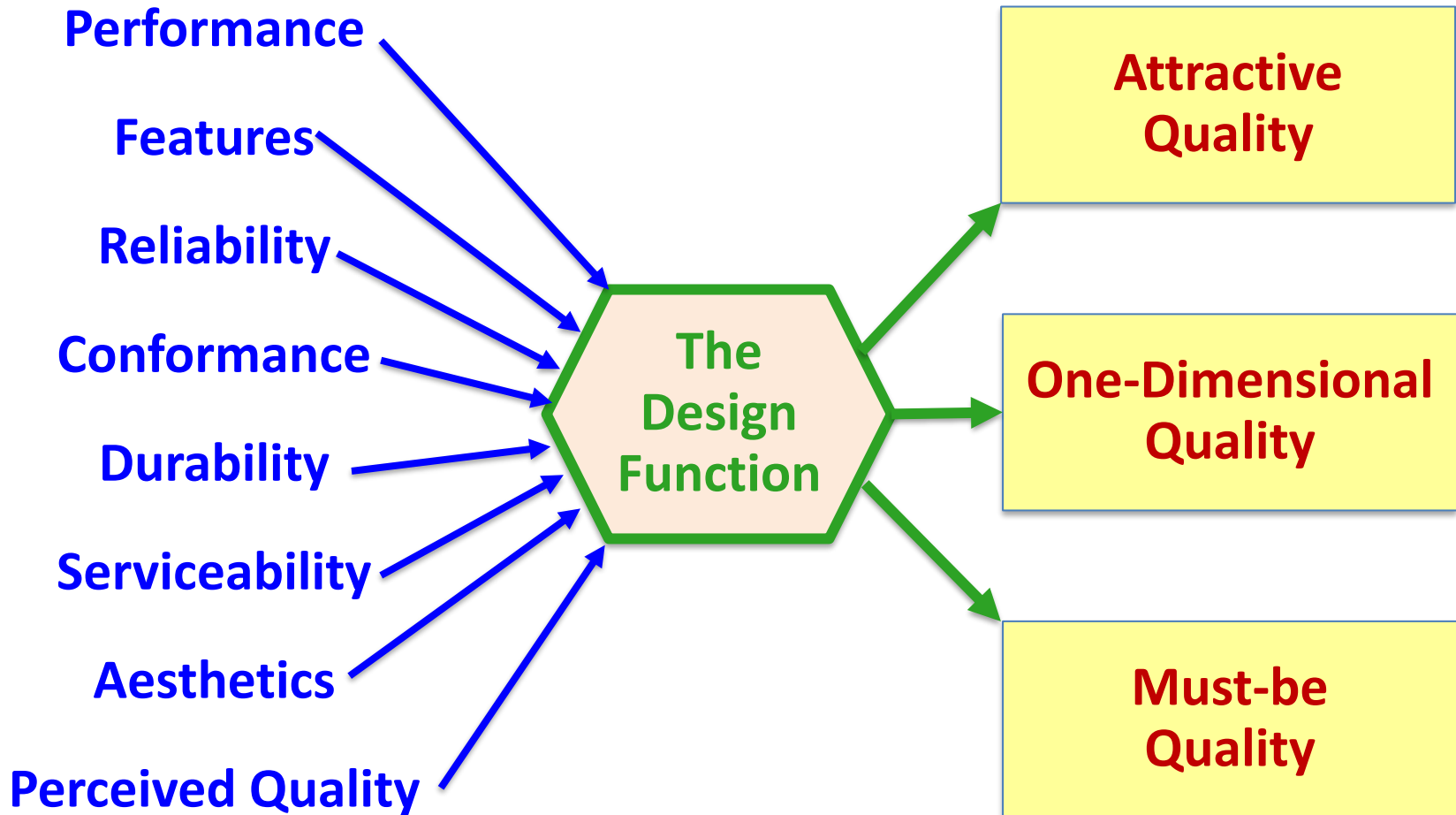


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1. David A. Garvin (1984), "What Does "Product Quality" Really Mean?" *Sloan Management Review*, 26:1, Fall 1984, pp. 25-43.
2. David A. Garvin (1987), "Competing on the Eight Dimensions of Quality," *Harvard Business Review*, 65:6, November-December 1987, pp. 101-109.
3. David A. Garvin (1988), *Managing Quality: the Strategic and Competitive Edge* (New York; McGraw-Hill).

How do these “quality characteristics” fit?

Design determines how quality characteristics are “fit” into a product.



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“Improving all attributes of quality will not lead to satisfied customers as not all attributes are equal in their eyes.”
~ Noriaki Kano

Understanding the Basic Principles

Curve 2: One-Dimensional Quality

The “One-Dimensional” Quality Characteristic:

This quality characteristic identifies “head-to-head” competitiveness.

One-Dimensional Quality: (normal, competitive, manifest, or explicit requirements). These quality characteristics are “checklist items” that may deliver either satisfaction or dissatisfaction, as a function of degree of fulfillment of requirements as compared to the alternative competitive offerings. Called ‘one-dimensional’ as they focus on performance of a specific quality attribute.

Spoken Requirements – Sometimes customers express what they want in a product or service. At these times they define or specify requirements that must be delivered, and this will typically generate a performance specification or statement of work that is the content in a request for proposal. In this proposal the degree to which customers are aware of their job or its requirements will determine how well-specified a request can be made. However, not all needs are fully understood by customers.

Understanding the Basic Principles

Curve 3: Attractive Quality

The “Attractive Quality” Characteristic:

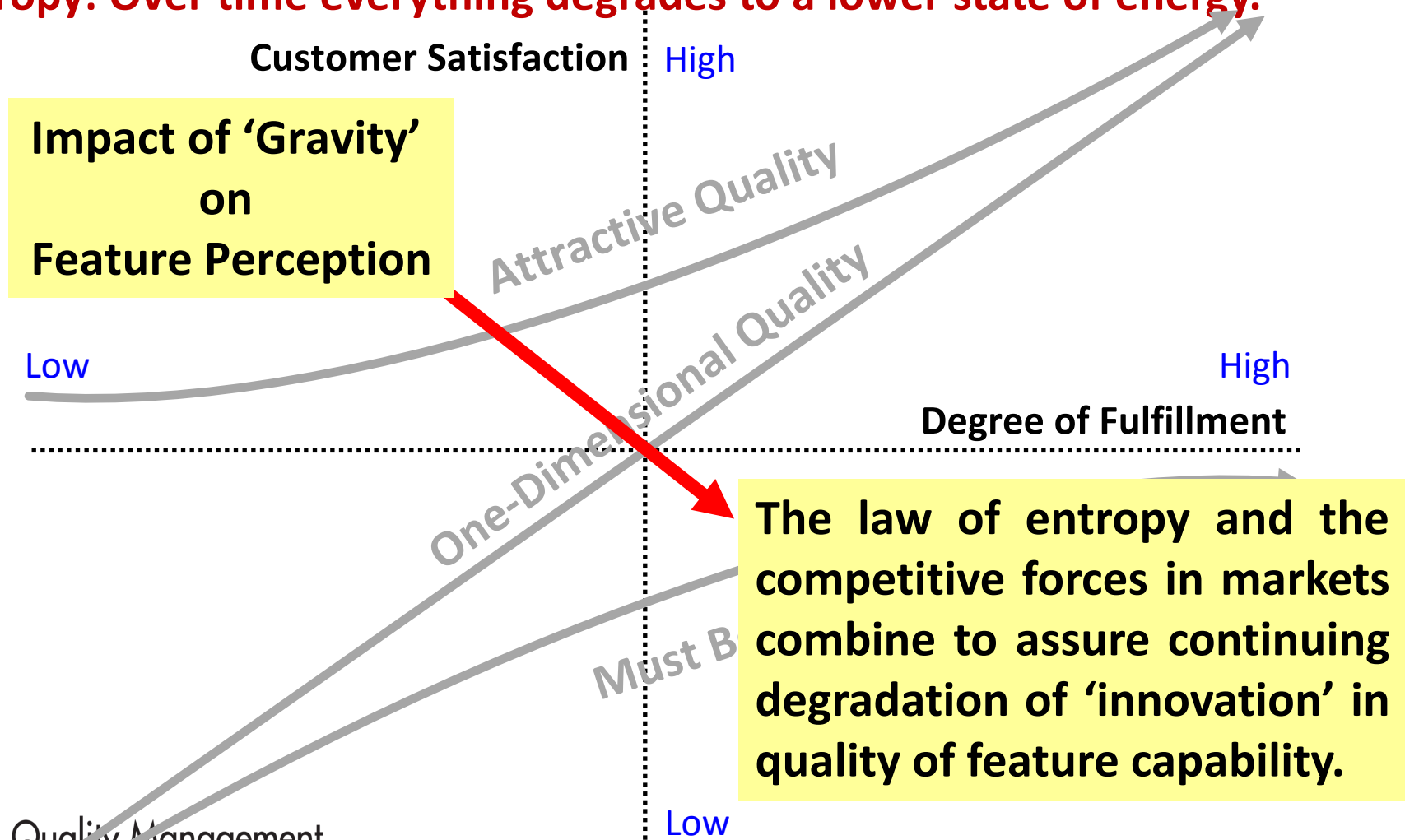
This quality characteristic indicates a market-leading market strategy.

Attractive Quality: (undiscovered quality characteristics anticipate consumer latent needs). The customer is not aware of them – so if the requirement is met, then the customer becomes excited by the designed surprise. But, if this latent requirement is not met, the customer will not be dissatisfied because they were not aware of a need in the first place. This quality characteristics can build competitive value into a product or service as it creates ‘exciters’ in the customer’s purchasing process.

Unspoken Requirements: This case of unspoken requirements will occur because the customer does not know of their need or are unable to understand how a new technology can be integrated in a way that changes their way of working. Thus customers cannot anticipate the nature of the new requirement or require it. This is a case where the design function must develop insight that creates an imaginative understanding of the customer’s needs.

Competitiveness suffers from a gravity effect:

Entropy: Over time everything degrades to a lower state of energy.



The “art” of quality lies in choosing a design”

An intimate understanding of customer needs breeds creative insight.

STATING THE CUSTOMER REQUIREMENT:

“I (role) want (function) so that (business or personal value).”

- If we do not define the role then we do not know who to check with to determine if the requirement has been satisfied. What is the customer’s *Point of View* (POV)?
- If we do not define the *business or personal value*, then we just have identified a desire that is not grounded in a deliverable to evaluate in the customer’s experience.
- If we do not operationalize the functional capability using the words of the customer (*Voice of the Customer* (VOC)) then we do not have an aligned measurement capability to evaluate the output that has been delivered.

Customer Experience (CEx) must be measured by comparing the expectation or desired for an outcome with the customer’s own perception of the quality characteristic of that deliverable.

Understanding Attractive Quality Dimensions:

Some dimensions of quality will create greater motivation in buyers.

- **Utility**: usefulness or suitability for the user's application.
- **Capability**: range of performance available for functionality.
- **Aesthetics**: style and form as opposed to functionality.
- **Innovation**: practical or technical originality or novelty.
- **Accessibility**: ease of use and friendliness of human interfaces.
- **Portability**: ability to use in a wide variety of applications.
- **Esteem**: worth implied by the recognition of a product brand.
- **Reliability**: durability of a product in its intended environment.

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Part 3:

Extending the Theory to Strategy

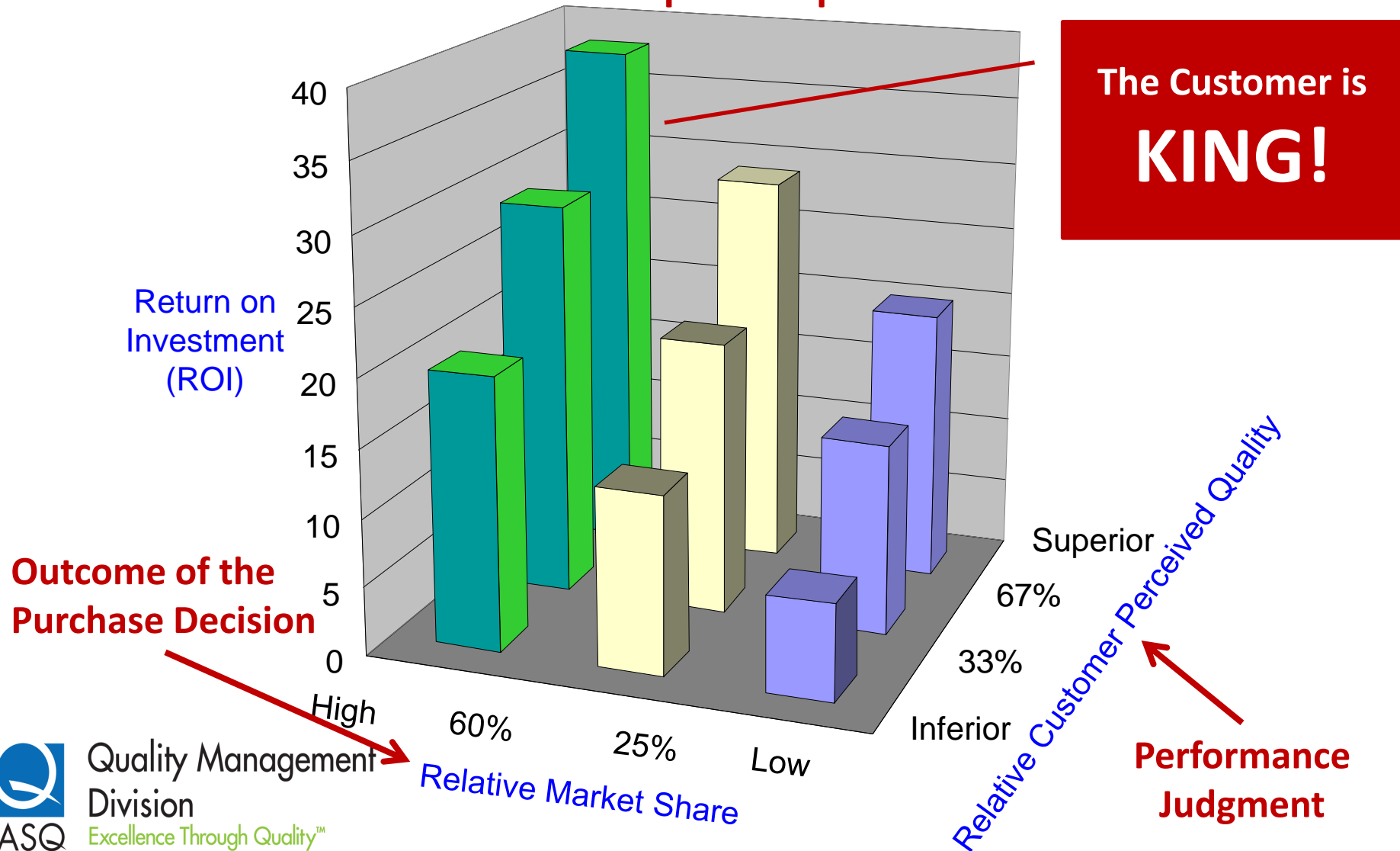
Scientific perspective to studying quality:

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

~ Matsu Basho (1644-1694)

The Profit Impact of Market Strategy (PIMS):

Customer Satisfaction delivers competitive performance for business.



Understanding Strategic Positioning: Determining How to Compete

What challenges face the product designer?

Specifying the quality capability of a product/service has many facets.

- Understanding what it takes for a product/service to be suitable for a particular customer's usage.
- Having capability to provide the full range of functionality necessary in a feature for the product/service to perform as required.
- Going beyond functionality to incorporate aesthetics (style and form) in a way that delights customers.
- Being able to think creatively and generate innovation to make products /services unique (often by leveraging technology in new ways).
- Improving accessibility and ease of use of the product/service, making it more user-friendly and enhancing the way people interface with it.
- Making it possible for a product/service to be used in a wider variety of applications.
- Ensuring that the product/service is durable and will perform reliably in all of its intended environments.
- Bringing esteem to the customers who use the product/service because it is a recognized and respected brand.

What is the nature of your industry rivalry?

Under what conditions are you able to compete in your industry?

Organizations fulfill their purpose by delivering value to their customers. The value proposition is a statement of the means by which value will be delivered to customers. Effective organizations deliver value using a “core competence” in a capacity to perform that customers appreciate. Three value disciplines define such a core organizational competence:*

- **Product Leadership:** Developing uniquely innovative features by mastering technology transfer from research to applications.
- **Customer Intimacy:** Developing custom solutions to distinguish performance capability in a customer’s critical capability field.
- **Operations Excellence:** Consistently delivering low-cost, highly efficient goods and services to customers without perceivable flaws in any important performance characteristic.

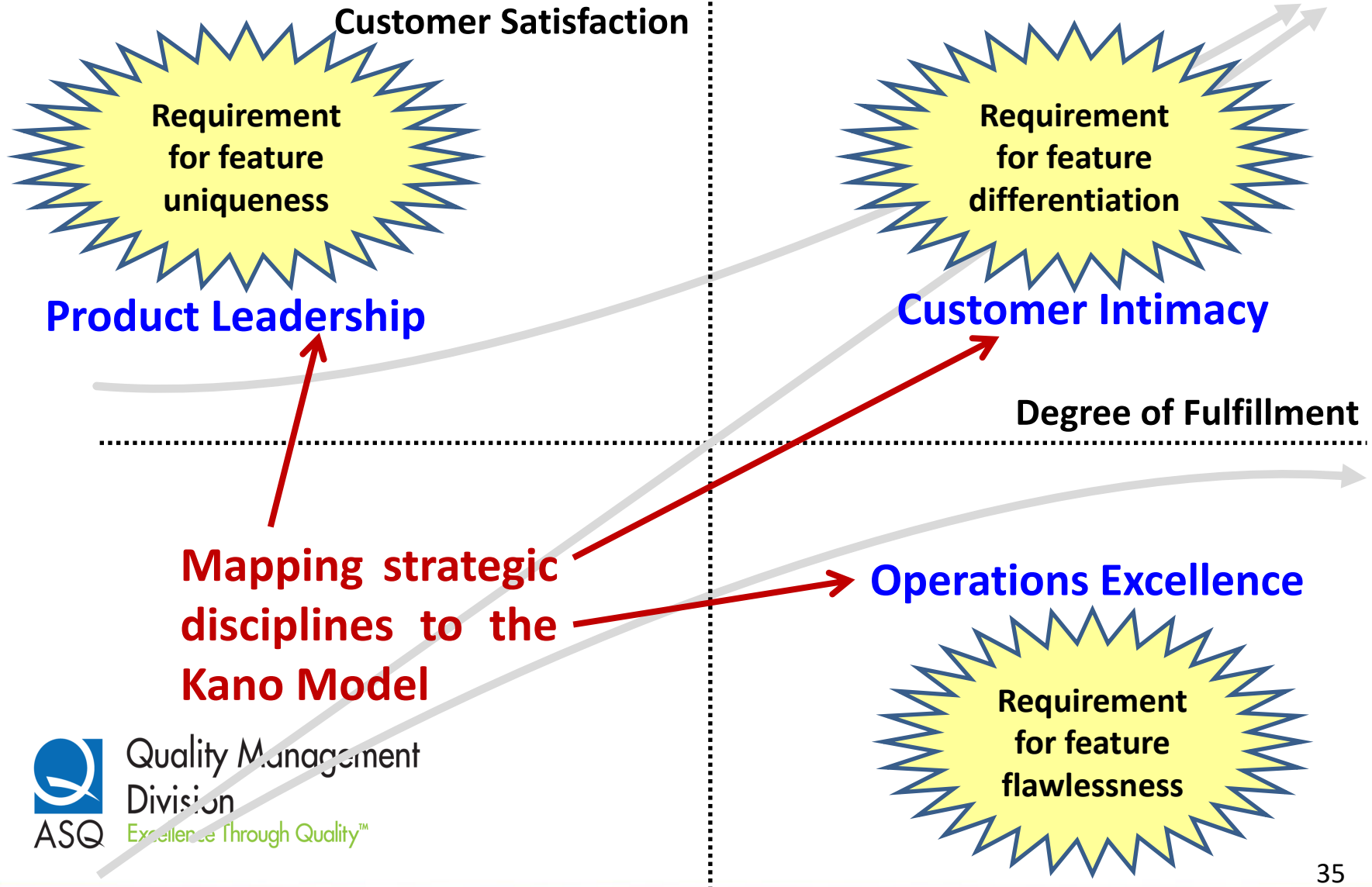
How do these value disciplines relate to quality performance?

Defining the Competitive Dimensions:

- **Product Leadership** – A discipline of delivering technological innovation to the customer through introductions of technologies that facilitate performance of the customer's job. This discipline constantly seeks new technologies that are available for exploitation by incorporation in products as engineering functions that create new marketable features that greatly improve the way customers can perceive the quality of the product or service deliverables.
- **Customer Intimacy** – A discipline of adjusting products and services in ways to better fulfill customer requirements and supporting customers in the way that they need to get their job done. This discipline focuses on building agility in markets to flexibly adjust the positioning of products and services in ways that increase the satisfaction of customers through their own performance gains.
- **Operations Excellence** – A discipline of applying quality methods to drive cost out of products, services, and processes by eliminating all forms of waste. This discipline focuses on total life cycle cost, not only cost applying to acquisition. An organization that is operationally excellent is a strong price competitor, but it achieves this capability through flawless execution of its work.

Mapping these Strategies to the Kano Model:

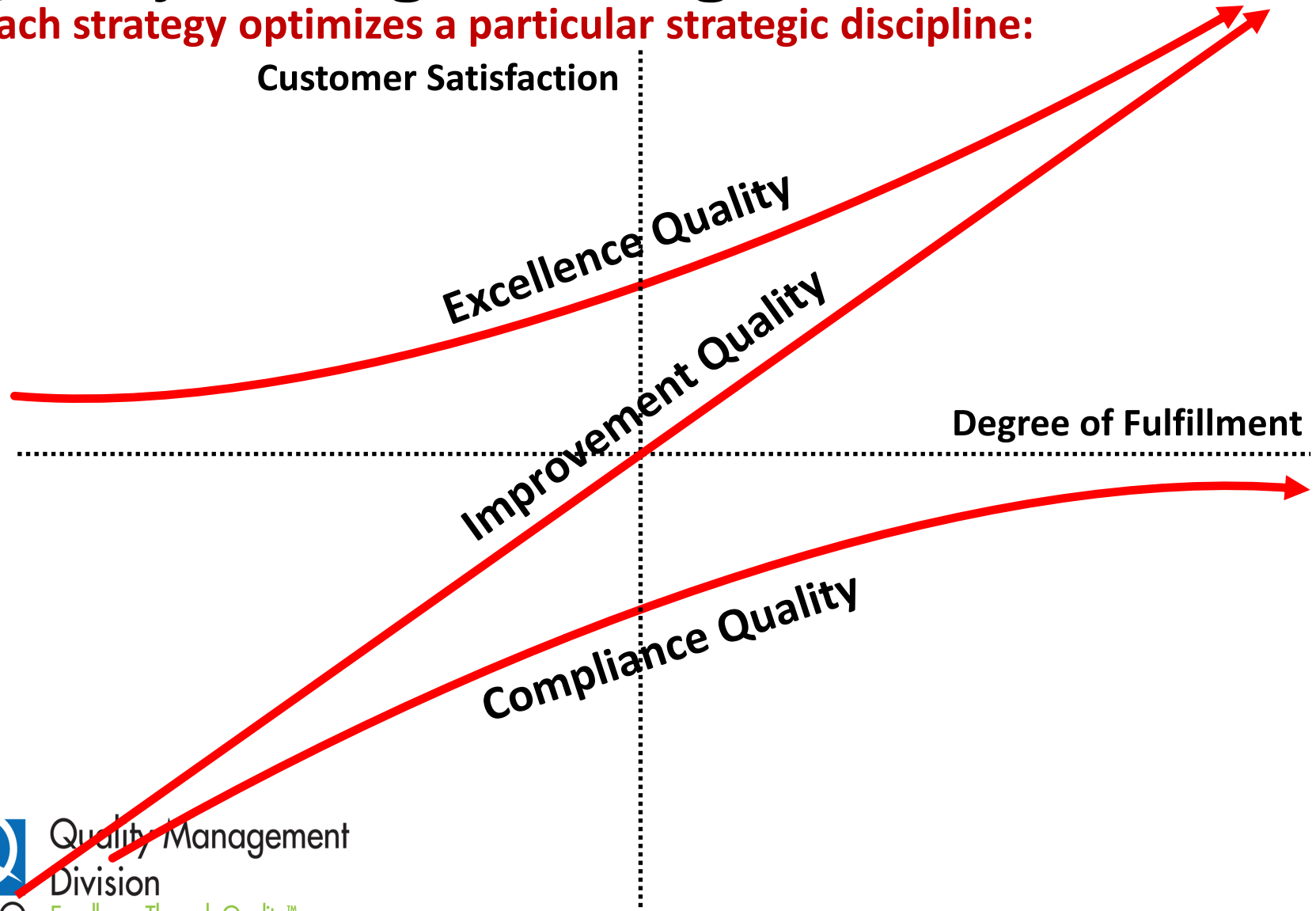
How does the competitive strategy of your company align?



Quality Strategies Emerge from Kano's Model:

Each strategy optimizes a particular strategic discipline:

Customer Satisfaction



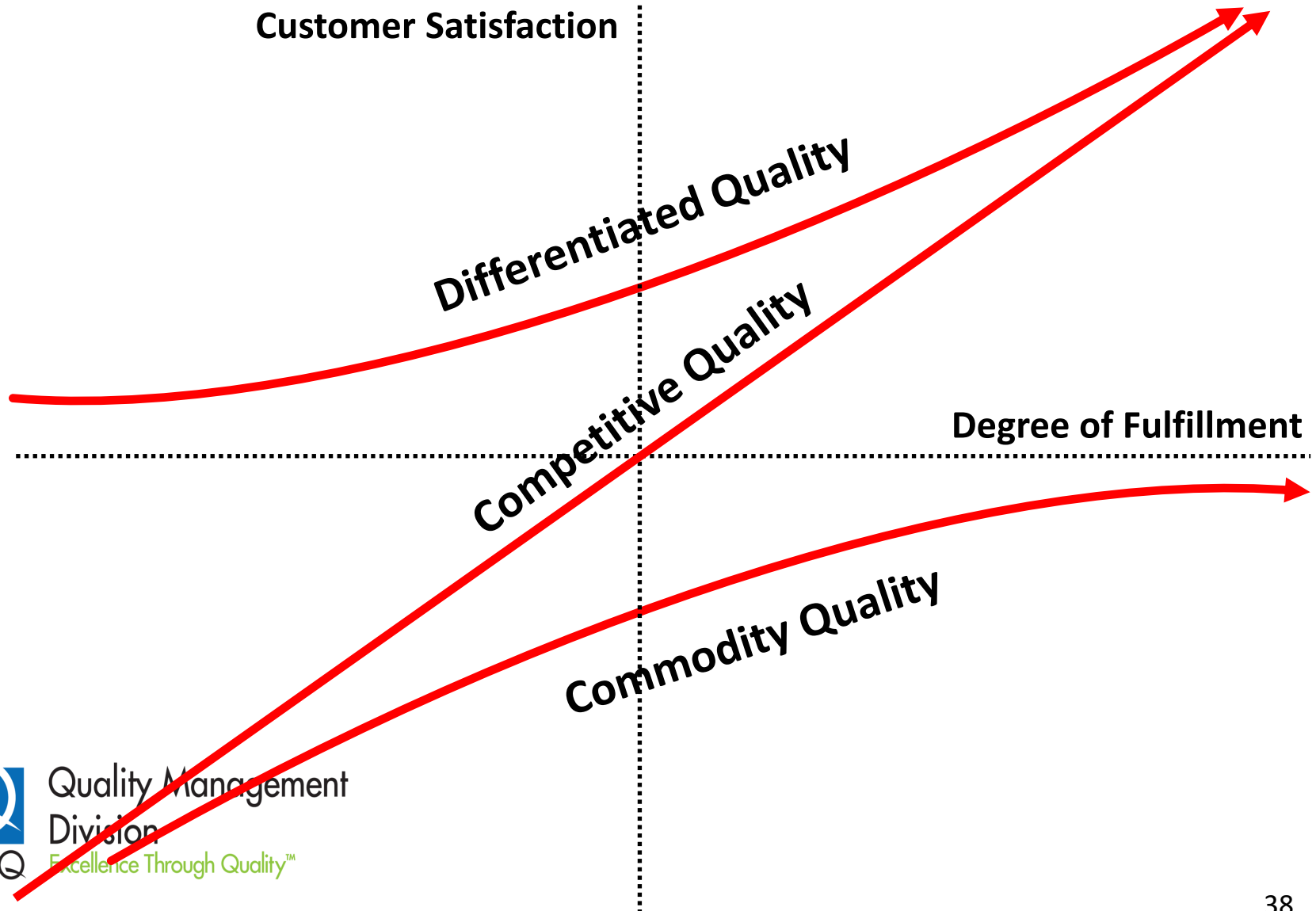
The Dimensions of Business-Focused Quality:

Performance in each of these strategies can be optimized by choice.

- **Compliance Quality:** “Must-be” requirements can be thought of as compliance quality, delivering a minimal level of requirement that is essential to customers. People do not buy based on compliance quality performance, unless the product is a commodity. It is only a minimal consideration. If feature design focuses on this level of design then choice is price-driven, and quality must be flawless.
- **Improvement Quality:** “One-dimensional” quality can be thought of as competitive quality; companies compete to provide features or functions that are performance-differentiated at a value-based price point. Thus, head-to-head comparisons differentiate value.
- **Excellence Quality:** “Attractive” quality can be thought of as the results of innovation – creative analysis the job a customer wants to accomplish and consideration of how to do it better leads to an introduction of new features or reformulation of product features in a way that appeals to customers through its uniqueness. This is a dimension where technologies create competitive advantage.

Competitive quality is not enduring quality!

Refreshing quality is necessary to maintain market momentum.



The Purpose of Quality Changes in Each Level:

However, the purpose changes with the phases in a product's life cycle.

- **Differentiated Quality**: Attractive quality delivers capability that is differentiated which competitors cannot easily replicate. This is the “core competence” of an organization. This type of capability requires a dynamic characteristic that allows itself to refresh and sustain the competitive advantage in the face of changing conditions in the business environment and shifts in technology exploitation through innovation.
- **Competitive Quality**: Competitiveness delivered using a One-dimensional quality attempts to maintain customer perception of superiority in your comparative value proposition relative to industrial competitors. Consumer choice is based on relative value in market offerings.
- **Commodity Quality**: Must-be quality delivers commodity-like performance to markets when customers perceive little-to-no difference in features or functions and chooses based on the reliability of quality performance and lowest total cost.

Understanding Strategic Positioning

Developing Competitive Advantage



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We are beset by dynamic environments!

Time and competition do not stand still for any organization. It is most essential that we learn to “move with the times,” indeed to anticipate these environmental shifts and be ahead of the times, if we wish to sustain our competitiveness.

As product life cycles change and organizations manage more than one product, it becomes clear that we be competitive in all three of these market disciplines – simultaneously manager each one at different times and for different products as they transverse their life cycles.

Agility in managing becomes a core competence if we are going to remain a leader in our business. Flexibility in management, must be supplemented by collaboration in coordinated work functions, and discipline in the daily management of work. And all three of these focus areas must effect improvement on a constant basis.

All three dimensions are needed to succeed!

This requires that we develop cooperation and inclusiveness.

Customer Satisfaction

Innovation Stimulation

Customer Insight

Degree of Fulfillment

Competence Development

Growing an organizational culture to succeed:

Processes must mature, people must develop, products must improve!

Competence Development: Organizations can only be as good as the synergy between its people. Competence in an organization is a result of individual skills and experience as contributed by everyone in the organization as they collaboratively share in the pursuit of the common purpose. When individuals are motivated to participate in this pursuit, then organizational competence will flourish.

Customer Insight: Organizations that can perceive emerging needs of targeted customers and anticipate new directions to develop will possess an enduring competitive advantage. Knowledge comes from intimacy with customer applications and imaginative understanding of their needs. Gaining insight requires good customer relationships.

Innovation Stimulation: Ability to innovate is too important to be left to chance. Management must stimulate creativity, encourage experiments, and try ideas with an appreciation for learning about the “hidden knowledge” that is capable of exploitation to improve the “job the customer needs to get done.”

Define what you need to do to compete!

The Kano Model gives you a unique way of looking at yourself!

Customer Satisfaction



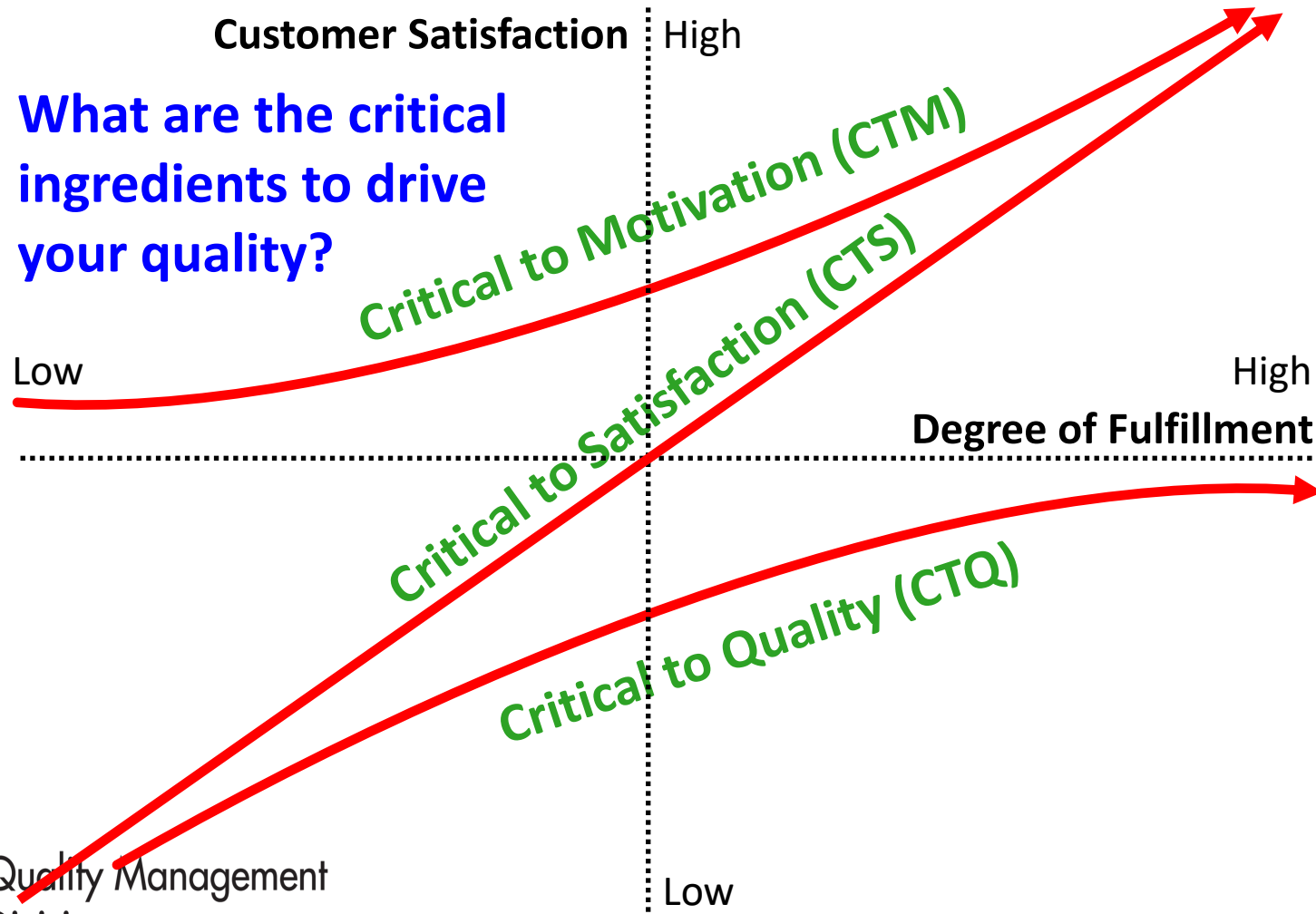
“Inclusive quality involves and engages all people at every level to fulfill their unique responsibility to deliver quality outcomes!”

~ Gregory H. Watson

The Imperative: Manage critical assumptions:

Building value into customer experience requires focus in all three areas.

What are the critical ingredients to drive your quality?



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Take-away Lessons Learned

Take this quality quiz on Kano's theory:

1. Under which of the three quality characteristic curves would you most likely list the features of a “killer” app or a “hot” product?
2. Do attractive quality and one-dimensional quality converge, or do they diverge as they approach “engineering excellence?”
3. Will “attractive quality” always be superior as a decision-making criteria to the other two quality functions?
4. What quality function will a customer most likely describe as being important to their decision to purchase?
5. Which quality characteristics are most likely to be ignored when a “voice-of-the-customer” survey is conducted?
6. Do one-dimensional quality and must-be quality converge, or do they diverge as they approach “engineering failure”?
7. Where does “irrelevant quality” appear in Kano's model?
8. What identifies an irrelevant quality function in Kano's model?
9. What is the meaning of “reverse quality” in Kano's model?
10. How do these three quality functions relate to design strategy?



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Critical take-away observations:

Strategic insight aids management in doing things differently in the future. Gaining perspective on what to do and what can be done requires deep reflection into the nature and meaning of all relationships in a business.

The Kano Model, or “Theory of Attractive Quality,” provides an exceptional window for how organizations can learn to become competitive and maintain competitiveness.

This webinar addressed the following learning objectives:

- **Understand the theory behind the Kano Model.**
- **Define the meaning behind the quality characteristics.**
- **Describe the strategic implications of the Kano Model.**



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Thank you

Gregory H. Watson, PhD.

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Future QMD Webinars – 6:00 PM ET

(unless noted otherwise)

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

No. 10: "Insights into the Essence of Operational Excellence" September 29, 2020

No. 11: "Defining Quality to Apply to Everyone, Everywhere" October 14, 2020

No. 12: "Managing for Quality Amidst Digital Turbulence" November 17, 2020

Other Webinars in 2020:

“QMD Part 3- How to find QMD Content” by Susan Gorveatte 10/5/2020 **3 pm ET**

“Write Persuasively So Readers Understand Your Message” by Leslie O'Flahavan
10/8/2020

“QMD Part 4- How to create content in support of quality management
professionals” by Dawn Ringrose 10/29/2020 **2 pm ET**

“Strategic Planning and Hoshin Kanri” by Jd Marhevko and Eric Zinc 11/5/2020

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