

Product Management and Strategy

Module 2: Customer-Driven Products

Quick Reference Guide

Learning Outcomes

1. Identify baseline standards of waterfall and phase-gate development processes.
2. Analyze the design thinking approach to the development process using the triple diamond model.
3. Apply the use of the abstraction ladder to complete a jobs analysis.
4. Conduct a customer interview.
5. Generate customer insights.
6. Compare the relation of the design thinking process to conventional market research techniques.
7. Evaluate how the concept of customer-driven development processes is applied in practical settings.

Two Types of Innovation

An innovation is defined as a new match between a solution and a need. There are two approaches to innovation—the push and pull approach to innovation. There are three conditions an innovation must hold to create substantial value:

- The need must be real
- The solution has to make the pain go away
- The organization must have sufficient alpha assets to sustain competitive advantage

Factors in push approach:

- Innovator fails to consider all the possible solutions for the need that is identified
- Innovator starts with an existing solution and often only considers whether the solution will meet the need of the target market
- It is important to consider how a competitor would approach the identified need.

Factors in pull approach:

- Innovator considers a better approach to coming up with solutions compared to push approach
- Yields better results

The Zero-to-One Product Development Process

Zero-to-one product development is the creation of a new product, often from nothing. This is one of the key roles in product management.

Features of the zero-to-one product development process:

- It is a codification of the collective expertise of thousands of developers
- It informs the team what to do and ensures that no critical step is left out
- It allows relative novices to benefit from the learning of others

The zero-to-one product development process involves the following steps:

1. Clarify the job to be done
2. Understand the needs of the customer
3. Create a great concept for a solution
4. Specify the details with sufficient clarity so that the solution can be delivered reliably and repeatedly to customers

This process pulls from the customer needs to create a solution.

Phase-gate/stage-gate/waterfall process

The zero-to-one development process is further elaborated into a phase-gate/stage-gate product development process:

- Phase: It comprises a set of development tasks
- Gate: It verifies the tasks have been completed before moving on to the next phase

A phase-gate process is often called a waterfall process because information cascades in one direction, i.e., from the “what” to the “how”.

Different phases of the phase-gate/stage-gate/waterfall process:

- Mission statement- This phase includes:
 - Definition of the target market
 - Identification of a persona or representative customer in that market
 - Articulation of the job to be done
 - Competitive analysis and goals for how the new product will be differentiated
- Product requirements- This phase includes the creation of a product requirements document, or PRD, which consists of a list of customer needs and a set of target performance specifications.
- Concept development- This phase involves:
 - Documentation of the concept alternatives
 - Concept selection analysis
 - Results of concept testing with potential customers
- System-level design- This phase establishes:
 - The product architecture
 - The major chunks of the product and the interfaces among them
 - An analysis of the chunks
- Detailed design- This phase results in component design and specification, prototyping and testing of the chunks, and key sourcing decisions
- Quality assurance and testing- This phase comprises both internal and external testing to verify performance, test customer satisfaction, and to identify bugs

- Launch- This phase includes ramping up production and sales while assuring early customer success.
 - For hardware products: There is a significant parallel set of supply chain and production planning activities to ramp up the supply of the physical product
 - For service products: A pilot is often conducted

Features of the waterfall process:

- In any specific organization, the phases in the process are often represented as columns in a table
- The tasks, responsibilities, and key deliverables for each function within the organization are shown as rows.

Agile development

Agile development is an alternative process that is very common. In Agile development, the team:

- Rank-orders the desired features of the system
- Builds and tests the features a few at a time organized into short sprints, usually for two weeks
- Includes additional features with subsequent sprints, a few at a time

In an Agile process:

- The team is assured that it always has something working
- The flexible element of the effort is the scope of features that are eventually built, not the time allocated to complete the product
- There is continual feedback on early versions of the product, which allows the development process to be responsive to new and emerging information

Once a software or service product exists, the refinement and improvement of the product over its life cycle is highly suitable for an Agile process.

Design, Concept Development, and the Triple Diamond Model

All design processes are a sequence of steps that begin with some articulation of the “what” and result in some description of the “how”. Design is the core problem-solving approach within the product development process

Triple diamond model

The three diamonds correspond to three steps:

1. Clarify the job to be done in a jobs analysis
2. Understand the needs of the customer or user
3. Create a great solution concept.

In practice, a fourth phase is important — Implementing the concept so that organization can deliver the solution. This involves writing the code, designing the parts, and planning for production.

Features of the triple diamond model:

- The three diamonds each represent a cycle of divergent and convergent thinking
- For each diamond, the designer explores alternatives and then focuses
 - The first diamond starts with a target customer and the gap or pain point and results in a carefully considered reframing of the design problem in terms of a job to be done. Problem definition is one of the critical elements of an effective design process.
 - The second diamond begins with a job to be done and develops a comprehensive understanding of the customer needs which are those aspects of a solution that could result in satisfaction. The convergent portion identifies insights which are important customer needs that were previously not known.
 - The third diamond uses the customer insights from the second diamond and pulls solution concepts, and then selects one or a few for further refinement and testing.
- It focuses on the concept development process, but when the team proceeds to build the product based around a concept, it will almost certainly use additional cycles of divergent and convergent techniques to solve downstream problems.
- For established systems, the triple diamond model is unlikely to be applied to the entire product or suite of products, but rather more likely to a feature within that more complex product.

Problem Solving, Design, and Design Thinking

What is design thinking?

Design thinking is the design of things one does not usually think of as designed.

Designers' elements of design:

1. Designers exhibit a bias for action
2. Designers tend to be optimists, exhibiting a culture of “yes”
3. Designers tend to use exploratory prototypes early in the problem-solving process
4. Designers tend to be skilled at visual expression
5. Tend to use empathic methods for understanding customers

Design as an approach is fundamentally divergent and open-ended in its perspective on addressing user needs.

Diamond 1 — Focal Customer

There are two concepts which are useful in identifying the focal customer. They are:

1. Identify the beachhead market.
 - The first group of customers you target

- The best beachhead markets are those with the biggest need, the most acute pain point, and are easily reachable
 - These markets are usually not the biggest markets
 - Be clear about the market segment you are addressing
2. Building the persona
- A description of a hypothetical customer
 - It is highly representative of your target market
 - It is useful in making the challenge real to your team
 - It is usually constructed with specific attributes like age, gender, professional role, and personality characteristics

Effects of building a persona:

- Your target segment might change.
- After launching your product:
 - You will discover that there are other customer segments that your product can address.
 - You will expand into adjacent segments. Specificity guides the design process.

Is it good practice to use yourself as a target customer?

- You will find many situations in which you, as product leader, are not the target customer.
- When you are representative of your target market, you are likely to create a product that satisfies at least one customer — you.

Challenges in product development:

- It's a luxury in product development to have an immediate intuition about whether a solution is near the mark or not.
- You represent one data point, and in most cases, you aspire to serve a larger group of customers.
- Disciplined and experienced product leaders can leverage their own deep intuition about the job to be done and can assume the perspective of the broader market for long-term product success.

Diamond 1 — Jobs Analysis and the Abstraction Ladder

Abstraction ladder is a technique for elaborating the alternative ways you could state the design problem. It is used for divergent thinking to consider alternative ways you could frame the job to be done. Points to keep in mind:

- When you set out to create or improve something, it's motivated by a gap you and your organization have sensed; you own that gap.
- If you embark on a process to design something that improves the well-being of individuals in society and it does so, but it does not achieve your organizational goal, then you have failed in your specific role.
- You have to make sure that if the job to be done as stated is actually done, your specific organizational goal is addressed.

Step-by-step jobs analysis are as follows:

1. State the problem using the phrase, “How might we...”
2. Ask, “What desirable outcome would be achieved if that problem is solved?” and use that desirable outcome as the foundation of a second more abstract problem statement
3. Repeat step 2 until the problem statement is the most abstract possible motive for solving the problem
4. Converge. Deliberately choose the most abstract statement of the problem that, if addressed, would be recognized as achieving your organizational goals. That statement is the job to be done.

Diamond 2 — Understanding Customer Needs

The two key goals of the second diamond are:

- Comprehensively catalog your customers’ needs.
- Identify one or two latent needs — important but not yet addressed in the marketplace.

What are customer needs?

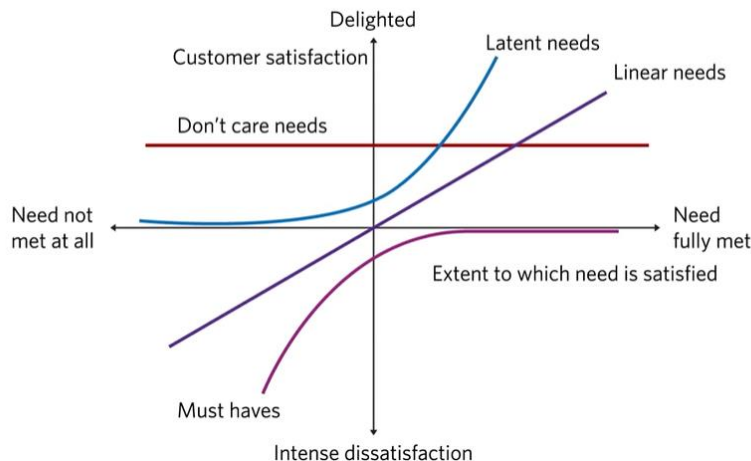
For any given job to be done, customers will have a set of 30 to 50 distinct needs, attributes of a potential solution that, if provided, will result in greater satisfaction. These needs vary across individuals. The full list of customer needs is important for the ultimate product design. It is also common to use more formal quantitative customer research tools to understand which needs are most important across different market segments and the relative importance of same price and convenience for a particular segment.

On the contrary, in the triple diamond model of design, the goal is the development of a compelling solution concept. For this development, an initial exploration of customer needs will be done to understand an insight.

What Is an Insight?

Insight refers to a user need that is authentic, non-obvious and significant. Authentic means that the insight is based on an actual observation of users in the target market. Significant means that if your solution addresses the need, it will result in a meaningful enhancement in the value perceived by the customer.

Kano diagram



Kano diagram is a framework which illustrates the customer needs in four categories. The horizontal axis is the extent to which the need is satisfied by the solution, whereas the vertical axis is the resulting change in customer satisfaction or perceived value of the solution.

- Don't care needs: Needs that are irrelevant to the customer
- Linear needs: Needs where the customer satisfaction is directly proportional to the extent to which your solution addresses the need
- Must haves: Needs which, if fully addressed, do not result in dramatic improvements and satisfaction. However, if these needs are not addressed then it will result in extreme dissatisfaction.
- Latent needs: Needs that if unaddressed, they are not missed. However, if addressed then it will result in surprise and delight.

How to Conduct Customer Interviews?

Ways to identify customer needs:

- Interact with customers first-hand
- Conduct at least 10 one-on-one interviews for each distinct market segment

In most cases, only 10 interviews are required to identify at least 90 percent of customer needs.

Recommendations for conducting customer interviews:

- Identify around 10 customers for each market segment.
- Conduct the interviews either alone or along with a partner.
- Use an audio recording device — notes are just as effective.
 - Sometimes, taking photos or video clips can be helpful in reporting on the interviews and remembering the specifics
- Conduct the interviews in the customers' use environment.
 - With this approach, it is easier to develop an entirely different and better understanding of the customer if you observe and listen to them in an environment in which they are comfortable in.
- Plan for around an hour of unstructured conversation.

- Ask the customer to ‘show you’ instead of ‘tell you’ with regards to the question, whenever possible.
- Debrief. After the interview, revisit the conversation with your partner and identify the customer needs.
- Work to identify the customer needs that can be considered as insights.