Workshop 2:
Identifying Customer Needs

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Product/Service development Process

- Second Workshop is about the methods for identification and analysis of customer needs

- the concept development process which begins the overall product development process

- So first let's take a look at what is that PD, product development process,

- and how does it take place over stages in professional practice?

Product/Service development Process

- Now what you saw with IDEO, we sort of simplified the process by saying it was three phases.

- In practice most businesses and industry use a four or even a six phase process.

- So here's a typical or generic one, it starts with a planning phase which really precedes the entire product development process.

Product/Service development Process

- The first phase is about concept development.
- It is decomposed into pieces and functions each one executes
- Now, how we plan the development of all those pieces.

| Planning | Concept Development | System-level design | Detail Design | Testing and Refinement | Production Ramp-Up |

Planning:

- Precedes the entire product development process
- Involves conducting strategic analysis based on corporate strategy
- Involves decision making, based on the strategic analysis
- Involves the creation of a map / portfolio of projects to be executed

Concept Development:

- Product development starts with the concept development
- Developing a solution concept

Product/Service development Process

Concept development

- So that begins with what comes out of the planning process
- a mission statement
- and then it ends with a really good list of customer needs
- Then we translate the customer needs to target specs
- Target specs into measurable terms
- We cannot know what we will deliver until the concept development phase is done

Concept Development Process
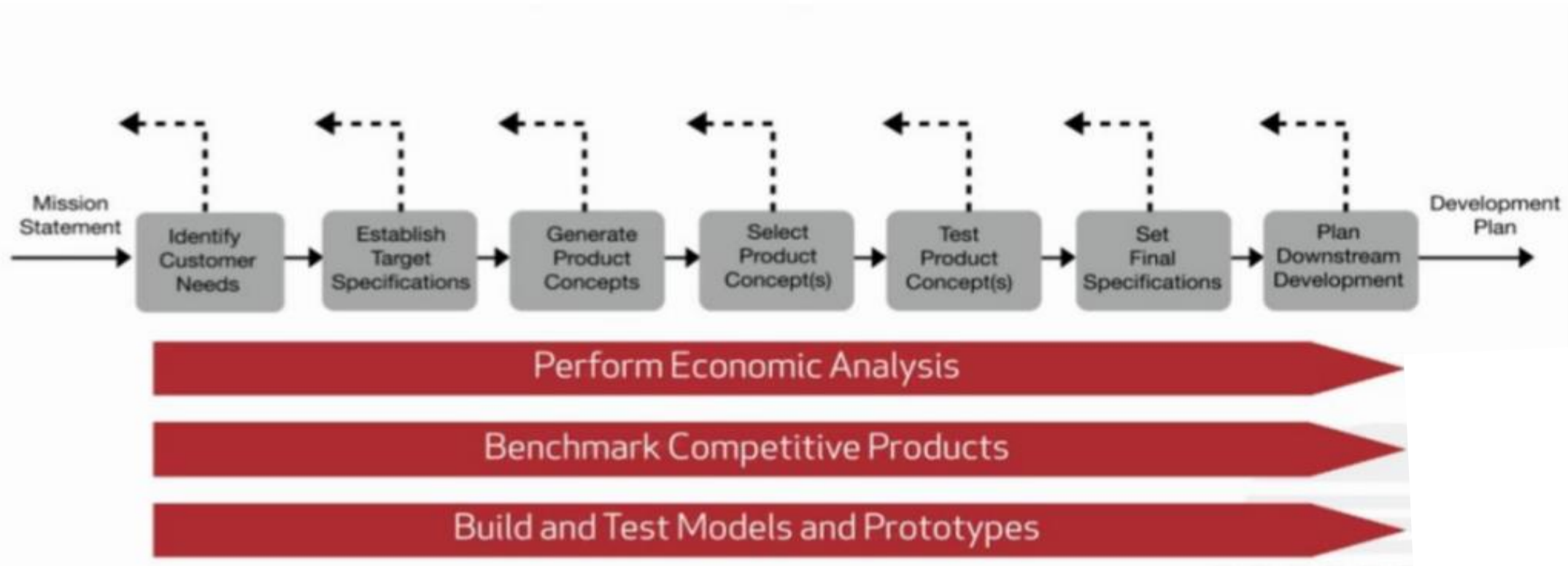
Concept Development- Common Activities Across

- there are three activities which take place throughout the development process.

- And these include performing the economic analysis so that's looking at the cash flows and the potential pay back and we'll look at that very carefully in the last module.

- Second, benchmarking which happens really at many times through the process. Early on we look at competing products to see if this is a reasonable opportunity.

- We'll do benchmarking when we're looking at competing products to understand how they address customer needs. We do benchmarking when we're looking at specifications and even when we're developing solutions.

Concept Development- Common Activities Across

- And then finally building and testing models and prototypes happens at many points through the process.

- So that we can refine our ideas and figure out which ones work and how they don't work

- and how to fix those problems.

- So these activities take place throughout the development process.

User Innovation Examples

- connection with customers is obviously a key aspect of customer needs analysis

- And one type of innovator has a distinct advantage: the user innovators

- So these two fellows, Evan and Eric Edwards, when they were young boys they had a, some kind of severe allergies where they always had to be carrying this product right here, it's called an EpiPen. It's an epinephrine injector that they would use if they ever had a severe reaction to something they eat or something in the environment.

User Innovators

Users have a good connection with the problem because they themselves experience it

Connection with customers is a key aspect of customer needs analysis

Through observation, we can identify latent needs of customers and that's one of the principles of understanding customer needs

Users may not always have the skills or resources to solve the problem, which is why we need businesses

Auvi-Q Epinephrine Injector

OXO Measuring Cup

Black & Decker Snake Light

User Innovation Examples

Snake Light

- How does Black and Decker come up with this?
- I would argue that if you asked customers about their experience with flashlights they would talk to you about the obvious needs.
- The brightness of the beam, how long the batteries last, the size, the weight of the light and so forth.
- But articulating their need to aim the flashlight might not ever come out in a conversation with customers.
- On the other hand, with good thorough observation I'm sure that you would experience customers having a difficult time aiming the flashlight beam.
-

Customer Needs and Markets

- to analyze customer needs we need to understand that there are different markets or segments of customers.
- Generally we think of the mainstream customers, the big market segment.
- This chart now shows how as -- how different markets have different needs.
- So the mainstream customers, well, they're mainstream, they're the biggest segment because they have a common set of needs.

Customer Needs and Markets

- A large group of people with the same needs.
- And it's natural to look at that market and try to address those needs, and we should do that.
- But I'd like to also argue that there are two special types of customers
- who have more specific sets of needs, and if we can understand their needs we can get a real advantage.
- And these types of customers are called lead users and extreme users. And I'll describe each of them.

Customer Needs and Markets
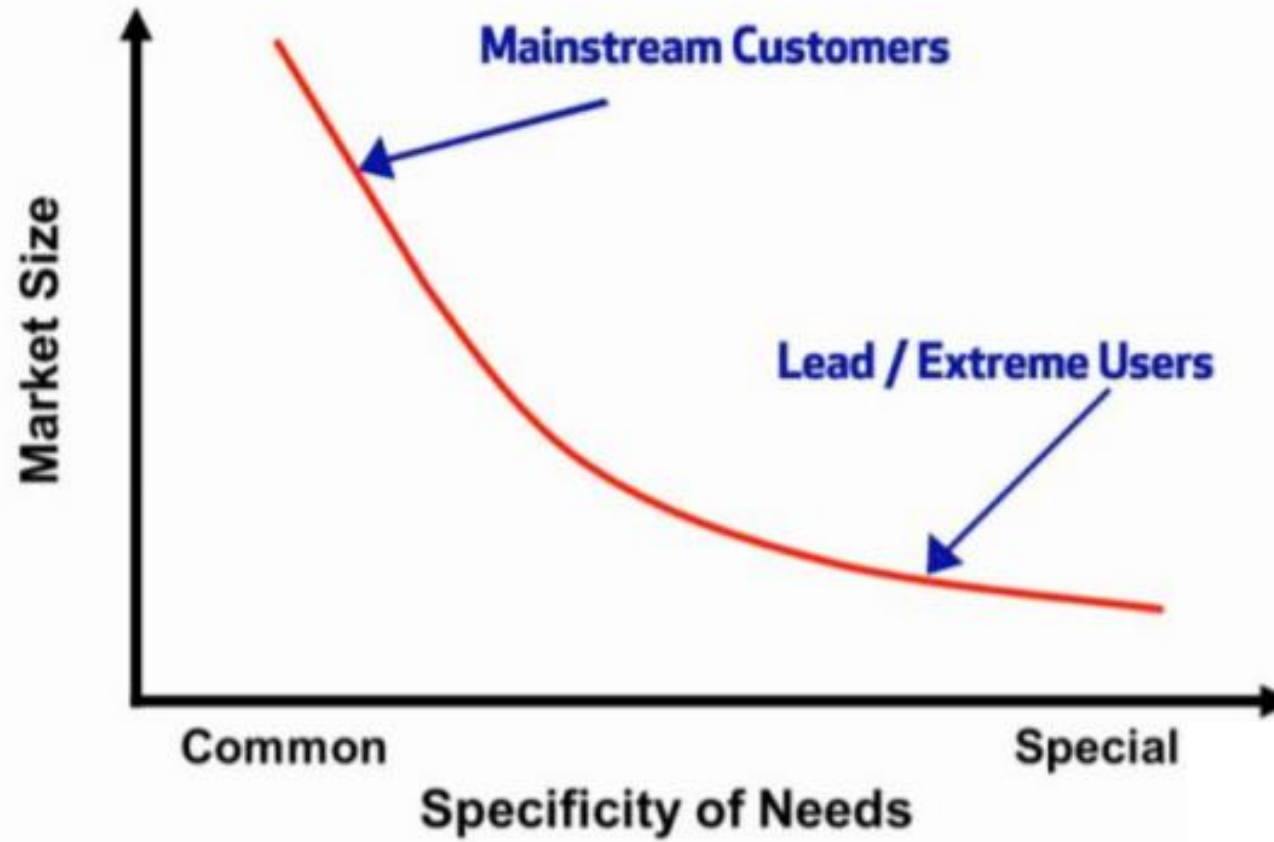
Lead Users

1. Experience needs ahead of mainstream customers
   - Use products in their daily lives / business
2. Benefit from product improvements
   - Get extra value if their needs are addressed
3. Are more likely to have innovated than other customers
   - Can teach us about innovations that are useful to them
   - Can help us identify interesting solutions
   - Can help us identify customer needs sooner

Extreme Users

1. Utilize products differently
   - Have special needs
2. Can help us identify solutions to their problem through observation
   - Benefits the main stream market
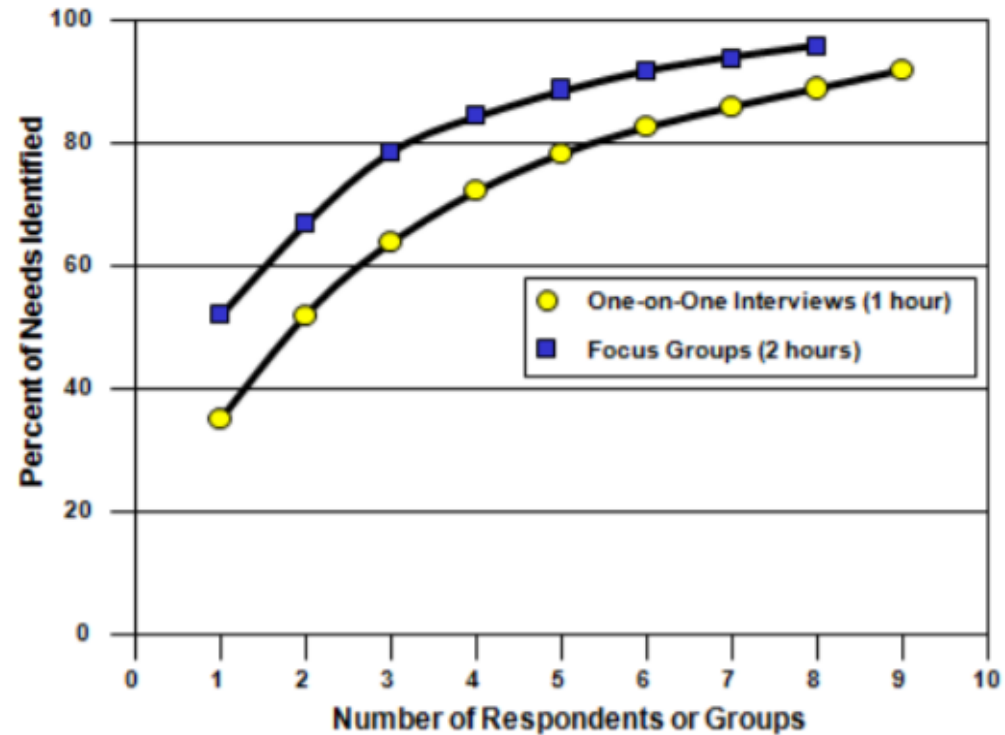
Innovation Made by a Lead User

Utility Light Study

Study @ MIT

How many customers do we interact with, to be able to identify all of the customer needs

From: Griffin, Abbie and John R. Hauser. "The Voice of the Customer", *Marketing Science*. vol. 12, no. 1, Winter 1993.

Latent Needs

- Are hidden needs that customers may not be aware of

- Are not easily expressed

- Are hard to understand by talking to customers

When latent needs are addressed, products may delight and exceed customer's expectations

Customer Needs Analysis - Five Steps Process

List of Customer Needs

** **The thermostat is easy to install.**
*** The thermostat works with my existing heating and/or cooling system.
** The thermostat installation is an easy do-it-yourself project for a novice.
** The thermostat can control separate heating and cooling systems.
* The thermostat can be installed without special tools.
The thermostat is easily purchased.

* **The thermostat lasts a long time.**
The thermostat is safe to bump into.
The thermostat resists dirt and dust.
! The thermostat exterior surfaces do not fade or discolor over time.
The thermostat is recyclable at end of life.

*** **The thermostat is easy to use.**
** The thermostat user interaction is easy to understand.
* The thermostat is easy to learn to use.
* The thermostat does not place significant demands on user memory.
! The thermostat can be programmed from a comfortable position.
The thermostat can be controlled remotely without requiring a special device.
! The thermostat works pretty well right out of the box with no set up.
The thermostat's behavior is easy to change.
The thermostat is easy to control manually.
The thermostat display is easy to read from a distance.
The thermostat display can be read clearly in all conditions.
The thermostat's controls accommodate users with limited dexterity.
The thermostat accommodates different conventions for temperature scales.
The thermostat accommodates different preferences for representing time and date.

** **The thermostat controls are precise.**
** The thermostat maintains temperature accurately.
The thermostat minimizes unintended variability in temperature.
The thermostat allows temperatures to be specified precisely.

*** **The thermostat is smart.**
*** The thermostat can adjust temperature during the day according to user preferences.
** The thermostat can be programmed to a precise schedule.
! The thermostat automatically responds to occupancy.
! The thermostat prevents pipes from freezing in cold months.
The thermostat alerts the user when a problem arises.
The thermostat does not require users to set time or date.
The thermostat adjusts automatically to the seasons.

* **The thermostat is personal.**
* The thermostat accommodates different user preferences for comfort.
The thermostat accommodates different user preferences for energy efficiency.
The thermostat controls are secure from unauthorized access.
The thermostat provides useful information.

*** **The thermostat is a good investment.**
** The thermostat is affordable to purchase.
*** The thermostat saves energy.
* The thermostat tracks cost savings.

** **The thermostat is reliable.**
The thermostat does not require replacing batteries.
The thermostat works normally when electric power is suspended.

Primary Needs

Latent Needs

Secondary Needs

Importance Ratings

Five Guidelines for Writing Need Statements

DESIGN THINKING

Guideline	Customer Statement	Needs Statement - Right	Needs Statement - Wrong
1. "What" not "How"	I would like my iPhone to adjust my thermostat.	The thermostat can be controlled remotely without requiring a special device. ✓	The thermostat is accompanied by a downloadable iPhone app. ✗
2. Specificity	I have different heating and cooling systems.	The thermostat can control seperate heating and cooling systems. ✓	The thermostat is versatile. ✗
3. Positive not Negative	I get tired of standing in front of my thermostat to program it.	The thermostat can be programmed from a comfortable position. ✓	The thermostat does not require me to stand in front of it for programming. ✗
4. An Attribute of the Product	I have to manually override the program if I'm home when I shouldn't be.	The thermostat automatically responds to an occupant's presence. ✓	An occupant's presence triggers the thermostat to automatically change modes. ✗
5. Avoid "Must" and "Should"	I'm worried about how secure my thermostat would be if it were accessible online.	The thermostat controls are secure from unauthorized access. ✓	The thermostat must be secure from unauthorized access. ✗

Thank You :)