



**CREATE**













WATER STORAGE AND TRANSPORTATION, INDIA





# CREATE: GOALS

To move from research to real-world solutions, you will go through a process of synthesis and interpretation. This requires a mode of narrowing and culling information and translating insights about the reality of today into a set of opportunities for the future. This is the most abstract part of the process, when the concrete needs of individuals are transformed into high-level insights about the larger population and system frameworks that the team creates.

With defined opportunities, the team will shift into a generative mindset to brainstorm hundreds of solutions and rapidly make a few of them tangible through prototyping. During this phase, solutions are created with only the customer Desirability filter in mind.

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Goals of the Create Phase are:

- » **MAKING SENSE OF DATA**
- » **IDENTIFYING PATTERNS**
- » **DEFINING OPPORTUNITIES**
- » **CREATING SOLUTIONS**





# CREATE: OUTPUTS

Using both left-brain (logical) thinking and right-brain (creative) thinking, this phase will translate your research into a set of strategic directions and tangible solutions.

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At the end of the Create phase, the team will have generated the following:

- » **OPPORTUNITIES**
- » **SOLUTIONS**
- » **PROTOTYPES**



**There are four key activities in the Create phase: synthesis, brainstorming, prototyping, and feedback.**



# CREATE: THEORY

Synthesis is the act of making sense of what we've seen and heard during the observations.

**Synthesis takes us from inspiration to ideas, from stories to strategic directions.**

By aggregating, editing and condensing what we've learned, synthesis enables us to establish a new perspective and identify opportunities for innovation.

Brainstorming with rules like Defer Judgment and Build on the Ideas of Others is a proven method for coming up with unexpected innovations.

**Brainstorming makes us think expansively and without constraints.**

The practice of generating truly impractical solutions often sparks ideas that are relevant and reasonable. It may require generating 100 ideas (many of which are mediocre) in order to come up with three truly inspirational solutions.

Prototyping is a methodology for making solutions tangible in a rapid and low-investment way. It's a proven technique for quickly learning how to design an offering right and for accelerating the process of rolling out solutions to the world.

**Prototyping is about building to think, acknowledging that the process of making ideas real and tangible helps us to refine and iterate the ideas very quickly.**

Creating many different prototypes that highlight different aspects of your product or service not only enables people to give honest feedback, but also prevents the team from getting attached to an idea prematurely.

Feedback is critical to the design process. It brings the constituents directly back into the design process.

**Feedback inspires further iterations to make solutions more compelling for constituents.**



## DEVELOP THE APPROACH

Creation is about developing deeper understanding and translating that understanding into new innovations. There are many ways to do this, but the two most common are participatory approaches and empathic approaches. Use one or both of these approaches, develop your own, or draw upon different techniques when appropriate.

### Facilitator Notes

 **Time:**  
Days-Weeks.

 **Difficulty:**  
★★★★☆

Step 1. Identify constituents who would be good design team members. The criteria will vary from place to place and from challenge to challenge. For example, do you need people who are successful, respected, and/or politically powerful? Or would it be more valuable to have people who are typical community members? Or perhaps a mix of the two.

Step 2. Schedule a co-design session or series of sessions that works for everyone, and explain the process and goals of the session in advance.

Step 3. Conduct co-design sessions with attentions to the needs, goals, and priorities of the community.

## METHOD: PARTICIPATORY CO-DESIGN

Having the team co-design solutions with people from the community and local value chain actors can be a great way to leverage local knowledge. It can also lead to innovations that may be better adapted to the context and be more likely to be adopted, since local people have invested resources in their creation.

Consider using participatory co-design when:

- » you need a lot of local expertise and knowledge
- » solutions from the “outside” will not be easily adopted
- » the politics of a community require it



Facilitate a co-design workshop. Bring 8-20 people from the community together to design solutions to a challenge. Introduce the challenge by telling a few stories of problems that led to the design challenge. Then generalize those stories to How Might We? statements. Ask people to add their own stories or How Might We? questions. Brainstorm solutions with the participants and make sure you have the appropriate materials on hand to prototype.



**TRY  
#2**

Co-design over a longer period of time through an in-context immersion. By living with a family over a few days or weeks, you will have the opportunity to ask people to informally identify problems and work together with them in their home, farm, or community. This approach is also very good for spotting new problems and developing solutions to those problems in the moment they happen.



**TRY  
#3**

Find local experts and best practices. Ask different community members about the people who are considered to be successful. Schedule time with these people and leverage their knowledge to develop solutions together with them.



**GENDER**

Make sure to include women in the design team and female community members in the co-design. If living with a family, spend time equally with the husband, wife, extended family, and even the children. When hosting a co-design session, think about whether to have mixed-gender groups, or to have separate groups of men and women. When looking for local experts and best practices, ask who is considered an expert of both men and women, as well as less powerful groups.



STEP  
1CASE  
STUDYENGAGING LOCAL ARTISANS  
AS CO-DESIGNERS

An NGO and designer Kara Pecknold partnered with local weavers to help them market their woven products more widely and increase their economic power. Because the local artisans are the experts, this designer engaged these weavers as co-designers. The designer asked the weavers to draw a picture of what makes their weaving process or products unique as a way to understand how to differentiate their work.

Some drawings featured the plant that provides these weavers with their raw materials. They use the leaves from an invasive plant that is harming the environment of the Great Lakes Region of Africa. These weavers are turning an environmental problem into an economic opportunity. Based on these drawings and discussions, they identified the material they used as a key differentiator, and designed a logo for the weavers based on drawings of the plant.

Asking people to participate in the design process is helpful as a way to leverage local expertise. But it also can empower constituents to participate in their own destiny and helps balance the sometimes uneven power dynamic between the participant and the NGO team. In addition, engaging with participants in a visual way helped diminish problems created by language barriers.

## COVAGA LOGO DESIGN PROCESS





INSIGHTS & NEEDS

Believe that hard work leads to wealth  
Government evidence for the country

Creating Markets  
B.C.C.

WE LOVE THE OFFICE BUT WE NEED TO GET THE QUALITY

CENTRALITY OF CATTLE TO RURAL PRODUCTION

WE HAVE GAINED THE CONSENT OF INVESTMENT

FINANCED AND GOING TO START UP  
THINKING OF THE WAY TO GET THE MONEY AND GET GOING

WE CAN ONLY AFFORD TO LIVE ON THE MONEY WE HAVE

 **IDE**  
INTERNATIONAL DEVELOPMENT  
Enabling Rural Production

STEP  
**1**

## METHOD: EMPATHIC DESIGN

Creating solutions through empathy is a way for the design team to blend their expertise with the on-the-ground needs of people. Empathy means deep understanding of the problems and realities of the people you are designing for. It is important to do research across many different groups of people and to “walk in their shoes” before the Create phase if employing empathic design methods. By understanding people deeply, empathic design can lead to both appropriate and more breakthrough solutions. But this method challenges the design team to not just understand the problem mentally, but also to start creating solutions from a connection to deep thoughts and feelings.

Consider using empathic design when:

- » the design team has specific skills required to develop solutions
- » the solutions you are seeking are “new to the world”
- » community politics make it difficult to select a few individuals to work with



Include men and women in the design team to ensure a balance of perspectives.



When possible, recruit members of the community with the skills needed to be members of the design team.



Empathic design is not a method in which preconceived ideas and assumptions are substituted for grounded research and connection with end users. Although solutions are generated by the design team, the goal is to always have the people you are designing for in mind.

**Facilitator Notes**

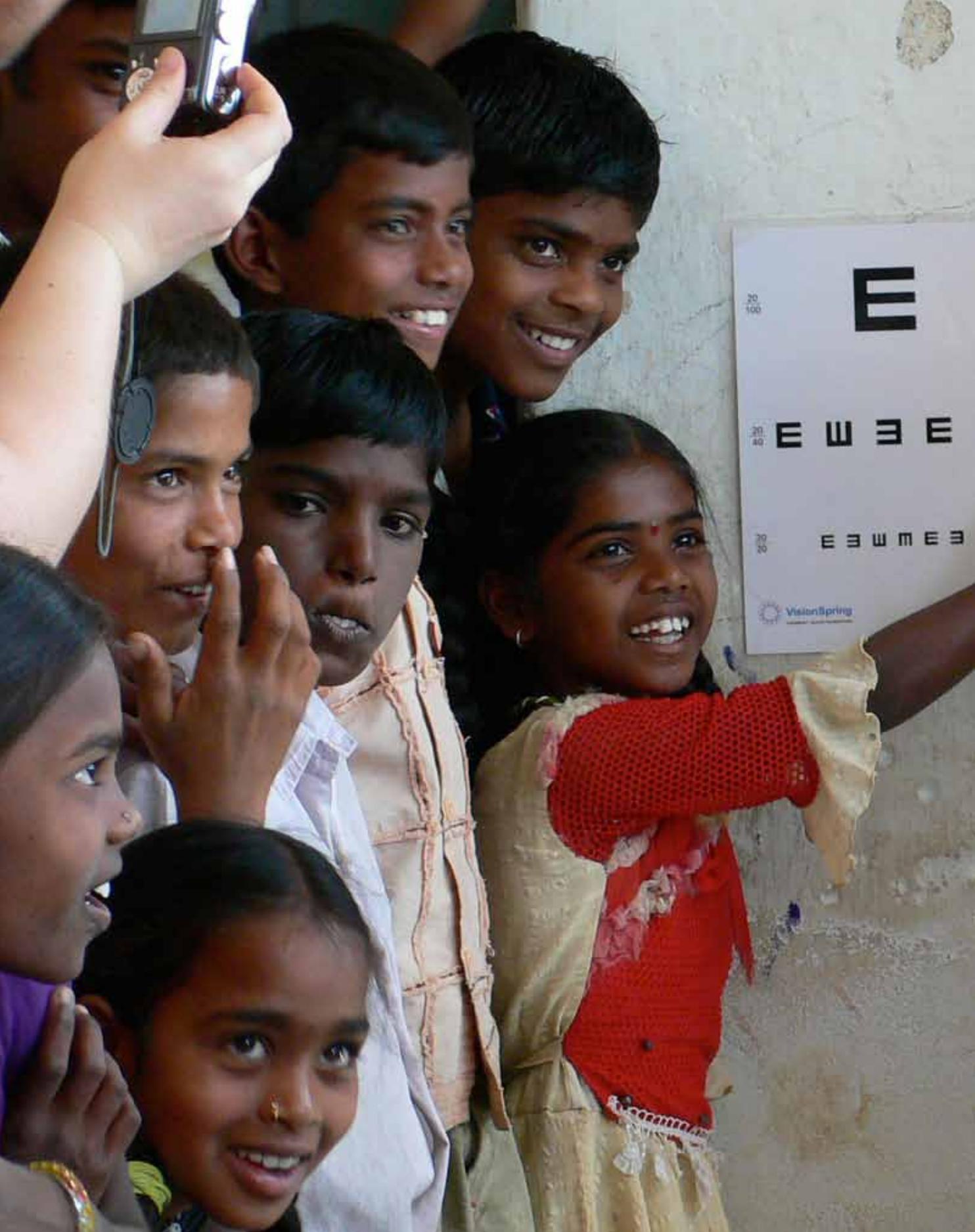
**Time:**  
 Days-Weeks

**Difficulty:**  
 ★★★★★

Step 1. Encourage the team to connect at both the rational and emotional levels with constituents.

Step 2. If team members start to judge or exoticize the behaviors or decisions of constituents, remind them that their task is to understand and empathize with people, not to judge them.

Step 3. Make sure the team has spoken with enough people in the Hear phase to develop empathy. If the design team still doesn't understand and feel the reasons for the behavior of constituents, go back to the field and conduct more research.



20/80 E

20/40 E W 3 E

20/20 E 3 W M E 3

 VisionSpring

STEP  
1CASE  
STUDYBRINGING EYECARE TO  
CHILDREN IN INDIAN VILLAGES

VisionSpring embarked on a project to shift its offer from selling reading glasses to adults in the developing world to providing comprehensive eye care to children.

In an initial brainstorm with the VisionSpring team after conducting field research, ideas centered around the notion that kids liked experiences designed for kids. The VisionSpring team met with experts, including pediatric eye doctors, and saw that the norm was to decorate spaces with stuffed animals and toys as a way to make kids feel comfortable.

During the prototyping process, the design team developed a number of prototypes for the eye screening process for kids. They went to the field armed with a number of prototypes to try and iterate on. Using the traditional eye chart, the Vision Entrepreneur and then the teacher administered the eye test. This was very intimidating to the kids and several burst into tears. To make it more approachable and less intimidating, the team also tried using a sillier eye-chart that had toys and animals on it. But it became too much like play, and chaos ensued.

The team took a step back and thought about what would be serious enough to keep the diagnostic session from becoming a raucous play session, but not so serious as to inspire tears.

Sitting in the schoolyard, the team reflected back on their own experiences as kids, recalled playing “house” and “doctor”, where they would dress up with their friends and simulate adult behavior. Inspired by this role reversal/role play, the team thought: why not put the child in the position of authority? The team tried a protocol where the child would screen the eyes of the teacher, and then where they would screen each other. They had fun emulating adult behavior, and weren’t intimidated by their peers.

Empathic design means thinking from the perspective of your users, and doing everything you can to feel and understand what they are experiencing. The team got in touch with what is fun and what is scary to kids in order to create an eye care experience that works for kids.



## SHARE STORIES

### Facilitator Notes

 **Time:**  
4 Hours-Days

 **Difficulty:**  
★★★★☆

Step 1. Gather the design team together in a room with plenty of wall space. Optimally, the team should be sitting in a circle.

Step 2. Distribute post-it notes and markers. Have a flip chart or large sheets of paper nearby, as well as tape to attach these sheets to the wall.

Step 3. Tell the team to capture their notes, observations, and thoughts on the post-its as they speak. Everything that is said during story sharing should be captured in a note: life history, household details, income, aspirations, barriers, quotes, observations, etc.

Step 4. Ask each team member to share the story of the person(s) they met. Go through the stories one by one.

Step 5. Affix all the post-it notes to the flip chart or large pieces of paper on the wall. Use one large sheet per story. When the story is finished, hang it on the wall and move on to the next story. At the end of Story Sharing, you will have many sheets lined up on the wall with hundreds of post-it notes.

Telling stories is about transforming the stories we heard during research into data and information that we can use to inspire opportunities, ideas and solutions. Stories are framed around real people and their lives, not summaries of information.

Stories are useful because they are accounts of specific events, not general statements. They provide us with concrete details that help us imagine solutions to particular problems.



**TIP**  
#1

It's best to share stories soon after research so that details are not lost. One team member should tell the story of the person(s) they met, while the rest of the team takes notes on post-its. Notes should be small pieces of information (no longer than a sentence) that will be easy to remember later. As a group you should be thinking, "What does this new information mean for the project?" Some tips on storytelling are below.

#### Be Specific

Talk about what actually happened. It helps to begin stories with "One time..." or "After such and such happened..."

#### Be Descriptive

Use your physical senses to give texture to your description.

#### Follow Reporting Rules

Cover the following topics: who, what, when, where, why, and how.



**WATCH**  
**OUT**

#### Try to avoid:

- » Generalizing
- » Prescribing (they should, would, could...)
- » Hypothesizing
- » Judging
- » Evaluating or Assuming

THE OPINION LEADERS

THE HEAD

CONSCIOUS

THE TIME COM  
Looking to the community for



TIP  
#2

Story sharing turns the information that lives in a team member's head into shared knowledge that can be translated into opportunities and solutions.

Some techniques for effective sharing include:

- » Gather your notes, photos, and artifacts prior to story sharing. If possible, print the photos and display them on the wall to refer to.
- » Tell stories person by person, one at a time. Group meetings can be told as the story of a particular community.
- » Split information into small pieces to make it memorable. Make each piece no longer than this sentence.
- » Use vivid details and descriptions. This is not the time to generalize.



## IDENTIFY PATTERNS

Making sense of your research is accomplished by seeing the patterns, themes, and larger relationships between the information. This process can be messy and difficult at times, but ultimately very rewarding. Seeing the patterns and connections between the data will lead you quickly toward real-world solutions. There are several steps listed here to take you through the process for you use selectively based on the subject matter.

- » Extract Key Insights
- » Find Themes
- » Create Frameworks

### Facilitator Notes

 **Time:**  
45-60 mins.

 **Difficulty:**  
★★★★☆

Step 1. Ask the team to go to the wall with all the stories and choose 5 key post-its (stories, quotes, observations) that are most surprising, interesting, or provocative.

Step 2. Group these into related thoughts.

Step 3. Write a succinct Insight statement on a new post-it for each grouping that summarizes the big takeaway.

Step 4. Post these Insight post-its where all can see.

## METHOD: EXTRACT KEY INSIGHTS

Uncovering insights is about bringing visibility and clarity to previously hidden meaning.

### WHAT IS AN INSIGHT?

- » Insights are revelations – the unexpected things that make you sit up and pay attention.
- » Insights extrapolate individual stories into overarching truths.
- » Insights allow us to see our design challenge in a new light.

**For example, a combination of an observation and quote from an interview yielded the following sample insight:**

Observation: Farmers rely on farming information from their friends and neighbors, though they know this knowledge is limited.

Quote: “If the Privatized Extension Agent lived outside my area, I would want to visit his farm so I could see his production.”

Insight: Trust-building and knowledge sharing happens through ‘seeing is believing.’



TIP  
#1

### Select key information

Look across the information in the stories. Edit out the details that are not important - this is the time to let go of some of the detail. Choose the information that you find surprising, interesting, or worth pursuing.



TIP  
#2

### Aggregate big thoughts

Are some of the thoughts linked? If so, aggregate them. Take several related pieces of information and re-write them as one big Insight.



TIP  
#3

### Work at the same level

Check that the insights sit at the same level – that they are all big thoughts. If you find you have some lower level insights, consider whether they might be reframed at a higher level. If they need to be dropped a level, they may be best talked about as customer needs that inform and support the Insight.



STEP  
3CASE  
STUDYFINDING INSIGHTS FOR EFFECTIVE  
MARKETING TO FARMERS

In Ethiopia, the IDE team looked over the information from the Story Sharing exercise and extracted over 20 key insights. About half of these came directly from the post-its that were written in Story Sharing, and the other half were written based on the information the team heard during Story Sharing.

Some of the insights the team identified were:

- » School is a key channel for distributing information
- » There is a strong need for an alternative to borrowing oxen
- » Buying on credit is the default
- » Mass media sells water pumps

**Facilitator Notes**

**⌚ Time:**  
30-60 mins.

**☆ Difficulty:**  
☆☆☆☆☆

Step 1. Have the team go to the wall or board where they have placed their key story and insight post-its and select the 5 most interesting quotes, observations and/or insights.

Step 2. On a new board, sort these into themes.

Step 3. Check to make sure the themes are at the same level. If a theme is too specific, prompt the team to find the bigger idea. If a theme is too broad or has too many different ideas under it, ask them to break it down into several buckets.

Step 4. When finished sorting, give each theme a title on a new post-it. Make sure there is enough space between or below the different theme categories to facilitate the next step of opportunity identification.



## METHOD: FIND THEMES

Finding themes is about exploring the commonalities, differences, and relationships between the information.

Some ways to do this include:

### Look for categories and buckets

Sort your findings into categories or buckets. Which ideas are related? Cluster together the findings that belong together into themes.

### Consider the relationship between categories

Look for patterns and tensions in the way your themes relate to each other. Are they on the same level? Or are they talking about different kinds of things?

### Group and re-group

Slice and dice the data in different ways to find meaning. Try moving the post-its around to form new groups.

### Get input from the team

Explain the early buckets and themes to a broader group. Learn from their input and try alternative groupings.



**TRY**

### Try the P.O.I.N.T. technique

Translate the Problems and Needs identified in storytelling into Insights (see previous Method) and Themes.

P = Problems

O = Obstacles

I = Insights

N = Needs

T = Themes



## TIP

Creating themes can be an engaging and rewarding experience, as you start to group and transform the data before your eyes. Some good techniques for doing this are:

- » Work together as a team to decide how to create buckets and themes.
- » Arrange and re-arrange the post-its on the wall until the team is satisfied with the groupings.
- » If there is a theme that contains almost all the post-its, break it out into several smaller themes. Try to see not only the connections, but also the relevant differences between the information.

STEP  
3**METHOD:**  
**CREATE FRAMEWORKS**

Frameworks allow you to begin putting the specific information from stories into a larger system context.

**What is a framework?**

A framework is a visual representation of a system. It shows the different elements or actors at play and highlights the relationships between them.

**Using your framework**

A good framework will help you see the issues and relationships in a clearer and more holistic way. Discuss what the framework implies for constituents, for other actors in the community, and for your organization. Use the framework to develop or build upon key insights. Capture those insights and add them to your growing list.

**Facilitator Notes**

**Time:**  
1-2 Hours

**Difficulty:**  
★★★★★

Not all design challenges will yield or require frameworks. If the team does not feel that this step is required for your challenge, skip it.

Step 1. Listen for moments in story sharing when the topic fits into a larger system or is linked to another piece of information.

Step 2. When team members start to suggest larger systemic structures or relationships between things, ask them if they can draw what they are saying. Consider the example framework types described here.

Step 3. Allow some time for your team to play with re-drawing their framework several times until they feel it represents what they want to say in a robust way.

**GENDER**

In many cases, it will make sense to create two different frameworks: one from the perspective of women in the community and one from the male perspective. To understand whether you need to dedicate attention to the different needs of women and men, ask yourself these questions:

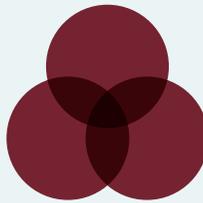
- » How do women's stories differ from those of men?
- » Is gender itself a theme?
- » Do women's stories tell a different story about household activities, income opportunities and barriers, and market relations than the stories obtained from men?

If you answered yes to these questions, think about creating two different frameworks that will yield different sets of opportunity areas for women and men.



TIP

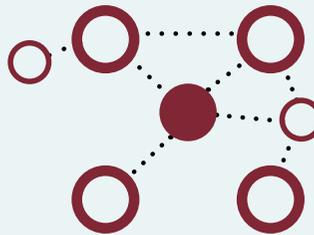
If you are having trouble visualizing your own frameworks, here are some common types of frameworks that recur again and again.



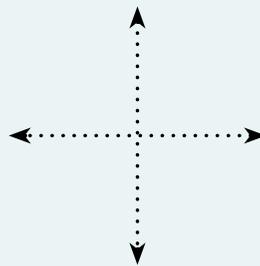
Venn Diagram



Process Map



Relational Map



Two-by-Two Matrix

**Facilitator Notes**

**Time:**  
40 mins.-2 Hours

**Difficulty:**  
★★★★☆

Step 1: Prepare your team to begin defining opportunity areas by telling them that this is where they will start to shift from analysis of information to creating new ideas.

Step 2: Distribute post-it notes and markers to everyone in the team. Ask the team to start their opportunities with the words “How Might We...?”

Step 3: Spend at least 15 minutes on each theme generating Opportunity Statements for that theme. Place the post-its next to the theme area.

Step 4: If the team gets stuck, read the insights from each theme area as a way to jolt the creativity of the team. For example, for each insight posted, ask the team to come up with at least one “How Might We...” statement.



## CREATE OPPORTUNITY AREAS

Once you have pulled out the themes and patterns from what you heard, you can start creating opportunity areas. The process of translating insights into opportunities is about moving from the current state to envisioning future possibilities. Opportunities are the springboard for ideas and solutions.

### WHAT IS AN OPPORTUNITY AREA?

- » An opportunity area is a stepping stone to idea generation.
- » An opportunity is a rearticulation of problems or needs in a generative, future facing way.
- » An opportunity area is not a solution. Rather, it suggests more than one solution. It allows the team to create many solutions.

### FRAMING OPPORTUNITY AREAS

Opportunities start with the phrase “HOW MIGHT WE...?” to suggest a mindset of possibility.



**TIP**  
**#1**

Start each statement with “HOW MIGHT WE...?” and abbreviate on post-its to “HMW.”



**TIP**  
**#2**

Use different color post-its for your opportunity statements than you used for insights. This will help to visually separate insights from opportunities for the next step.

MARKET INFO

AG KNOW-HOW

y to research all ducks in market

HMW provide real time

HMW... LEVERAGE

a successful farmer goes to the market to observe what sells well and plants that + plants many crops

HMW

key fear to many competitors to make prices of produce go down

HMW farmer

finding import substitution opportunities is a path to wealth



**WATCH OUT**

Watch out for opportunity areas that are already solutions. A key part of creating innovative solutions is preventing yourself and your team from jumping to conclusions.



**TIP #3**

Go for quantity, not quality at this point.



**TIP #4**

When narrowing down the opportunity statements to 3-5 HMW statements to use in brainstorming, select some that are intentionally outside of your current projects or capabilities. At this point, filter based on Desirability to customers, not Feasibility to the organization.



**TRY**

If your opportunity sounds like a specific solution, back it up by asking yourself, "Why would we want to offer this solution?" or "What user needs are answered by this solution?" Here is an example:

**Insight**

Trust building and knowledge sharing happens through 'seeing is believing.'

**Solution**

A training course offered by community members to teach their friends and neighbors about a technology or behavior that has worked for them. This is a solution.

Ask yourself: What needs are answered by this solution?

Answer: The need to expand the knowledge of community members through local information aggregators.

**Opportunity**

How might we better educate and inform local knowledge aggregators? Or how might we support new technology experimentation by local knowledge aggregators?

MARKET EDUCATION

HMW... INCREASE ACCESSIBILITY POST-PROCESSING PRACTICES

- PROCESSING RELEASES VALUE FOR FARMERS

HMW connect farmers nationwide

crop - insect and rats - are a problem. Want help/information to address this.

**Facilitator Notes**

**⌚ Time:**  
45-60 mins.

**☆ Difficulty:**  
★★★★☆

Step 1. Prepare 3-5 “How Might We...?” opportunity statements from those generated previously. Place each statement on a separate wall or board. Give each person post-it notes and a marker.

Step 2. Remind people of the rules of brainstorming. Tell them to be very specific about the ideas they are proposing. Use big markers (not pens) so everyone can see what the idea is. Write only one idea per post-it.

Step 3. Begin by asking the group to generate a list of barriers related to the opportunity statement.

Step 4. Protect all participants by enforcing the Rules of Brainstorming. If ideas slow down, prompt the group to think about one of the barriers listed during the warm-up. Or share a story from the research to spark thinking (i.e. “So what ideas would encourage Shashu to adhere to her medication?”)

Step 5. When the ideas really slow down, switch to a new opportunity area. This might be 15-30 minutes per HMW.



## BRAINSTORM NEW SOLUTIONS

Brainstorming gives permission to think expansively and without any organizational, operational, or technological constraints.

Some people think of brainstorms as undisciplined conversation. But conducting a fruitful brainstorm involves a lot of discipline and a bit of preparation.

The practice of generating truly impractical solutions often sparks ideas that are relevant and reasonable. It may require generating 100 ideas (many of which are silly or impossible) in order to come up with those three truly inspirational solutions.



**TIP**

### SEVEN BRAINSTORMING RULES

- » **Defer judgment**  
There are no bad ideas at this point. There will be plenty of time to judge ideas later.
- » **Encourage wild ideas**  
It's the wild ideas that often create real innovation. It is always easy to bring ideas down to earth later!
- » **Build on the ideas of others**  
Think in terms of ‘and’ instead of ‘but.’ If you dislike someone’s idea, challenge yourself to build on it and make it better.
- » **Stay focused on topic**  
You will get better output if everyone is disciplined.
- » **Be visual**  
Try to engage the logical and the creative sides of the brain.
- » **One conversation at a time**  
Allow ideas to be heard and built upon.
- » **Go for quantity**  
Set a big goal for number of ideas and surpass it! Remember there is no need to make a lengthy case for your idea since no one is judging. Ideas should flow quickly.



Accessibility  
of Inputs  
R w/ 10km



TRY

### Brainstorming warm-up

Use this activity to get the team in an open-minded and energetic mindset for brainstorming.

Pair up with a partner. Person A will come up with lots of ideas about a potential businesses he or she wants to start. (Alternatively, one could plan an event such as a family vacation and pose ideas of places to go.)

#### Round 1:

Person A comes up with one idea after another. Person B must say NO to each idea and give a reason why it wouldn't work. Do this for 2-3 minutes.

#### Round 2:

Now Person B comes up with business or event ideas, one after another. Person A must say YES to each idea and build on it to make it bigger. Do this for 2-3 minutes.

As a group, discuss how these two different experiences felt. The Round 2 experience is the environment the team will want to create for a successful brainstorm.



## MAKE IDEAS REAL

### Facilitator Notes

 **Time:**  
45-60 mins.

☆ **Difficulty:**  
★★★★☆

Step 1. Ask teams to partner in teams of 2-4. Small teams help everyone to have a role.

Step 2. Ask teams to pick one solution from the brainstorming boards. You may choose to offer a range of criteria: two teams working on solutions they're "most passionate about," one group on "most feasible" and one on "furthest out" or "long term".

Step 3. Prompt teams to spend no more than 30-45 minutes making their chosen solution tangible, using one of the prototyping forms described here or creating new ones.

Step 4. Give each team 5 minutes to share their idea back with the larger group to get initial feedback. Encourage teams to include an enactment of the experience of use, even if they have a paper-based prototype. Prompt groups to identify what customer needs their prototype addresses and what key questions they still have.

Prototyping is about building to think. This means creating the solution so that it can be communicated to others and making the idea better. Prototyping allows you to quickly and cheaply make ideas tangible so they can be tested and evaluated by others - before you've had time to fall in love with them.

### What is prototyping?

- » **BUILD TO THINK:** Prototypes are disposable tools used throughout the concept development process, both to validate ideas and to help generate more ideas. Prototypes are a powerful form of communication and force us to think in realistic terms about how someone would interact with the concept.
- » **ROUGH, RAPID, RIGHT:** Prototypes are not precious. They should be built as quickly and cheaply as possible.
- » **ANSWERING QUESTIONS:** It is essential to know what question a prototype is being used to answer, for example about desirability, usefulness, usability, viability, or feasibility.

### Why prototype?

- » To develop a deeper understanding of what an idea means and to reveal questions the team needs to answer.
- » To create an internal dialogue about how the concept works and external communication about the concept.



### Imagine the Value Proposition

For each prototype, answer these questions to start building the value of the idea:

- » Who will benefit from this idea? What is the value to the end customers?
- » Why and how is this idea better than alternative options?
- » How much is this benefit worth to them?
- » How much would they be willing to pay for this benefit?
- » How might this payment be collected?



TIP

## COMMON PROTOTYPE FORMS



### Models:

A physical model of a product, shown above, makes a 2-dimensional idea come alive in 3 dimensions. Using rough materials allows you to quickly mock up low-fidelity prototypes.



### Storyboards:

Imagining the complete user experience through a series of images or sketches.



### Role-play:

The emotional experience with a product or service is sometimes best expressed by acting it out with team members taking on the role of the constituent or customer.



### Diagrams:

Mapping is a great way to express a space, process, or structure. Consider how ideas relate to each other, and how the experience changes over time.

**Facilitator Notes**

 **Time:**  
1-1.5 Hours

 **Difficulty:**  
★★★★☆

Step 1. Ask team members to prepare how to present their solutions to participants. It's not necessary to give behind-the-scenes organizational information to them.

Step 2. Have teams practice presenting solutions to the rest of the group—enactment is especially effective. Invite others to help simplify and clarify the presentation and identify focus questions to be answered in research.

Step 3. Ask teams to standardize a script about the solution so it is delivered consistently at each feedback session. Write down key questions to ask in follow-up.

Step 4. When introducing the feedback session to the customer group, explain you want honest feedback—even if negative—and that the team has spent minimal time prototyping.



## GATHER FEEDBACK

After solutions have been generated, it's time to take them back out to participants to gather feedback.



**WATCH  
OUT**

Don't invest too much time perfecting the ideas before feedback – the point of re-engaging customers is to change the solutions, not to prove that they are perfect. The best feedback is that which makes you rethink and redesign.

### How to solicit feedback

A great way to get honest feedback is to take several executions out to people. When there is only one concept available, people may be reluctant to criticize. However, when allowed to compare and contrast, people tend to speak more honestly.

### Whose feedback to solicit

Speaking to new participants in a different region from where you did your research is a way to explore the generalizability of a solution. You may choose to speak to a mix of both new people and to those you have spoken with before.

Try to include all stakeholders who would touch the concept; in addition to the end user, include manufacturers, installers, service providers, distributors, retailers, etc.

### What questions to pursue

For each prototype, identify 3-4 questions you'd like answer about desirability or use case during the feedback session.

Keep careful notes of the feedback, both positive and negative, and the new questions the team needs to answer about the solution.

**TIP**

The goal is to solicit honest feedback, even if it is negative. It's better to know early on before much investment has been made that a solution is not desirable. Here are a few tips in presenting yourselves and your solutions to participants:

**Don't try to sell the idea.**

Present solutions with a neutral tone, highlighting both pros and cons of a solution.

**Vary group size.**

Begin with a large group (10-15) to present the solution, then break into smaller groups, one per solution for a more intimate conversation.

**Adapt on the fly.**

If it becomes clear that there is one aspect of the solution that is distracting people from the core idea, feel free to eliminate this piece or change it.

**Ask participants to build on the ideas.**

If a participant asks a question like, "Can this service be purchase by the community or just an individual?" Ask the question back to them: "*Should* the service be purchased by the community or individual?" Another valuable question is, "How could this be better for you?" It invites the participant to help improve the idea or give additional critique.





## CASE STUDY

### TESTING HEARING AID PROTOCOLS FOR RURAL INDIA

The design challenge for this IDEO project was to make hearing aids more accessible in rural India. One key hurdle was creating a diagnostic process that could be effectively administered outside a medical setting by minimally-trained local technicians.

During the initial research, the team learned about the constraints associated with fitting a hearing aid. They developed a process prototype that included a fitting protocol, a technician kit with tools for fitting a hearing aid, and technician training materials. The team started by training two local people as technicians in less than a day, and then went to villages to watch the newly trained technicians try the protocol with people who have trouble hearing.

While watching the technicians on the first day in a village, the team quickly saw that the protocol was too complex. It took too long to explain to potential customers how to complete the tests. The team immediately set to simplifying the protocol, and then trained a new pair of technicians on the newly simplified protocol. To the team's surprise, while the next village visit went more smoothly, there were still some challenges due to complexity. The team conducted a third round of simplification, and final testing confirmed that the protocol was finally simple enough and effective enough to work.

Gathering feedback early allows you to focus on how to improve your design and helps you identify problems in your designs that you may not notice in an artificial setting. As in this example, it is often possible to make changes and improvements to the design between feedback sessions, so that the team continues to learn and improve the solution.