

Understanding and applying the Kano Model properly can change the way organizational leaders develop and deploy strategies that ensure products and services will drive customers' purchasing decisions and loyalty, ensuring long-term business sustainability.

# Using the Kano Model as a Basis for Strategic Thinking

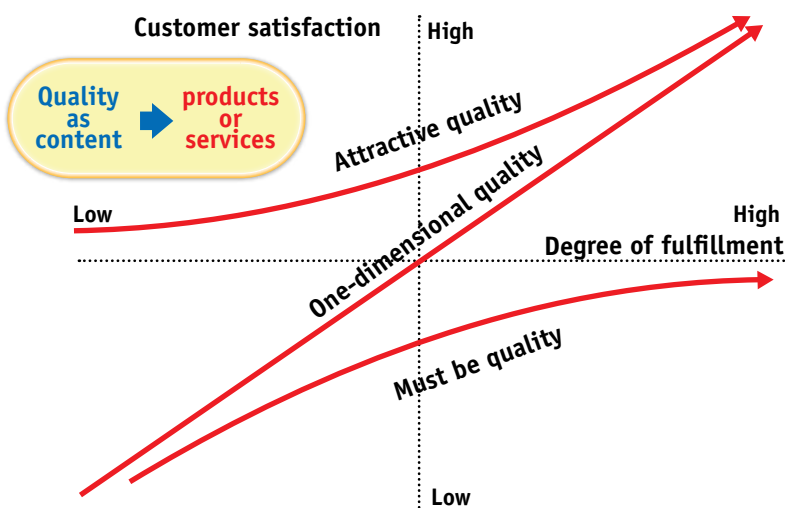
Gregory Watson

In 1984, Noriaki Kano and his colleagues published an explanation of an entirely new process they developed to better describe customer requirements, preferences, and satisfaction.<sup>1,2</sup> This breakthrough approach was accepted very quickly across the globe, and the framework on which it is built now is known as the Kano Model or the Theory of Attractive Quality.

This model describes five dimensions that differentiate customers' perceptions of product/service features. In particular, they identified three quality levels in products and services—attractive, must-be, and one-dimensional quality. Attractive quality anticipates the needs of customers, must-be quality describes customers' basic

requirements, and one-dimensional quality indicates the product/service characteristics that matches competitive offerings and are virtually unnoticed by customers (see Figure 1). This article also focuses on those three dimensions, and it connects the model's information to the strategic-thinking approaches that drive business performance.

Figure 1: Kano Model for the Theory of Attractive Quality



Kano shared two essential criteria regarding this process. “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.”<sup>3</sup> and “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.”<sup>3</sup>

### **Forward- and Backward-Looking at Quality**

To begin to understand the Kano Model and how it can have a profound impact on strategic thinking, it is first important to realize that quality can be considered from two very different perspectives. Forward-looking quality focuses on creating positive value by enhancing features that lead customers to believe that the resultant products/services are superior to other options available in the marketplace. Clearly, this approach attempts to identify features that will create differential customer satisfaction and increase customers’ purchases and loyalty.

On the other hand, backward-looking quality aims to resolve product/service issues that have occurred in the past. These include defects that have been observed by customers, issues related to failure of the product/service to meet customers’ expectations, and/or feedback associated with complaints. All of these are associated with the potential loss of customers’ sales, and they tend to receive a high level of attention from most organizations, but this approach is a stopgap measure that focuses on eliminating customer dissatisfaction without increasing the perceived value of the product/service.

Obviously, backward-looking quality efforts are essential, but they are far from sufficient. They have little or no effect on the organization’s ability to sustain long-term acceptable performance. If a business limits or over-emphasizes the backward-looking approach, it can expect to lose ground to its competitors—the ones who are ensuring that current products/services satisfy customers’ expectations and simultaneously are constantly looking for and finding ways to offer unique solutions that separate their products/services from the pack.

### **Definitions of Quality**

Kano and his colleagues had a rich supply of quality concepts regarding the meaning of quality

available to them when they were developing the new model. Although there have been many published definitions of this term from academics and professionals across the globe, the work of organizations, such as the Union of Japanese Scientists and Engineers, has provided a well-accepted source for distinguishing among the multiple dimensions of quality. Understanding two concepts of quality that exist in Japanese literature is particularly important because they provide the framework for the Kano Model.<sup>4</sup>

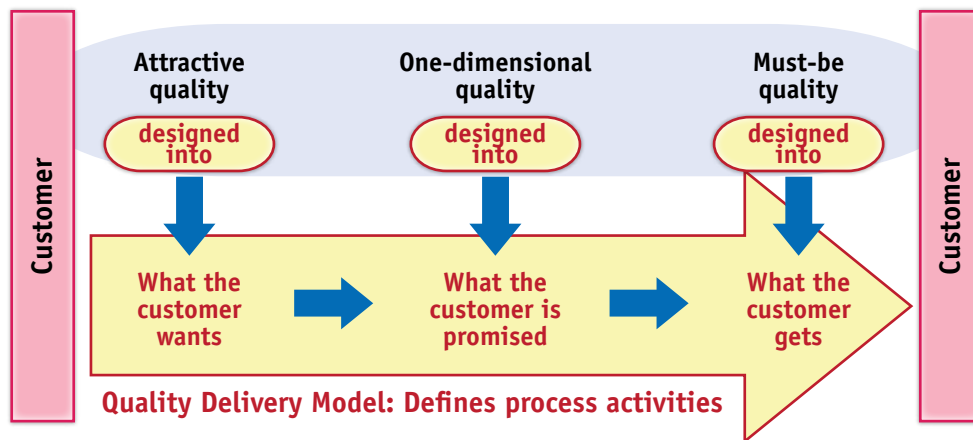
- Atarimae Hinshitsu (当たり前品質) is used to describe a product/service that is fit for function and is capable of doing or performing its intended purpose (e.g., a pen will apply ink to a substrate without smearing or other defects). This dimension is described primarily as must-be quality in the Kano Model; however, characteristics which exist in competitive offerings that are associated with one-dimensional quality are likely also to be noticed, and hopefully addressed, in conjunction with backward-looking quality initiatives.
- Miryokuteki Hinshitsu (魅力的品質) refers to the “charm of quality,” and it is associated with the measurement characteristics such as appearance, sound, and touch, which customers perceive as giving “personality” to the product/service. This dimension satisfies customers’ concepts of features that are fascinating and are “worthy of attraction” or “fit for love.”

This understanding of quality has broadened management’s attention beyond the currently produced offerings to include features that generate distinctive aesthetic qualities (e.g., such as a pen that is pleasing to the writer during its use and to the reader as its output is observed). This dimension is described as attractive quality in the Kano Model.

### **Learning What Really Matters to Customers**

So quality is both the content of a product/service that is provided to customers and a process for identifying and developing new or substantially improved characteristics which increase the value proposition for customers and improve their overall experience. The three components of the Kano Model—must-be, one-dimensional, and attractive quality—not only capture immediate customer needs but also drive the innovation that ensures future success. The process steps associated with designing and delivering quality, therefore, must

**Figure 2: The Process of Managing for Quality**



include tasks for learning what the customer wants, discovering what the customer believes has been promised, and evaluating the customer's perception of what they actually received. Of course, the work of gathering this critical information needs to involve the targeted customers so that improvements and innovations can have a definitive impact on business results. Figure 2 demonstrates these relationships.

Just how do the must-be, one-dimensional, and attractive-quality dimensions of the Kano Model connect specifically with customer behaviors? Frederick Herzberg's Motivator-Hygiene Theory provided insights that Kano considered when formulating this model (see the article, "A Comprehensive Refresher on the Kano Model," which also appears in this issue). Fundamentally, the Kano Model recognizes that there is more than one potential reaction of customers to each specific product/service characteristic. Some features generate customer satisfaction, others increase customer dissatisfaction, and some have a neutral effect (not affecting satisfaction). Prior to introduction of the Kano Model, organizations generally considered the inclusion of new features as automatically increasing satisfaction and adding value in the minds of customers. The fiascos associated with product/service changes that were presumed to be value-added improvements by the producers but that failed in the marketplace were considered to be anomalies rather than the result of poor decision making. They were written off as one-time issues instead of being recognized as failures in

the processes related to strategic thinking, market research, product/service development, etc. The Kano Model's publication basically revolutionized the way organizations came to understand customers' behaviors, including purchasing choices and brand loyalty.

Before product/service features can be categorized into one of the five dimensions addressed in the Kano Model, customers' requirements need to be identified and described clearly. Unfortunately, obtaining that information is frequently more complicated than might be anticipated. In some cases, customers can express their expectations clearly, but, in other cases, customers are either unable to describe their requirements, or they lack the knowledge or communication ability to specify features that they want or would appreciate having included in the design. They also may perceive that a particular feature is so obviously needed that they don't think it's worth mentioning when they provide input. Furthermore, customers may not even be aware of potential options that might enhance the product/service and their experiences substantially. This reality definitely complicates the process of identifying and evaluating design options, so they can be categorized properly according to the Kano Model.

Of course, organizations that lead their markets and consistently present customers with highly valued innovations have processes in place that overcome the inherent issues of determining customers' needs and addressing those requirements in differentiating ways. In other words, they have

mastered the ability to provide attractive quality. The approaches listed below are built into the most successful processes:

- Understanding what it takes for the product/service to be suitable for the customer's usage.
- Having the capability to provide the full range of functionality necessary for the product/service to perform as required.
- Going beyond functionality to incorporate aesthetics (style and form) that delight customers.
- Being able to think creatively and generate innovations that make the product/service 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 humans interface with it.
- Making it possible for the product/service to be used in a wider variety of applications.
- Ensuring that the product/service is durable and will perform reliably in all its intended environments.
- Bringing esteem to the customers who use the product/service because it is a recognized and respected brand.

### Strategies That Change the Organizational Profile

Successful organizations have clearly defined purposes that are fulfilled by their daily management

systems—the systems they have in place to ensure provision of value to customers. They create core competence that support attainment of the value proposition consistently, and they emphasize the three following strategic disciplines (see Figure 3) to maintain that capability even though surrounding environmental factors keep changing.<sup>5</sup>

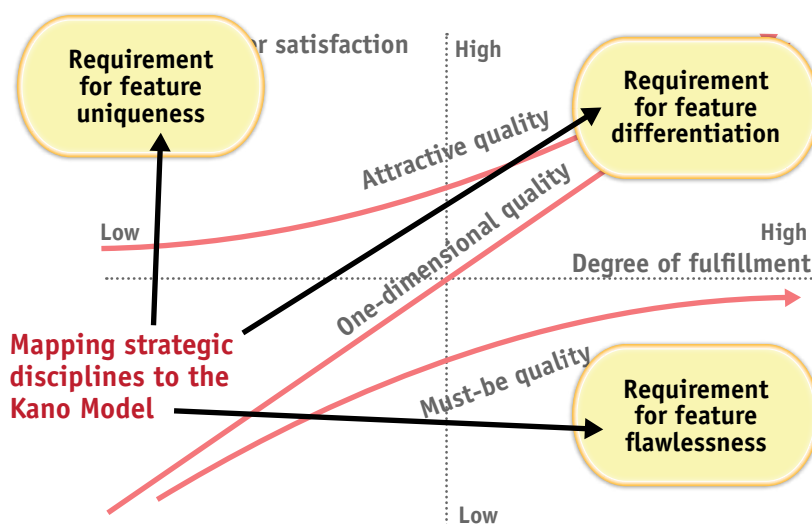
- *Product/service leadership*—Delivering innovative product/service features that exploit new technological innovations, transforming research results into applications that facilitate customers' usage and enhance their positive perceptions.
- *Customer intimacy*—Adjusting products/services to ensure they fulfill all of the customers' requirements better. This discipline focuses on building agility in the marketplace so that the adjustments can reposition offerings in ways that simultaneously increase satisfaction and generate business performance gains.
- *Operations excellence*—Being able to provide consistent low-cost and highly effective and efficient provision of goods and services that have no perceivable flaws. This discipline applies methods that reduce costs by eliminating all forms of waste throughout the product/service's life cycle. This typically leads to having a competitive pricing as well as flawless execution of work.

The quality approaches used to address the three dimensions of the Kano Model discussed in detail in this article are not all identical. Each

of the dimensions requires specific considerations to ensure the product/service features will meet the appropriate customer requirements, as described below:

- *Must-be quality* is achieved when the product/service complies with customers' essential requirement levels. A compliance-based quality approach does not drive customers' purchasing decisions directly; it merely ensures that the offering meets the minimum threshold which

Figure 3: Alignment of Strategic Disciplines to the Kano Model



makes the customer willing to purchase it. When the must-be quality dimension is fulfilled, actual purchasing decisions actually are driven by price.

- Improvement efforts are used to maintain one-dimensional quality (competitive quality in the figure), which positions the product/service as being competitive within its particular market. Customers see the offering as equivalent to competitors' options. This generates head-to-head comparisons and results in purchasing decisions that are based on a more comprehensive evaluation of all the features.
- Attractive quality only can be attained when the organization seeks excellence, going beyond current requirements and competitive products/services. Imaginative designs that appeal to customers previously unrecognized or unconsidered features separate these products/services from the pack and establish a whole new standard for comparison. It is represented by the "differentiated quality" track in this adaptation of the model.

Organizational competence is the result of the synergistic combination of individual staff members' skills and experiences as they pursue the business's purpose. Encouraging and developing individuals' application of knowledge and skills that support collaboration, improve interactions, and increase personal and organizational capabilities is instrumental to being able to design features properly within the Kano Model's framework.

Being able to perceive emerging requirements of targeted customers and anticipate new directions for development pleads to enduring competitive advantage. Obtaining an intimate understanding of customers' uses of the product/service builds critical relationships and captures customers' insights that can drive designs.

The ability to innovate is too important to be left to chance. Management must stimulate new ideas and encourage experiments that apply appreciative inquiry to understand the "hidden knowledge" that is not yet known but might be exploited to improve customers' experiences when using the product/service in order to enhance the value proposition.

Sustainable excellence, however, occurs only when the organization's processes are able to meet the required quality level reliably on a continuing basis, ensuring competitive advantage is maintained despite the effects of unavoidable variation. Achievement of a state of control requires

management to support appropriate adjustments to processes that reflect changing customer expectations. In other words, true process control occurs when this strategic approach to quality management and product/service leadership is recognized as being dynamic. They need to support changes that are associated with process externalities and natural process variation. This results in a sustainably positive experience for customers that enhances brand recognition. When management develops a system to provide attractive quality persistently, there must be components that assure reliable control over process variables (both controllable and uncontrollable) and simultaneously maintains consistent, robust quality of deliverables despite changes in the process variables.

It's important to reiterate that for the organization to continue to meet its purpose in a dynamically changing environment involves successful development and deployment of two systems—strategic planning and the daily management system, which must operate in tandem with proper direction and coordination, as mentioned earlier in this article. The application of various quality approaches differs between these two systems and the objectives that are present. Highly successful organizations that have been studied have been found to have a clear understanding of how to integrate these two systems to create agile performance that stays abreast with newly recognized opportunities and issues. Their senior managers make conscious decisions related to both systems and the integration of those systems.

The two descriptions below are intended to clarify the objectives of each of these systems:

- The strategic quality management system is intended to deliver breakthrough transformation by conducting projects that either will advance the process performance capability of the daily management system significantly or will provide a substantial leap in the capability of product/service performance. The projects that identify the changes necessary to achieve these breakthroughs require revolutionary thinking, including innovative insight into the customer's application. Notice, however, that realization of the findings of these critical projects actually occurs through the processes associated with the daily management system.
- On the other hand, the objective of a daily management system is to maintain a discipline



for controlling the performance of routine work so that the standard work outcomes achieve continual improvement. This system generates improvements by conducting planned sequences of small experiments that increase the reliability of process performance or quality, or reduce costs through evolutionary change.

The organizations that gather and appropriately categorize customer insights by using the approach associated with the Kano Model actually are seeking another type of quality that can be called “transcendental”. They persistently pursue goodness while carefully avoiding badness.<sup>6</sup> These two opposing outcomes are achieved by tightly managing the strategic quality and daily management systems in a way that identifies opportunities and risks thoroughly and making well-considered decisions.

This transcendental quality approach impacts the organization’s changing products/services in three ways. First, the operational processes are designed and executed in a reliable way that ensures the customers’ requirements are being met properly. The operational processes, however, also address other elements that impact customers’ experiences when they are working with the organization’s support services and/or using its products/services. Finally, transcendental quality connects these first two customer-focused requirements directly with the internal processes that are conducted to provide all deliverables that customers receive. Transcendental quality is not attained by following a generically applicable framework. Instead, each organization identifies and manages its own unique processes after determining how their processes interact to fulfill customers’ expectations.<sup>7,8</sup>

The components of the productive system that combine human elements with technical and process elements to deliver the organization’s outputs to its customers also must be in place for organizations to succeed in these efforts. There are three key components in this system. The technical area

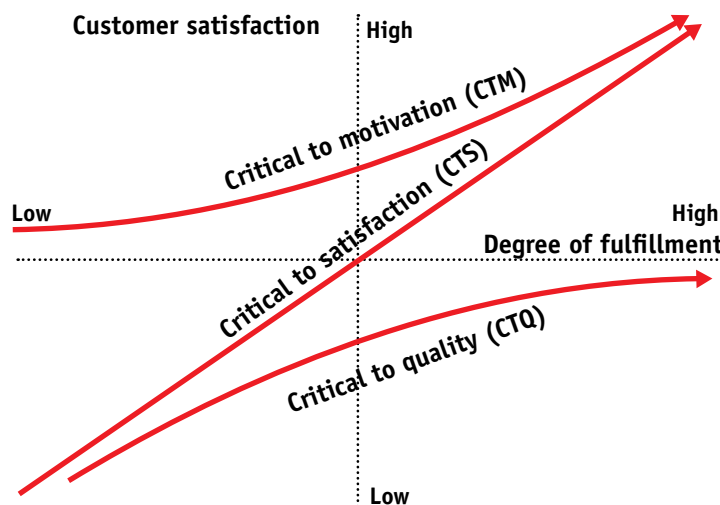
includes hardware, software, and support. Process flow, data, and analytics are associated with the system component, and the human factors include philosophy, psychology, and methods. The following three quality approaches drive this system:

- Quality as content—The outputs provided to organizational customers.
- Quality as experience—The experiences of customers with the quality outputs.

Quality as methods—The tools and techniques applied to create quality. Ultimately, quality drives the methods that drive actual achievements, as shown by the “ingredients” in Figure 4.

- *Critical to quality (CTQ)*—In order to understand the requirements of the must-be quality dimension with its requirements for delivering a disciplined approach to feature and function characteristic compliance, an organization must pay particular attention to the drivers of both product/service quality as well as the process by which its deliverables are created. Failure to meet expectations and requirements described in the CTQs undermines customer confidence in the deliverables and results in loss of business over the long term.
- *Critical to satisfaction (CTS)*—These requirements provide a competitive edge to the features and functions of the organization’s products/

**Figure 4: Critical Ingredients That Drive Quality**



services. A CTS quality characteristic should take advantage of the intimate customer insights and improve performance relative to competitive market offerings. Their performance requirements are clearly superior to alternatives and will create higher perceivable value to customers.

- *Critical to motivation (CTM)*—These create the “charm of a product” through differentiated innovation that triggers emotional responses to latent customer desires and, thereby, creates customer delight that results in a “killer product/service” or “hot application” that disrupts the marketplace.

Of course, organizations cannot design and deploy these worthwhile systems overnight. Instead, those businesses that see the value of this integrated approach increase the maturity of their systems over time. Diligent leadership attention and appropriate support, including allocation of necessary resources, is essential for progressing from initial efforts to implementation and continual improvement of comprehensive, high-performing systems.

## Summary

The most common application of the Kano Model is for analysis of customer requirements; however, a strategic application can be made by understanding the dynamics inherent in the model. Features degrade throughout time. What was attractive yesterday becomes competitive the next day, and it may ultimately revert to being a must-be feature. Additionally, the amount of quality designed into a feature that is characterized by any of the paths shown in the model for those three dimensions may vary on a relative quality scale from good-to-bad as interpreted by customers. If an organization intends to sustain its market and continue to develop its business, it needs to apply the Kano Model findings in a disciplined manner that integrates customer insights with the overall business strategy. This approach relies on the application of quality principles to develop and maintain the associated competitive advantage that occurs.

## References

1. Noriaki Kano, “Attractive Quality and Must-be Quality,” *Proceedings of the 12th Annual Meeting, 1982, Japanese Society for Quality Control*, pp. 71–87. [In Japanese].
2. Noriaki Kano, Nobuhiko Seraku, Fumio Takahashi, and Shinichi Tsuji, “Attractive Quality and Must-be Quality,” *Best on Quality*, Volume 7, 1996, International Academy for Quality, p. 171.
3. Noriaki Kano, “The Role of Top Management in Achieving Quality,” *Auto Source International*, 1987, Wilcord Publications, Ltd. pp. 27–30.
4. Noriaki Kano, “Miryoku-teki Hinshitsu to Atarimae Hinshitsu,” *Hinshitsu (Quality)*, *The Journal of the Japanese Society for Quality Control*, 1984, Vol. 14, No. 2, pp. 39–48. [In Japanese].
5. Michael Treacy and Fred Wiersema, *The Discipline of Market Leaders*, 1995, Perseus Books.
6. Noriaki Kano, “Degree of Badness,” *Journal of SQC, Union of Japanese Scientists and Engineers*, 1976, Vol. 27, No. 5, pp. 4–14. [In Japanese].
7. Noriaki Kano, “A Perspective on Quality Activities in American Firms,” *California Management Review*, 1993, Vol.35, No. 3, pp. 12–31.
8. Noriaki Kano, “Business Strategies for the 21st Century and Attractive Quality Creation,” *Proceedings of the International Conference for Quality – Yokohama*, 1996, pp. 105–108.

## Gregory H. Watson

Gregory H. Watson ([greg@excellence.fi](mailto:greg@excellence.fi)) is chairman of Business Excellence Solutions, Ltd. of Finland. He holds a Ph.D. in industrial engineering and management from Oklahoma State University. Watson is a Fellow and past chair of ASQ, as well as an Honorary member and past president of the International Academy for Quality. He was the first non-Japanese person to receive the W. Edwards Deming Medal from the Union of Japanese Scientists and Engineers.