ITIL Service Strategy

1

THE KANO MODEL
"HOW TO DELIGHT YOUR CUSTOMERS"

The Kano Model – What is it?

- ## Professor Noriaki Kano
  - In 1984 from Tokyo Rika University
  - Developed a set of ideas for planning a product, service or process
  - Listing potential customer needs that the product, service or process should perhaps try to satisfy
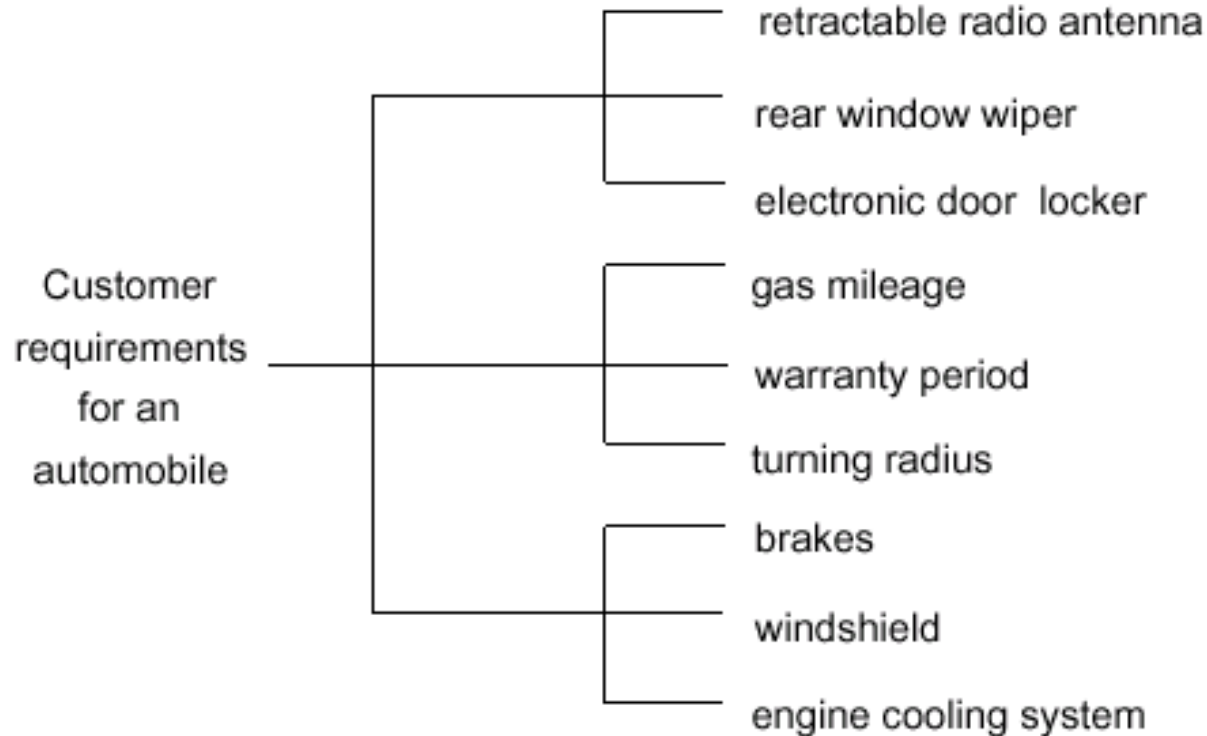
The Kano Model – What is it? (cont.d)

1. Invisible ideas about quality can be made visible
   - Customer ideas about quality are often confused and difficult to see clearly, but they can be made clear
   - As the customers ideas of quality are made clear, many requirements emerge and they fall into several groups

The Kano Model – What is it? (cont.d)

4

Example of Customer Requirements

Customer requirements for an automobile
- retractable radio antenna
- rear window wiper
- electronic door locker
- gas mileage
- warranty period
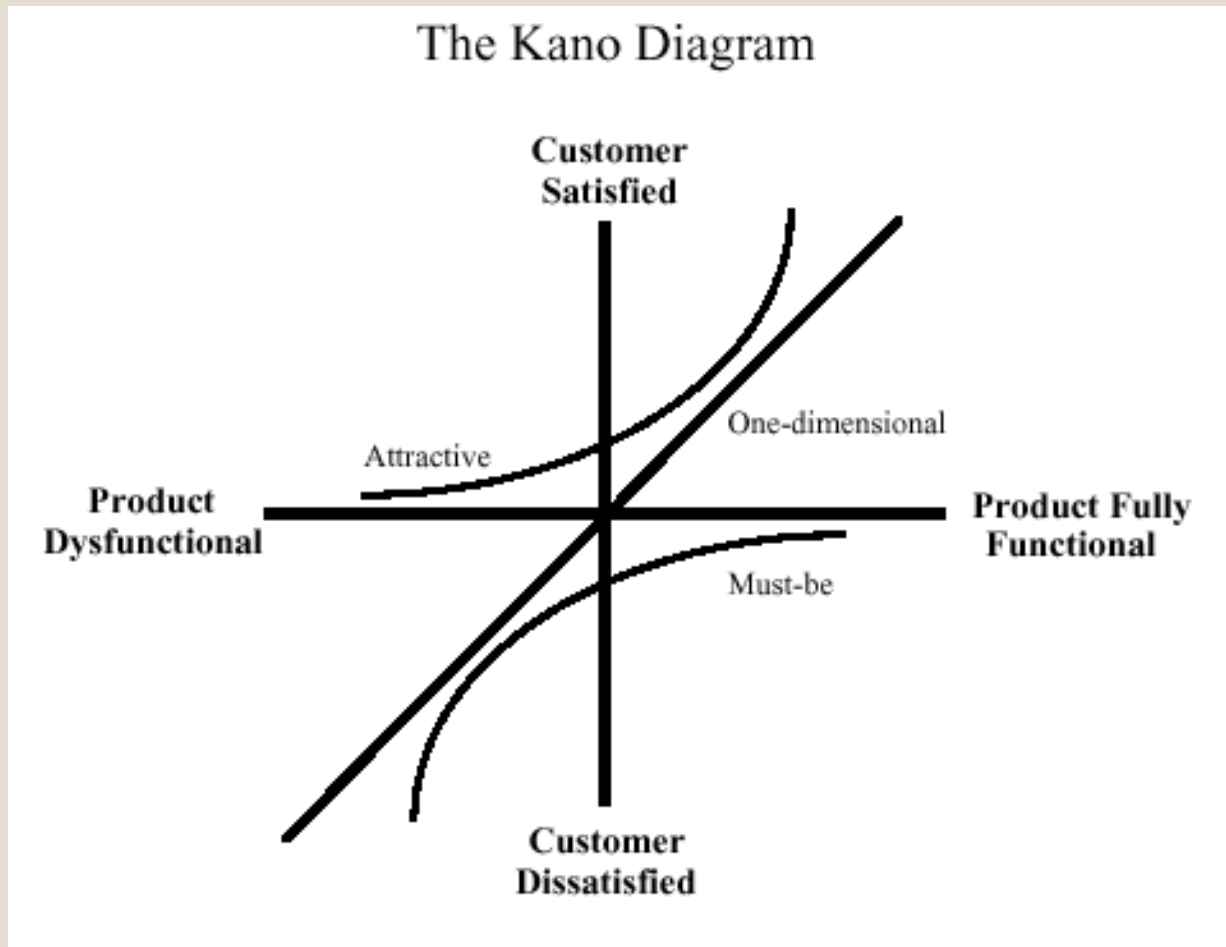- turning radius
- brakes
- windshield
- engine cooling system

The Kano Model – What is it? (cont.d)

2. For some customer requirements, customer satisfaction is proportional to how fully functional the product is

   o The horizontal axis of the Kano diagram indicates how fully functional some aspect of a product is

   o The vertical axis indicates how satisfied the customer is

The Kano Model – What is it? (cont.d)

The Kano Diagram

The Kano Model – What is it? (cont.d)

o Traditional ideas about quality have sometimes assumed that customer satisfaction was simply proportional to how functional the product, service or process was

o That is, the less functional the product, service or process the less satisfied the customer, and the more functional the product, service or process the more satisfied the customers

o In the Kano diagram, the line going through the origin at 45 degrees graphs the situation in which customer satisfaction is simply proportional to how fully functional the product, service or process is
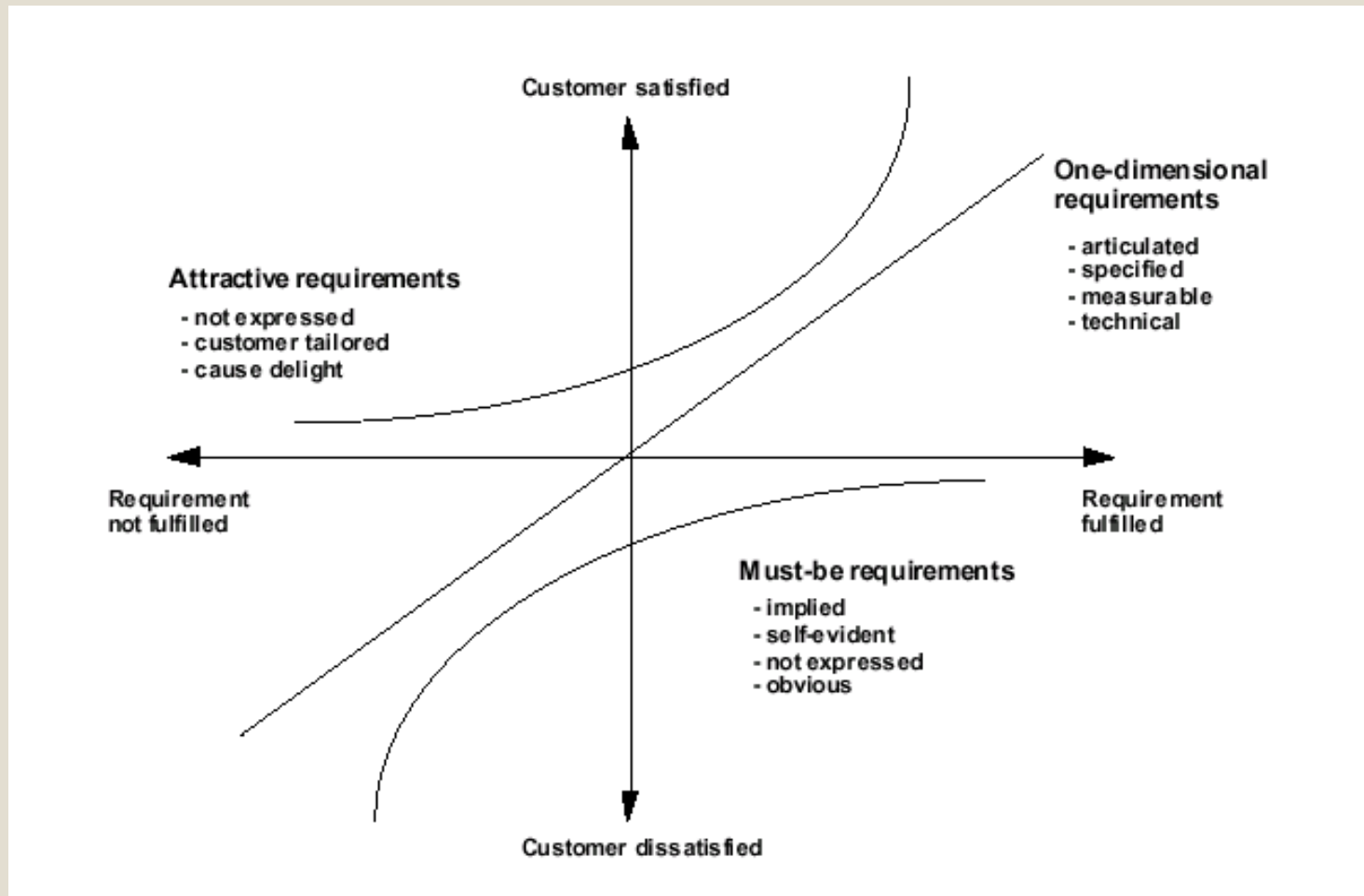
The Kano Model – What is it? (cont.d)

8

3. Some customer requirements are not One-dimensional - there are also "must-be" and "attractive" elements

- The "Must-be" curve indicates aspects where the customer is more dissatisfied when the product, service or process is less functional, but where the customer's satisfaction never rises above neutral no matter how functional the product, service or process becomes

- The "Attractive" curve indicates areas in which the customer is more satisfied when the product, service or process is more functional but is not dissatisfied when the product, service or process is less functional

The Kano Model – What is it? (cont.d)

The Kano Model – What is it? (cont.d)

10

○ One-dimensional requirements

- With regard to these requirements, customer satisfaction is proportional to the level of fulfillment

- The higher the level of fulfillment, the higher the customer's satisfaction and vice versa

- One-dimensional requirements are usually explicitly demanded by the customer

The Kano Model – What is it? (cont.d)

○ Must-be requirements

- If not fulfilled, the customer will be extremely dissatisfied
- On the other hand, as the customer takes these requirements for granted, their fulfillment will not increase his satisfaction
- The must-be requirements are basic criteria of a product and fulfilling the must-be requirements will only lead to a state of "not dissatisfied"
- The customer regards the must-be requirements as prerequisites, and therefore does not explicitly demand them
- If they are not fulfilled, the customer will not be interested in the product, service or process at all

The Kano Model – What is it? (cont.d)

12

○ Attractive requirements

- These requirements are the product criteria which have the greatest influence on how satisfied a customer will be with a given product, service or process

- Attractive requirements are neither explicitly expressed nor expected by the customer

- Fulfilling these requirements leads to more than proportional satisfaction

- If they are not met, there is no feeling of dissatisfaction

The Kano Model – What is it? (cont.d)

13

4. Customer requirements can be classified by questionnaire

- Each question has two parts
  - How do you feel if that feature is present in the product, service or process?
  - How do you feel if that feature is not present in the product, service or process?
- To each part of the question, the customer can answer in one of five different ways

The Kano Model – What is it? (cont.d)

- The Five Different Requirements
  - A = Attractive
  - M = Must-be
  - O = One-dimensional
  - I = Indifferent
  - R = Reversed
  - Q = Questionable

- The first 3 have already been defined and together with Indifferent, these are primarily what we are seeking in the Kano analysis

The Kano Model – What is it? (cont.d)

15

○ I = Indifferent

  ✗ A customer may also be indifferent to a quality element and would be plotted roughly along the horizontal axis

  ✗ That is, the customer is neither satisfied nor dissatisfied whether the product, service or process is dysfunctional or fully functional

The Kano Model – What is it? (cont.d)

16

- R = Reversed
  - A priori judgment of functional and dysfunctional was the reverse what the customer feels
  - This product, service or process feature is not only not wanted by the customer but they even expect the reverse

- Q = Questionable
  - There is a contradiction in the customers answers to the questions
  - Questionable scores signify that the question was phased incorrectly, or that the person interviewed misunderstood the question or crossed out a wrong answer by mistake

The Kano Model – What is it? (cont.d)

17

A Pair of Customer Requirement Questions in a Kano Questionnaire

functional form of
the question

If the gas mileage is good, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
If the gas mileage is poor, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.

dysfunctional form
of the question

The Kano Model – What is it? (cont.d)

Kano Evaluation Table

Customer Requirements →		Dysfunctional				
		1. like	2. must-be	3. neutral	4. live with	5. dislike
Func-tional	1. like	Q	A	A	A	O
	2. must-be	R	I	I	I	M
	3. neutral	R	I	I	I	M
	4. live with	R	I	I	I	M
	5. dislike	R	R	R	R	Q

Customer Requirement is:

A: Attractive
M: Must-be
R: Reverse
O: One-dimensional
Q: Questionable result
I: Indifferent

The Kano Model – What is it? (cont.d)

19

Examples of Three (Potential) Customer Requirements in a Kano Questionnaire

1a. If the gas mileage is good, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
1b. If the gas mileage is poor, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
2a. If the brakes are good, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
2b. If the brakes are poor, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
3a. If the radio antenna automatically retracts when the radio is turned off, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.
3b. If the radio antenna does not automatically retract when the radio is turned off, how do you feel?	1. I like it that way. 2. It must be that way. 3. I am neutral. 4. I can live with it that way. 5. I dislike it that way.

The Kano Model – Why is it Used?

- Advantages of the Kano method
  - Sets priorities for development
    - It is not useful to invest in improving must-be requirements which are already at satisfactory level
    - But better to improve one-dimensional or attractive requirements as they have greater influence on perceived product, service or process quality and consequently on the customer's level of satisfaction
  - Requirements can be better understood
    - Product, service or process criteria which have the greatest influence on the customer's satisfaction can be identified

The Kano Model – Why is it Used? (cont.d)

21

- ## Advantages of the Kano method (cont.d)
  - Can be optimally combined with quality function deployment
    - Kano's model is used to establish the importance of individual product, service or process features for the customer's satisfaction and thus create the optimal prerequisite for process-orientated product, service or process development activities
  - Provides valuable help in trade-off situations in the product, service or process development stage
    - If two product, service or process requirements cannot be met simultaneously due to technical or finance reasons, the criterion can be identified which has the greatest influence on customer satisfaction

- ## Advantages of the Kano method (cont.d)

  - Must-be, one-dimensional and attractive requirements differ, as a rule, in the utility expectations of different customer segments

    - Customer-tailored solutions for special problems can be elaborated which guarantee an optimal level of satisfaction in the different customer segments

  - Discovering and fulfilling attractive requirements creates a wide range of possibilities for differentiation

    - A product, service or process that merely satisfies the must-be and one-dimensional requirements is perceived as average and therefore interchangeable

- Developing and Administrating Kano Questionnaires
  - 1. Develop the questionnaire
  - 2. Test the questionnaire and revise if required
  - 3. Administer the questionnaire to customers
  - 4. Analyse the results

The Kano Model – How it is Used? (cont.d)

24

- ### Developing and Administrating Kano Questionnaires (continued)

  - #### 1. Develop the questionnaire
    - Formulate a pair of questions for each potential customer requirement for which you require feedback
    - Don't try to cram several thoughts into one question
    - Make sure questions are in customer terms, not development terms, that is , in terms of benefits, not features
    - When formulating the questions, the "voice of the customer" is of prime importance

The Kano Model – How it is Used? (cont.d)

○ 1. Develop the questionnaire (continued)

  ✗ The first question of the pair concerns the reaction the customer if the product, service or process has that feature (functional form of the question)

  ✗ The second question of the pair concerns their reaction if the product, service or process does not have that feature (dysfunctional form of the question)

  ✗ The "voice of the customer" is a description of the problem to be solved from the customer's viewpoint

  ✗ If one asks about the technical solutions of a product, service or process, it can easily happen that the questions is not correctly understood

The Kano Model – How it is Used? (cont.d)

- 1. Develop the questionnaire (continued)

  - The customer is not interested in how, but which of their problems will be solved

  - In addition to the Kano questionnaire, it might be helpful to have the customer rank the individual product, service or processes criteria of the current product, service or process, and to determine the relative importance of the individual product, service or process criteria (self-stated-importance)

  - This will help establish priorities for product, service or process development and make improvements wherever necessary

The Kano Model – How it is Used? (cont.d)

If your skis make it much easier for you to ski in deep powder snow, how do you feel?

- [X] I like it that way
- [ ] It must be that way
- [ ] I am neutral
- [ ] I can live with it that way
- [ ] I dislike it that way

If your skis do not make it any easier for you to ski in deep powder snow, how do you feel?

- [ ] I like it that way
- [ ] It must be that way
- [X] I am neutral
- [ ] I can live with it that way
- [ ] I dislike it that way

How would you rank the deep powder snow features of your skis?

1	2 (X)	3	4	5	6	7

totally unsatisfactory — excellent

How important are the following features?

	totally unimportant						very important
	1	2	3	4	5	6	7
Good edge grip on hard snow							X
Ease of turn					X		
Excellent deep snow features							X
Scratch resistant surface			X				

The Kano Model – How it is Used? (cont.d)

- ## Developing and Administrating Kano Questionnaires (continued)

  - ### 2. Testing the questionnaire

    - Have members of the team answer the questionnaire first, with each team member thinking of a customer, trying to predict their response and note which questions the customer may not understand

    - Next select people inside your company to answer the questionnaire and administer it back to them

    - Revise the questions and retest

    - Listen carefully and without bias to your internal test customers

The Kano Model – How it is Used? (cont.d)

29

- **Developing and Administrating Kano Questionnaires** (continued)
  - ○ 3. Administering the questionnaire
    - ⤬ 20 to 30 customer interviews in homogeneous segments usually suffice in determining 90-95% of all possible product requirements
    - ⤬ Decide on what medium you intend to use
      - ○ Written questionnaires
      - ○ Oral Interviews
        - · Experience has shown that standardised, oral interviews are the most suitable method for Kano surveys
        - · A standardised questionnaire reduces the influence through the interviewer and the return rate is high and comprehension difficulties can be explained readily

The Kano Model – How it is Used? (cont.d)

- Developing and Administrating Kano Questionnaires (continued)
  - 4. Analysing the results
    - Several benefits are obtained from analysing Kano data:
      - Gaining a better understanding of requirements
      - Prioritising requirements for development activities
      - Distinguishing market segment characteristics
      - Aiding in the design trade-off process

The Kano Model – How it is Used? (cont.d)

- **Developing and Administrating Kano Questionnaires** (continued)
    - 4. Analysing the results (continued)
        - The purpose of a Kano questionnaire is to better understand the characteristics of customer's requirements
        - The responses should be seen only as a guide
        - They do not provide exact answers as to which features must be included in the product or which requirements need not be fully satisfied

The Kano Model – How it is Used? (cont.d)

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - Evaluation according to frequencies
      - The easiest method is evaluation and interpretation according to the frequency of answers
    - Evaluation rule (M>O>A>I)
      - Must-be>One-Dimensional>Attractive>Indifferent
      - When making decisions about product developments, primarily those features have to be taken into consideration which have the greatest influence on the perceived quality of the product, service or process

The Kano Model – How it is Used? (cont.d)

33

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - When two Kano codes are tied in the scoring for a given question, consider:
      - Following up with customers for additional insight
      - Looking for market segmentation differences
      - Selecting the classification that would have the greatest impact on the product (use the following ordering: M>O>A>I)

The Kano Model – How it is Used? (cont.d)

34

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - Self-Stated Importance
      - When deciding which attractive requirements should be satisfied, the decisive factor is how important are they for the customer
      - If those two or three attractive requirements are fulfilled which are regarded as the most important ones per customer segment, the result is a package of product, service or process features which cannot be beaten
      - For each of the potential customer requirements to be included in the Kano questionnaire, construct a question based on the Self-Stated Importance format
      - The Kano method should therefore always be combined with a Self-Stated Importance ranking

The Kano Model – How it is Used? (cont.d)

- ## Developing and Administrating Kano Questionnaires (continued)
  - ○ 4. Analysing the results (continued)
    - ✗ Self-Stated Importance

Example from Self-stated Importance Questionnaire

|	Not at all important		Somewhat important		Important		Very important		Extremely important
How important is it or would it be if: The car has good gas mileage?	1	2	3	4	5	6	7	8	9
How important is it or would it be if: The car has good brakes?	1	2	3	4	5	6	7	8	9
How important is it or would it be if: The car has a long warranty period?	1	2	3	4	5	6	7	8	9
How important is it or would it be if: The car has a small turning radius?	1	2	3	4	5	6	7	8	9

The Kano Model – How it is Used? (cont.d)

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - Customer satisfaction coefficient (CS coefficient)
      - The customer satisfaction coefficient state whether satisfaction can be increased by meeting a product requirement, or whether fulfilling this product requirement merely prevents the customer from being dissatisfied
      - Different market segments usually have different needs and expectations so sometimes it is not clear whether a certain product feature can be assigned to the various categories, it is especially important to know the average impact of a product requirement on the satisfaction of all customers

The Kano Model – How it is Used? (cont.d)

37

- Developing and Administrating Kano Questionnaires (continued)
  - 4. Analysing the results (continued)
    - Customer satisfaction coefficient (CS-coefficient)
      - The CS-coefficient is indicative of how strongly a product feature may influence satisfaction or, in case of it "non-fulfillment" customer dissatisfaction
      - To calculate the average impact on satisfaction it is necessary to add the attractive and one-dimensional columns and divide by the total number of attractive, one-dimensional, must-be and indifferent responses
      - For the calculation of the average impact on dissatisfaction you should add the must-be and one-dimensional columns and divide by the same normalising factor

The Kano Model – How it is Used? (cont.d)

38

- Developing and Administrating Kano Questionnaires (continued)
  - 4. Analysing the results (continued)
    - Customer satisfaction coefficient (CS-coefficient)

Extent of satisfaction:

$$\frac{A+O}{A+O+M+I}$$

Extent of dissatisfaction:

$$\frac{O+M}{(A+O+M+I) \times (-1)}$$

The Kano Model – How it is Used? (cont.d)

- ## Developing and Administrating Kano Questionnaires (continued)

  - ### 4. Analysing the results (continued)

    - #### Customer satisfaction coefficient (CS-coefficient)

      - The positive CS-coefficient ranges from 0 to 1; the closer the value to 1, the higher the influence on customer satisfaction

      - A positive CS-coefficient which approaches 0 signifies that there is very little influence

      - At the same time, however, one must also take the negative CS-coefficient into consideration

      - If the CS-coefficient approaches -1, the influence on customer satisfaction is especially strong if the analysed product feature is not fulfilled

      - A value of 0 signifies that this feature does not cause dissatisfaction if it is not met

The Kano Model – How it is Used? (cont.d)

40

- ## Developing and Administrating Kano Questionnaires (continued)
  - ○ 4. Analysing the results (continued)
    - Customer satisfaction coefficient (CS-coefficient)
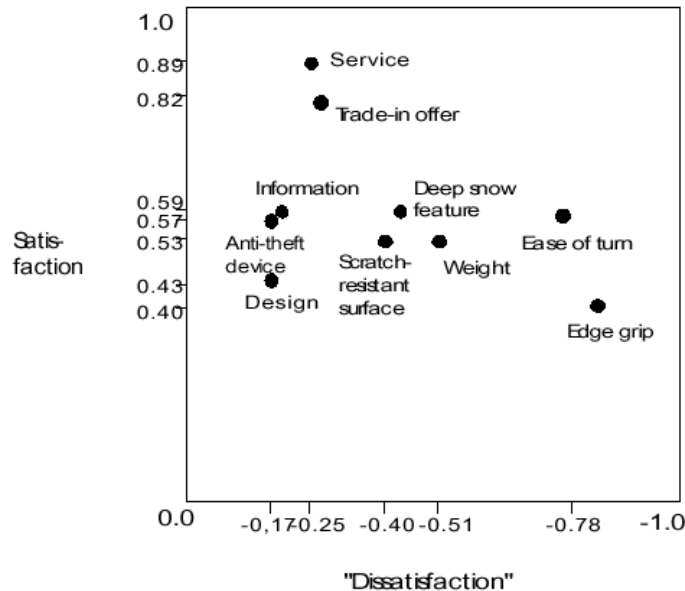
The Kano Model – How it is Used? (cont.d)

41

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - Quality Improvement Index
      - The quality of one's own product, service or process perceived in comparison to that of the strongest competitors is of prime importance for product development strategies and improvement measures
      - Thus it is useful not only to have customers evaluate one's own products but also get customers' opinion of the competitors' products
      - The quality improvement index (QI) is the ratio calculated by multiplying the relative significance of a product requirement (self-stated importance) for the customer with the gap value of the perceived product quality (own product versus competitor's product) gained from the rating scale in the questionnaire
      - QI = Relative importance x (evaluation of own product – evaluation of competitor's product)

The Kano Model – How it is Used? (cont.d)

42

- **Developing and Administrating Kano Questionnaires** (continued)
  - 4. Analysing the results (continued)
    - Quality Improvement Index
      - The value is indicative of how important the product, service or process requirement is in terms of the competition
      - The higher the value in the positive range, the higher the relative competitive advantage in the perceived product quality form the customer's viewpoint. However the higher negative value of this index, the higher the relative competitive disadvantage

The Kano Model – How it is Used? (cont.d)

43

- ## Developing and Administrating Kano Questionnaires (continued)

  - ### 4. Analysing the results (continued)

    - #### Quality Improvement Index
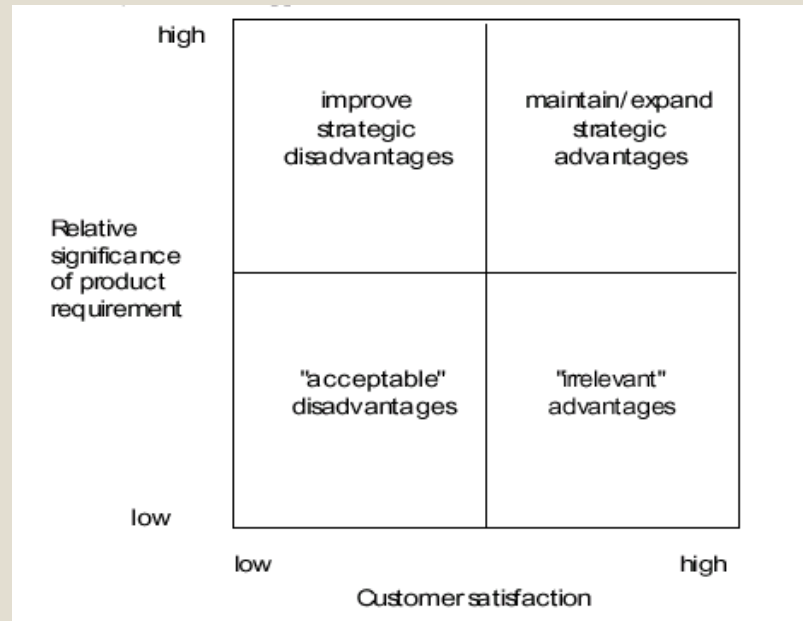
The Kano Model – How it is Used? (cont.d)

44

- Cost Category

  o Occasionally a question may appear on a Kano questionnaire that relates to price and is used to get an indication of how the respondent feels about the price relating to the product, service or process

  o Question would be typically constructed as follows:

    ✖ What percentage cost increase over current costs would you be willing to pay for this CTQ?

    ✖ 0%[ ]; 10%[ ]; 20%[ ]; 30%[ ]; 40% or more[ ]

The Kano Model – How it is Used? (cont.d)

45

- Strategic Implications

  ○ Fulfill all must-be requirements

  ○ Be competitive with regard to one-dimensional requirements

  ○ Stand out from the rest in regards to attractive requirements

- # Kano Questionnaire
  - Kano Model.xls
    - Worksheets included
      - Kano (VoC) Questionnaire (sample questionnaire sheet)
      - Kano (VoC) Answers Table (for data entry of responses)
      - Kano (VoC) Evaluation Table (evaluates results)
    - Enter data into "coloured" cells only

The Kano Model – Template (cont.d)

- ## Kano (VoC) – Questionnaire
  - This is a template which can be used for setting up to 18 questions for evaluation

- # Kano (VoC) – Answers Table
  - This is template for up to 40 customers responses to the questionnaire to be transferred into

The Kano Model – Template (cont.d)

- ## Kano (VoC) – Evaluation Tables
  - Automatically tabulates the responses and calculates the Self Stated Importance

The Kano Model – Template (cont.d)

- Kano (VoC) – Evaluation Tables
  - Automatically calculates the Customer satisfaction coefficient
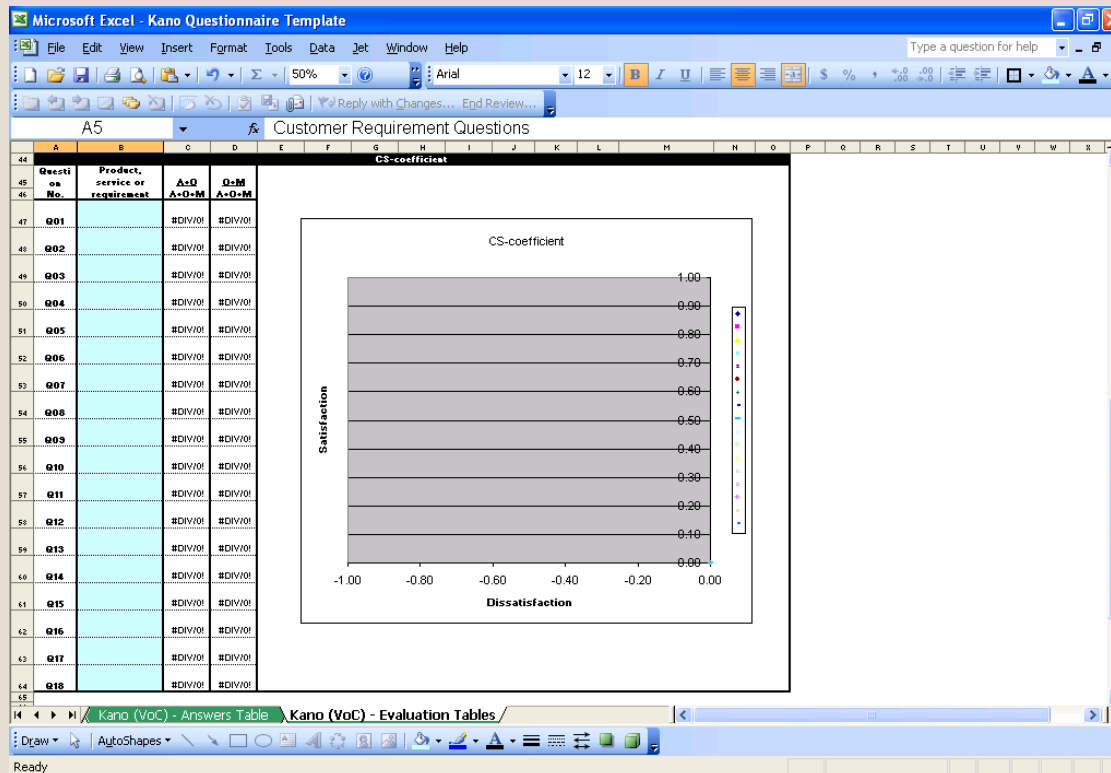
The Kano Model

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