

Steps in the Opportunity Identification Phase

- 1. Defining the New Product Strategy
Product Innovation Charter
- 2. Market Definition
Understanding Market structure from a customer need perspective
 - Identification of Markets
 - Selection of Markets

- 3. Idea Generation
Understanding of Customer problems and needs in the selected markets

Where do new product ideas come from?

Lets not underestimate the oops... factor

- Microwave oven
- Aspartame (NutraSweet)
- ScotchGaurd Fabric Protector
- Teflon

But did it have to be so?

Could 3M have deliberately come up with Post-Its?

Customer Needs Process

- Define the Scope (PIC) }
- Gather Raw Data
 - What?
 - From Whom?
 - How ?
 - How Many?
- Interpret & Organize Raw Data
 - Hierarchy of Needs
- Establish Importance
 - Surveys
 - Quantified Needs
- Reflect on the Process
 - Continuous Improvement

Gather Data

What, From Whom & How?

What?

- Problems vs. Needs
- Articulated (Explicit) Needs
 - Customers know product features, have well-formed preferences on features, can verbalize their preferences
- Unarticulated (Implicit or Latent) Needs
 - Customers do not understand product features and benefits, do not have well-formed preferences on features, lack vocabulary/desire to express preferences and emotions

From Whom?

- Experts
- Published Sources
- Contacts with Your Business Customers or Consumers

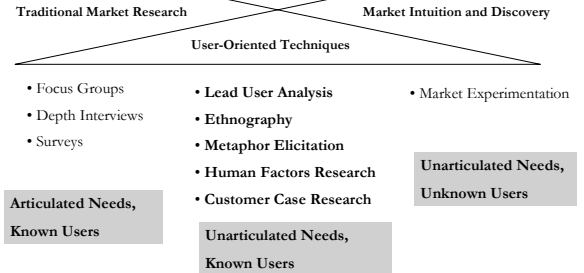
How?

- Group Creativity Methods/Brainstorming
- Triangulate what
 - customers say (Focus groups, Surveys, Depth interviews),
 - do (Observation, Ethnography, Human Factors Research, Customer case research),
 - and make (Collages, Metaphors, Lead Users)

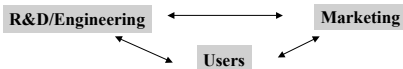
Problems to Needs Cordless Screwdriver

Guideline	Customer Statement	Need Statement- <u>Wrong</u>	Need Statement- <u>Right</u>
Specificity	"I drop my screwdriver all the time."	The screwdriver is rugged.	The screwdriver operates fine after repeated dropping.
Positive Not Negative	"It doesn't matter if it's raining, I still need to work outside on Saturdays."	The screwdriver is not disabled by the rain.	The screwdriver operates normally in the rain.
Attribute of the Product	"It is a nuisance to keep going back in the house to charge my battery."	The screwdriver battery can be charged from an automobile cigarette lighter.	The screwdriver battery can be charged from a source outside the house
Avoid "Must" and "Should"	"I hate it when I don't know how much juice is left in the batteries of my cordless tools."	The screwdriver should provide an indication of the energy level of the battery.	The screwdriver provides an indication of the energy level of the battery.
What Not How	"Why don't you put protective shields around the battery contacts?"	The screwdriver battery contacts are covered by a plastic sliding door.	The screwdriver battery is protected from accidental shorting.

Techniques to understand user needs



Lead user analysis: End-users as innovators



Lead Users - users as innovators:

- Face needs that will be commonplace in a marketplace - but face them **before** the bulk of the marketplace encounters them or in a more intense way than the bulk of the market
- Have a strong economic motive to innovate, since they expect to benefit significantly by obtaining a solution to their needs.

Steps in a lead user analysis study:

- Specify lead user indicators (trends, user benefit characteristics).
- Identify sample of lead users.
- Conduct lead user concept generation workshop.
- Test appeal of lead user concepts with ordinary users.

Ethnography

Observe customers in their *native surroundings* to understand unarticulated needs.

What it Entails:

- Observation of *actual* behavior
- Interactions between *developers and customers*
- Exploitation of *existing technological capabilities*

When It Works Best:

- When developers are proposing solutions for an *identified potential user population*, whose needs are poorly understood.

What to watch out for:

- Time consuming, costly, serendipitous.
- Immersing vs. drowning!

Tapping nonverbal channels: Zaltman Metaphor Elicitation Technique

ZMET (Zaltman Metaphor Elicitation Technique):

- Probe attitudes and feelings of individuals relative to specific subjects deeply and systematically through the use of *metaphors* and *visual images*.

Hypothesis:

- Better understanding of the voice of customers requires research tools that engage their nonverbal (especially visual) channels of thought and communication.

Method:

- Clip magazine pictures, take photographs, generate collages.
- Use metaphors from a library on a multimedia system.

Drawbacks:

- Interpretation and analysis requires great skill, very subjective.

What Human factors designers do

- Think about *types of people* who will use the product
- Think about the different *steps* in using the product
- **Observe** people actually doing things.
- **Create stories** that define a usage context and steps.
- **Test** and debug.
- **Ask experts** who know about human abilities.

Customer case research

CCR is a form of exploratory research that uses interviews and observation to trace the full stories of how real customers buy, use, and consume products. CCR can uncover hidden purchase drivers and inhibitors, including:

- Unexpected openings
- Embedded segments
- Unanticipated decision criteria
- Hidden decision makers
- Unintended product uses
- Unseen obstacles to purchase

Summary: When to use what?

Lead User Analysis

- Sophisticated and innovative customer segment exists
- Innovations have often come from users in the past.

Ethnography

- Customer population is well-defined
- Usage experience is complex and difficult to articulate
- Usage is embedded in situational and environmental context

Metaphors and Analogies

- New product domain is unfamiliar, but users have deep tacit knowledge
- Breakthroughs and unconventional products are desired

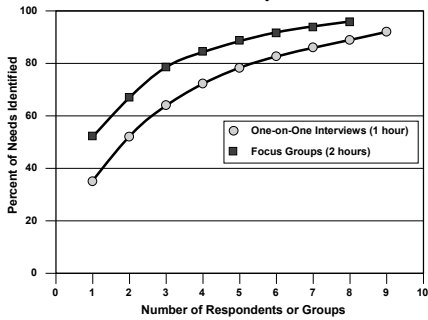
Human Factors Research

- Man-machine interface is unfamiliar, complicated or inconvenient
- User segments are diverse and user profiles poorly understood

Customer Case Research

- Ownership and usage experience involves many steps and involves many different product and service providers.
- Strange or unusual customer behavior is detected.

Gather Data How Many?



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

Interpret and Organize the Data The Kano model

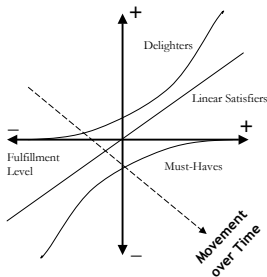
The nonlinear relationship between *need fulfillment* and *customer satisfaction* results in a three-way classification of product features as customer need satisfiers:

Delighters: Can only have positive satisfaction, absence does not hurt. "Surprise and Delight" features. Basis for "attractive quality" and customer loyalty.
(Cap holders, folding mirrors, 2/3 split-fold seats).

Linear Satisfiers: Performance factors, basis for competition.
(Engine horsepower, fuel economy, interior room).

Must Haves: Presumed present, can never make customers happy, but absence below expected level hurts. "Price of entry".
(Air bags, automatic transmission, rust-resistance).

Interpret and Organize the Data Using the Kano model



Two Questions to Ask:

Positive Question: If X were present, how would you feel?

Negative Question: If X were not present (was absent), how would you feel?

- LIKE: I like it that way
- MUST: It must be that way
- NEUTRAL: I am neutral
- LIVE WITH: I can live with it that way
- DISLIKE: I dislike it that way

Needs to Attributes: An Idea Stimulator Checklist

- Can the dimensions be changed? (*larger, smaller, longer, shorter, thicker...*)
- Can the quantity be changed? (*more, less, combine, fractionate...*)
- Can the order be changed?
- Can the time element be changed?
- Can the cause or effect be changed?
- Can there be a change in character?
- Can the form be changed? (*animated, speeded, slowed, attracted...*)
- Can the state or condition be changed?
- Can the use be adapted to a new market?

Caveats

- Capture “What, Not How”.
- Meet customers in the use environment.
- Collect visual, verbal, and textual data.
- Props will stimulate customer responses.
- Interview all stakeholders and lead users.
- Develop an organized list of need statements.
- Look for latent needs.
- Survey to quantify tradeoffs.
- Make a video to communicate results.