Transcript

The Kano Model

Learning Objectives

After completing this topic, you should be able to

- *analyze survey data using the Kano model*
- *plot examples of features on a graph using the Kano model*

1. Using Kano graphs

In any project, it's typical to start out with more user stories, or required features, than a team will have the time and resources to develop. As a result, it's necessary to prioritize requirements, deciding which features the team should focus on developing first. This process isn't always an easy one.

Prioritizing required features is complex because it involves considering several criteria. For example, these include each feature's value to the customer, the cost of developing it, the risk it poses, and whether it can be released independently at the end of an iteration.

Graphic

Factors that may be considered when prioritizing features include value, cost, risk, learning, dependencies, and releasability.

Also, different stakeholders often have different perspectives. Even if it's easy to decide which product features should have the highest and lowest priorities, stakeholders may disagree about how to prioritize all the features in between.

A good way to simplify the process and make it more objective is to focus on how each required feature will affect customer or end user satisfaction with the final product.

The Kano model is a graph-based tool you can use to survey the customer or end user and determine which requirements are important to them. The results you obtain can help you make objective judgments about which product requirements should be kept and which ones aren't essential.

Often products include features that customers don't want or need, or rarely use. From an agile perspective, creating these features wastes time and resources.

By determining what customers actually want, the Kano model helps you determine the most efficient and effective ways to increase customer satisfaction while minimizing production costs.

A Kano graph illustrates the relationship between customer satisfaction and the degree of implementation of various types of features.

Graphic

An example of a Kano graph includes a horizontal axis representing Degree of implementation, which is labeled Poor on the left and Good on the right. Bisecting this at the mid-point to create four quadrants is a vertical axis representing Customer satisfaction. Running from bottom to top, the Customer satisfaction axis includes the labels Disappointed, Not unhappy, Immediate happiness, and Delight.

Customer satisfaction levels can be categorized as disappointment, neutral – or not unhappy, immediately happy, and finally, at the highest level, delight.

The degree of implementation of a feature is usually rated from poor to good.

Typically a poor level of implementation of a required feature will cause customers to be disappointed or unhappy. Conversely, a good level of implementation will cause customers to be happy with the product that's delivered. However, a Kano graph distinguishes between three types of requirements, or features – must have, linear, and exciters.

Select each type of feature to learn more about it.

Must have

"Must have" product features are basic, essential, and expected. These features have to be included for a product to be successful. Adding them doesn't improve customer satisfaction. However, failing to add them or implementing them poorly can cause disappointment or even failure.

An example of a feature in this category is windshield wipers on a car. Including wipers doesn't add to a customer's level of satisfaction with a new car – but omitting the wipers will result in dissatisfaction.

Linear

Linear features – also called performance features – have a directly proportional effect on customer satisfaction. The more there are, or the better this type of feature is implemented, the higher customer satisfaction will be.

For example, all computer monitors display images. However, the screen resolution, or image quality, of monitors varies. As quality increases, so does customer satisfaction.

Exciters

"Exciters" are features that aren't essential or expected, so customers won't be disappointed if they're not included – and adding them increases satisfaction.

Examples are complimentary bread before a meal at a restaurant, or extra applications on a mobile phone.

Question

Match each description to the corresponding type of feature.

Options:

A. Adding this feature will always increase customer satisfaction
B. Adding this feature never improves satisfaction, but leaving it out can lead to disappointment
C. The better or more this feature is implemented, the more satisfied customers will be

Targets:

1. Exciter
2. Must have
3. Linear

Answer

An exciter is a feature that customers don't expect and that will add to their satisfaction with a product.

A must have feature doesn't increase customer satisfaction because it's basic and expected. However, leaving it out may cause dissatisfaction.

The better linear features are implemented, the greater customers' satisfaction. So there's a directly proportional relationship between how well or how many of these features are implemented and how happy customers are with a product.

Correct answer(s):

Target 1 = Option A

Target 2 = Option B

Target 3 = Option C

In a Kano graph, each type of feature is represented by a curve indicating the relationship between its degree of implementation and the resulting level of customer satisfaction.

Graphic

In the Kano graph, a curve labeled "Must have" is added below the Degree of implementation axis. A straight line running from the bottom left, through the point where the two axes intersect, to the top right of the graph is labeled "Linear." A final third curve, above the Degree of implementation axis, is labeled "Exciters."

No matter how much of a must have feature you add to a product, the feature never causes customer satisfaction to rise above a neutral level – represented by the midpoint in the Customer Satisfaction axis. For this reason, the curve representing must have features is always positioned in the lower half of a Kano graph.

Graphic

The curve representing must have features begins on the bottom left of the graph. It then follows a gradual, upward arc, ending at the highest point where the degree of implementation is highest.

The curve is lowest on the left because poor implementation of a must have feature – or failure to add it – will result in low customer satisfaction. The curve then follows a gradual arc upwards because satisfaction improves with better implementation – although never past a neutral level.

Exciter features always improve customer satisfaction, so the curve for these features starts above the midpoint on the Customer Satisfaction axis. It arcs upward as the degree of implementation increases, because the better these features are implemented, the higher the level of satisfaction.

For performance features, the relationship between degree of implementation and customer satisfaction is linear. On a Kano graph, this is represented by a straight line, starting in the bottom left, crossing the point where the axes intersect, and ending in the top right.

As the product development cycle progresses, the categorization of features might change. For example, a feature that was considered an exciter in the first version of a product might become a must have feature as it becomes more common and customers come to expect it.

Question

You're planning the development of a new car model.

Match each example of a feature with its type in a Kano graph.

Options:

A. Power steering, which customers expect
B. Improved air conditioning, with automatic sensors, to increase customer satisfaction
C. A seat warming feature, which customers don't expect
D. Indicator lights, which have to be included for legal and safety reasons

Targets:

1. Must have
2. Linear
3. Exciter

Answer

Must have features are expected, as in the case of power steering, or essential, like the indicator lights. Adding them doesn't increase satisfaction, but leaving them out will cause dissatisfaction.

Linear features influence customer satisfaction directly and proportionally, based on how well they're implemented. An example is car air conditioning. The better it works, the more pleased customers are likely to be.

Exciter requirements are those that aren't required or expected – like seat warming in a car. Their inclusion always increases customer satisfaction.

Correct answer(s):

Target 1 = Option A, Option D

Target 2 = Option B

Target 3 = Option C

2. Analyzing survey data

You can use Kano questionnaires to establish how potential customers feel about the importance of including particular features in a product. Based on the responses, you can then decide which features to include so that the product you develop results in the highest possible customer satisfaction.

Generally it's best to ensure that at least 20 to 30 customer representatives complete a Kano questionnaire. Using a larger sample of customers helps ensure that the sample is representative of your real customers, and so improves the accuracy of the results. It also makes it easier to identify trends and themes.

A Kano questionnaire can include two question types - functional and dysfunctional.

Select each question type for more information about it.

Functional

A functional question aims to establish how customers would feel if a certain function or feature was included in a product. For example, you might ask customers how they'd feel if a holiday package was included a particular sightseeing tour.

Dysfunctional

Dysfunctional questions ask how customers would feel if a particular function or feature was left out of a product. For example, you might ask customers how they'd feel if a holiday accommodation package didn't include breakfasts in the price.

For each question in a Kano questionnaire, customers should be able to choose from multiple options. Five variations of possible responses are typically included:

- I like it this way
- I expect it to be this way
- I'm neutral about this
- I can live with it this way, and
- I dislike it this way

Once customers have answered both the functional and dysfunctional questions about a feature, you can plot the results in a grid. This can help you determine and analyze customers' overall reactions. For example, maybe most customers answered that they would expect a feature to be included, and that they would dislike it if the feature wasn't included.

Graphic

A grid contains five columns – Like, Expect, Neutral, Live with, and Dislike – and five rows with the same headings. The columns are labeled Dysfunctional question and the rows are labeled Functional question. Blocks where the columns and rows intersect are labeled M for must have, L for linear, E for exciter, R for reverse, Q for questionable, or I for indifferent.

Based on the combination of results, each feature can be categorized as either a must have, linear, exciter, reverse, questionable, or indifferent feature.

Select each type of feature to learn more about it.

Must have

Must have features are those that customers want and expect. You can represent them in the grid using the letter M.

Linear

Linear features will have a direct influence on customer satisfaction in relation to how well they are implemented. They're represented by the letter L.

Exciter

Exciter features aren't expected but will add to customers' satisfaction if they're included. They're represented by the letter E.

Reverse

Reverse features aren't wanted, and including them will decrease customer satisfaction. You can represent them in the grid using the letter R.

Questionable

Features are marked as questionable if it's not clear how their inclusion is likely to affect overall customer satisfaction. Questionable features are represented by the letter Q.

Indifferent

Indifferent features are those that customers aren't really concerned about. They don't mind whether these features are included or left out. Indifferent features are represented by the letter I.

To assess the importance of including each feature, you tally customers' responses in each category. For example, what percentage of customer responses indicate that the feature is in the must-have category, and what percentage is in the questionable category? Then you can determine where the majority of responses fell.

Graphic

A grid includes six columns labeled M, L, E, R, Q, and I, and rows labeled Feature 1, Feature 2, Feature 3, and so on.

Once you've done this for each feature, you can rank all the features based on their importance to customers. A development team should prioritize must have features, followed by linear and then exciter features. Indifferent and questionable features should be given low priority, and reverse features shouldn't be included at all.

As an example, you use a Kano questionnaire to determine how a group of potential customers feel about three possible features of a new web browser. You then record the results in a table.

Graphic

The table includes a set of six columns – M, L, E, R, Q, and I – and a row for each of the three features - Page refresh, Automatic bookmarking, and URL autofill. A different score appears in each cell. For example, the M column contains the value 68.5 for the Page refresh feature, 0.0 for the Automatic bookmarking feature, and 38.5 for the URL autofill feature.

To interpret the results, you determine which category scored the highest for each feature.

Graphic

The highest score for the Page refresh feature is 68.5 for must have, the highest score for the Automatic bookmarking feature is 77.5 for reverse, and the highest scores for the URL autofill feature is 38.5. The next highest score for the URL autofill feature is in the E column, and is 37.0.

For example, the highest score for the Page refresh feature is in the column marked M, for must have. In this case, 68.5% of those who answered questions about the feature indicated that it's in the must have category.

Graphic

The M column for the Page refresh feature contains the value 68.5.

The majority of customer responses identified the Automatic bookmarking feature as a reverse feature.

Graphic

The highest score for the Automatic bookmarking feature is 77.5, in the column marked R.

And 38.5% of the customers who answered the questionnaire indicated that the URL autofill feature is a must have feature. A similar number of customers – 37% – saw this as an exciter feature.

Graphic

The highest score for the URL autofill feature is 38.5 in the column marked M. The next highest score for the feature is 37.0, in the column marked E.

Based on the results, an agile team should prioritize developing the Page refresh feature. It should give fairly high priority to the URL autofill feature, and it should completely omit the automatic bookmarking feature – which customers have indicated will detract from their satisfaction with the web browser.

Question Set

You've can use a Kano questionnaire to determine which features to include in a new mobile phone.

Question 1 of 2

Question

Most customers chose the response "I expect it to be this way" when asked if they wanted texting abilities included in the mobile phone, and "I would dislike it this way" if the feature were not included.

What type of feature is this?

Options:

1. Must have feature
2. Linear feature
3. Exciter feature
4. Reverse feature
5. Questionable feature
6. Indifferent feature

Answer

Option 1: *Correct. Texting is an expected feature of a mobile phone and customers would be dissatisfied if it were left out, so this is an example of a must have feature.*

Option 2: *Incorrect. Linear features influence customer satisfaction in relation to how well they're implemented. Customers don't necessarily expect that this type of feature will be included.*

Option 3: *Incorrect. Although exciter features boost customer satisfaction, customers don't expect them and so won't be disappointed if they're not included.*

Option 4: *Incorrect. Customers don't want reverse features to be included in a product.*

Option 5: *Incorrect. It's not clear whether customers do or don't want features classed as questionable to be included in a product.*

Option 6: *Incorrect. Indifferent features are those that customers have no real opinion about. They don't particularly care whether or not these features are included in a product.*

Correct answer(s):

1. Must have feature

Question 2 of 2

Question

You've recorded customers' responses to the questionnaire in a table.

Based on the results in the learning aid, Customer Responses, match each feature to the priority level that you should assign it.

Options:

A. Texting
B. Internet access
C. Predictive text
D. Camera
E. Clock screensaver

Targets:

1. Top priority
2. Second highest priority
3. Third highest priority
4. Lowest priority

Answer

In this case, the highest score for the texting feature is in the M, or must have, column. Must have features should be assigned top priority because they're vital to the success of the product.

The predictive text feature scored highest in the column marked L, for linear. Linear features should be assigned the second-highest level of priority, after must have features, because they have a direct and significant influence on customer satisfaction.

Both Internet access and the camera scored highest in the column marked E for exciter. Exciter features should be assigned the third level of priority. Adding them will increase customer satisfaction, but they're less important than must have and linear features because leaving them out won't cause disappointment.

The clock screensaver should be assigned the lowest priority because the majority of customers are indifferent about it.

Correct answer(s):

Target 1 = Option A

Target 2 = Option C

Target 3 = Option B, Option D

Target 4 = Option E

Summary

The Kano model can help you determine which features to prioritize, based on the relationship between their degree of implementation and customer satisfaction. Kano graphs illustrate three types of features - must have, linear, and exciters. Must have features are expected or essential, and adding them doesn't improve customer satisfaction. The effects of performance features on customer satisfaction depend on how the features are implemented. Exciter features are unexpected and always increase satisfaction.

You can use both functional and dysfunctional questions in Kano questionnaires to determine which features are important to customers. Based on the responses, you can categorize features as must have, linear, exciter, reverse, questionable, or indifferent.

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