

PUTTING THE END USER IN THE DRIVER'S SEAT

Human Centered Design

UCI Beall Student Design & Butterworth product development competition design workshop #2 (April 5, 2021)

HI, I AM...

JEFF KUNZELMAN

a maker - serial entrepreneur - startup enthusiast - design thinker - lover of technology - dad - (and CTO at Arcules)

STARTUPS (WHAT I HAVE LEARNED)

- Often, they could build 10 products from the ideas they have; they fail because they can't narrow
- Those with a consulting background often believe they know better. Interesting insight, but maybe not the path to a viable product; Need find, then narrow
- Those that can "build" fast often spend time building products; they should be spending time need finding, then determine which product to build
- They are almost always in love with their awesome idea; they have difficulty stepping back to solve the actual end user need

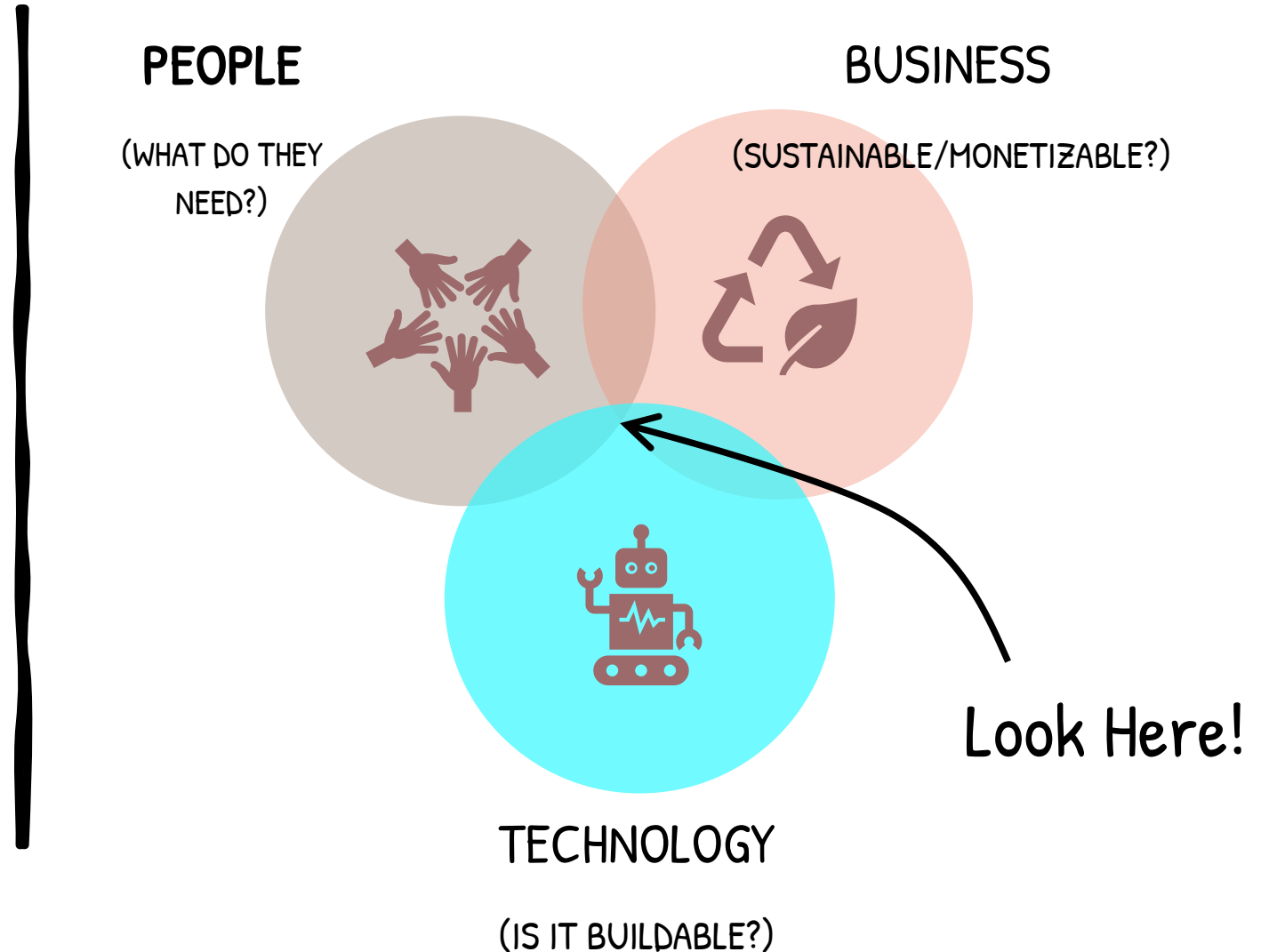
DESIGN THINKING



A methodology to find the intersection of the needs of people, a strategy to solve it and path to business success

THE INTERSECTION OF PEOPLE, BUSINESS & TECHNOLOGY

- Human-Centered - It begins with people and ends with a solution that connects with their needs
- Allows you to develop empathy, generate lots of ideas, build lots of prototypes
- This process values: Empathize, Listen, Learn, Iterate, Share

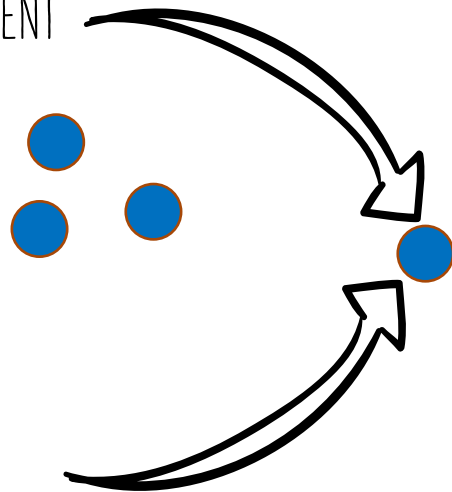


DESIGN THINKING

(PATTERN TO FIND THE INTERSECTION OF PEOPLE, BUSINESS, TECHNOLOGY)

Inside Out (solution 1st)

CONVERGENT



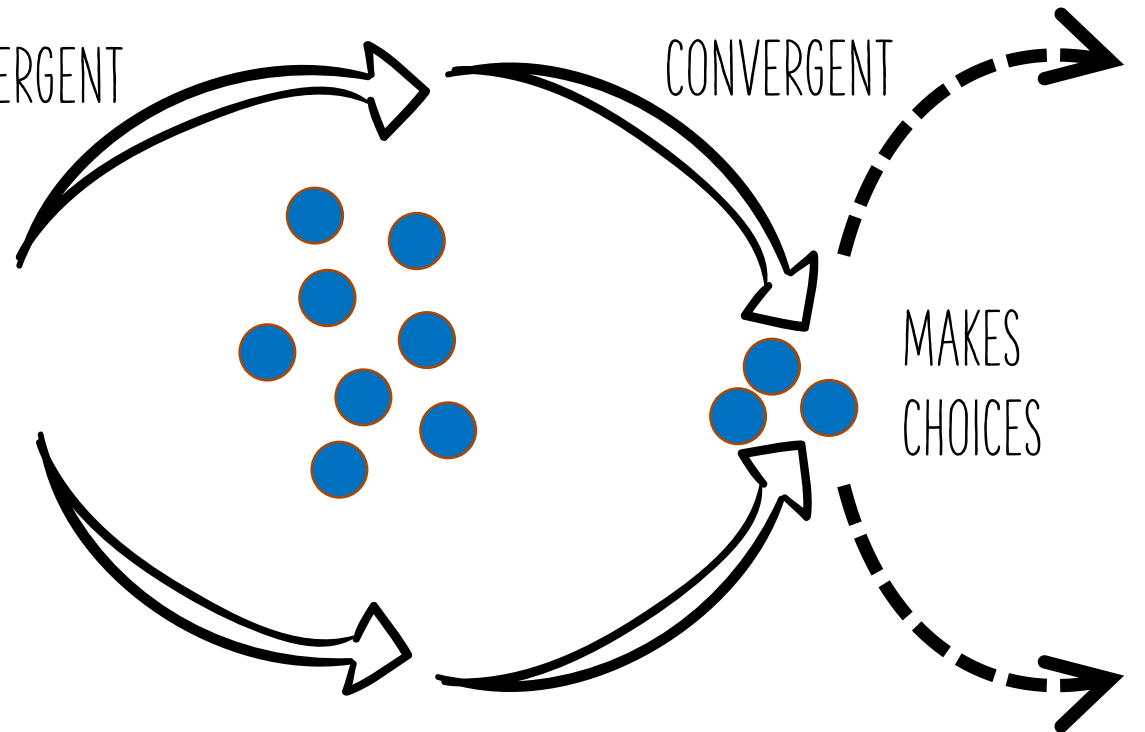
MAKES CHOICES

Starts with the solution: "I know what they need": Build -> Fail

Outside In (need 1st)

DIVERGENT

CREATES CHOICES



CONVERGENT

MAKES CHOICES

Starts with an opportunity area or need: "How might I?": Research -> Ideate -> Prototype -> Test -> (learn and repeat)

YOUR BABY, YOUR "PRECIOUS", IS UGLY

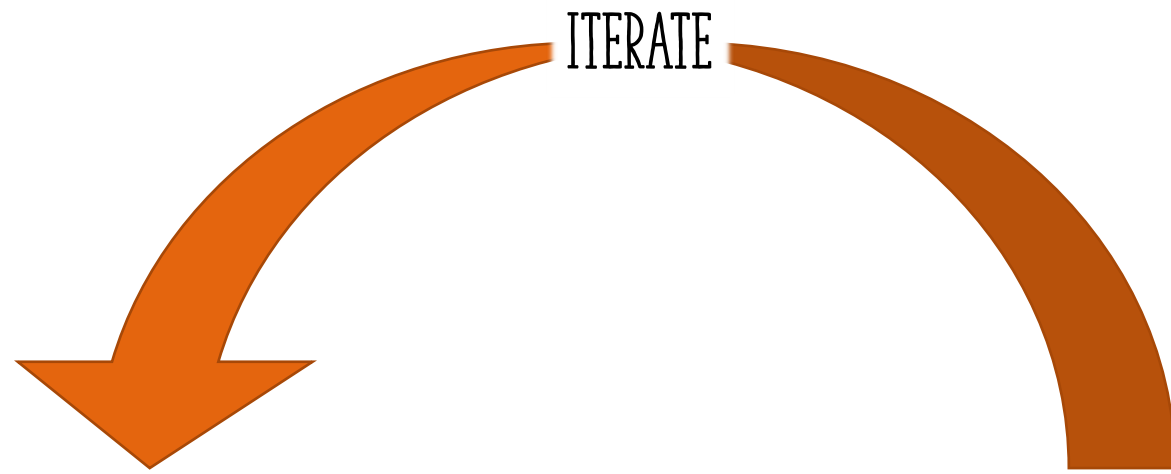


What you see



What they see

- Park your EGO!
- Listen and respect opinions
- Never try to convince
- Loose your preciousness
- It will hurt
- You will learn



RESEARCH -> IDEATE -> PROTOTYPE -> TEST



Customer interviews: Stay curious, don't assume, don't form echo chambers

CUSTOMER INTERVIEWS

(IT'S ABOUT THE PEOPLE)

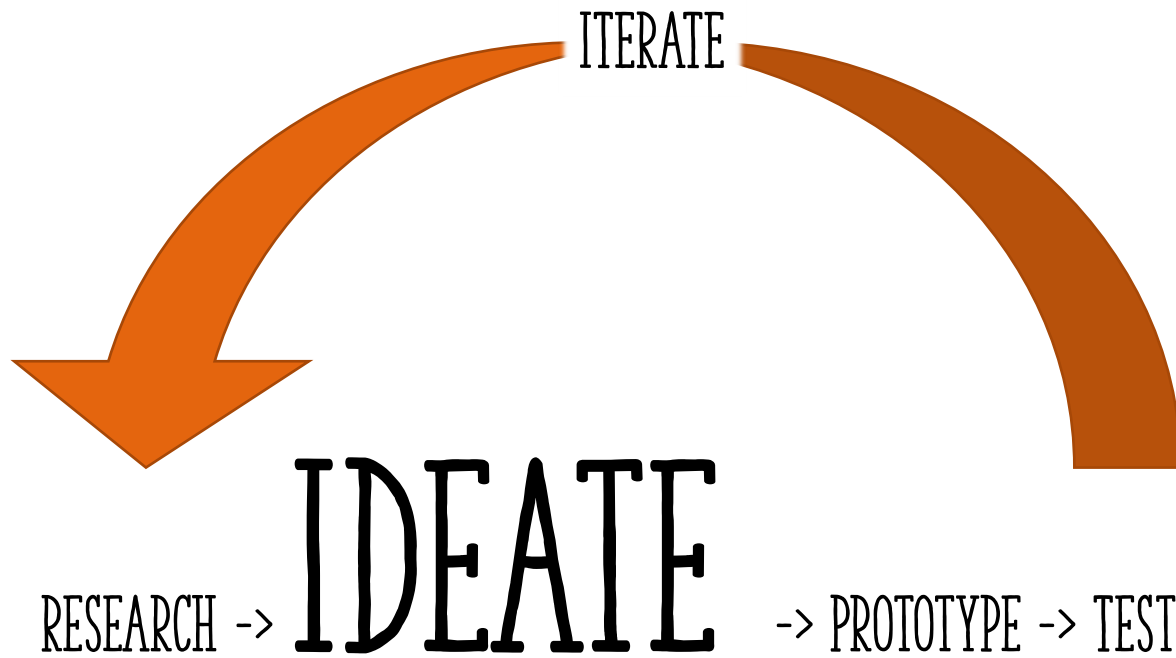
- Empathize with those you are designing for
- Understand how it affects their lives
- Talk directly to them, not 'at' them
- Find people not like you
- Find people at the extremes (haters and raving fans)
- Listen
- Read between the lines to identify additional questions
- Be honest
- Take good notes
- Do not interpret

"Get outside of your perspective bubble"

EVALUATE (IDENTIFY THE KEY NEEDS FROM THE RESEARCH)

- Gather all the interview information
- Theme the items
- Condense if possible
- Capture personas
- Identify opportunities
- What single key value are you trying to bring to the users?
- Go with your gut – What feels exciting to you and why?

"Stay open minded" – the opportunities and insights are often not what you expect



Let the ideas flow!

BRAIN STORMING

Who:

- Friends, Roommates, Co-conspirators, Other competitors in this competition

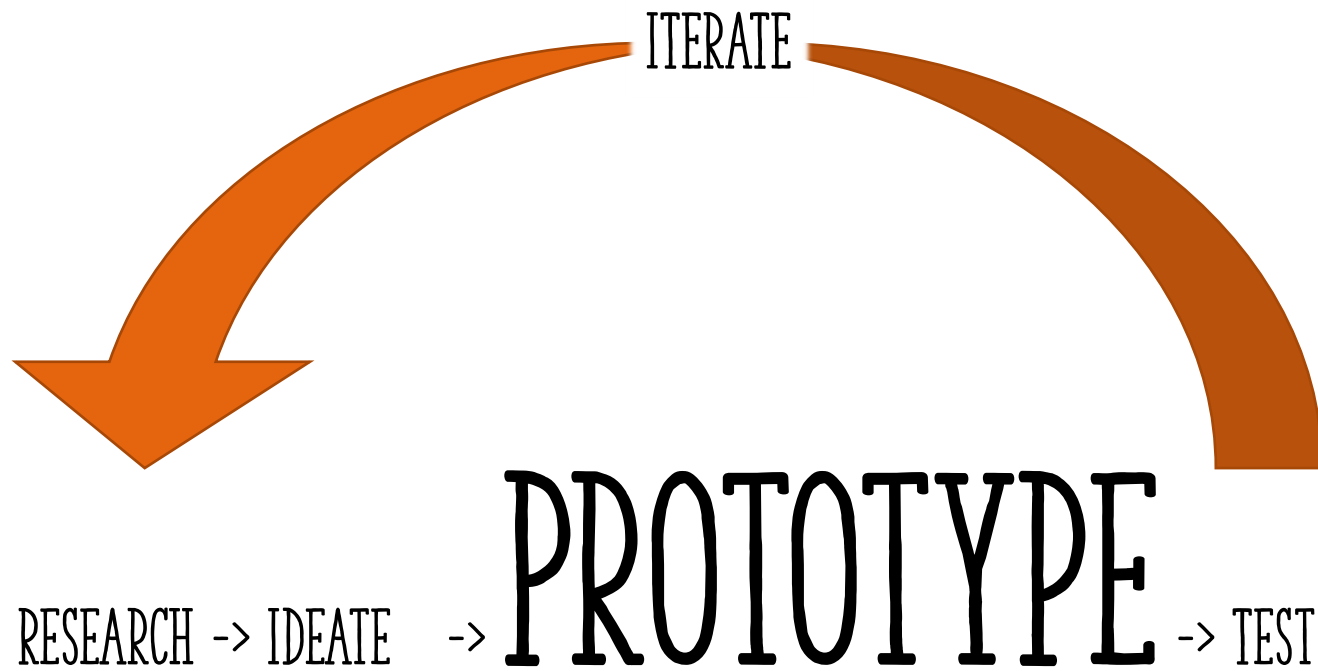
Rules:

- Withhold judgement, Riff of each others' ideas, Encourage the crazy, Focus by keeping it to one conversation at a time

How:

- Be visual and visceral where possible (post-its, crayons, drawings)

"How might we?"



Rapid prototyping allows rapid iteration and learning at low cost (time and money)

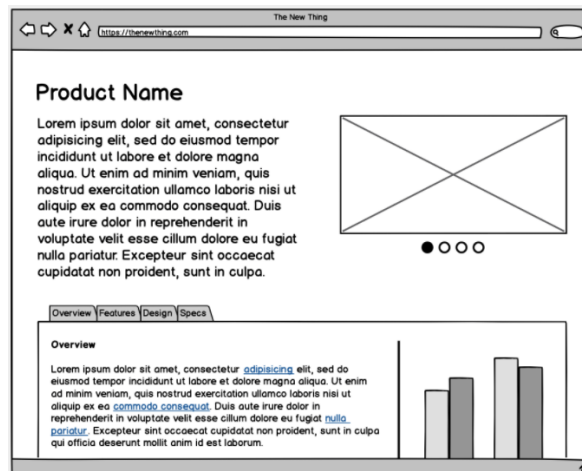
PROTOTYPE (THE FIDELITY MUST MATCH THE PURPOSE)

- Stop coding! Stop building!
- Focus on the IDEA you are trying to convey, not perfection
- Consider paper prototypes or wireframe designs
- Foam core and cardboard are the physical product designer's friend
- Storyboards can be awesome to communicate complex ideas or user experiences
- Consider the entire user journey & how your prototype fits in and fidelity it needs

"What is the minimum I can do to convey this idea?"

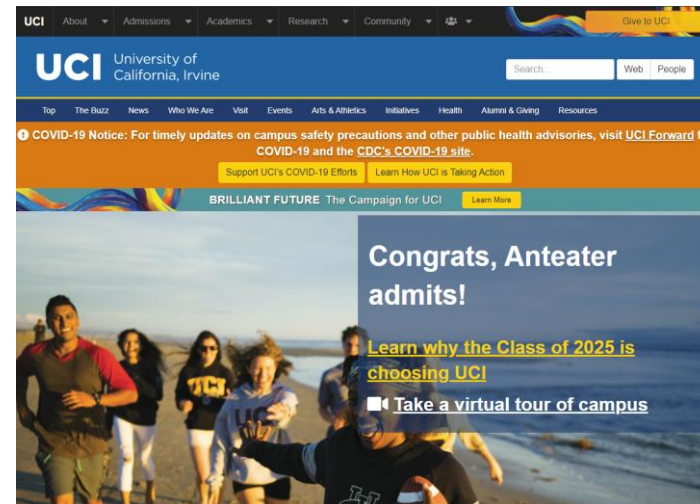
FIDELITY (CHOOSE THE PROTOTYPE FIDELITY THAT BEST FITS YOUR TESTING)

Low Fi



Is this the kind of info you want to see?
Can you get the answers you need?

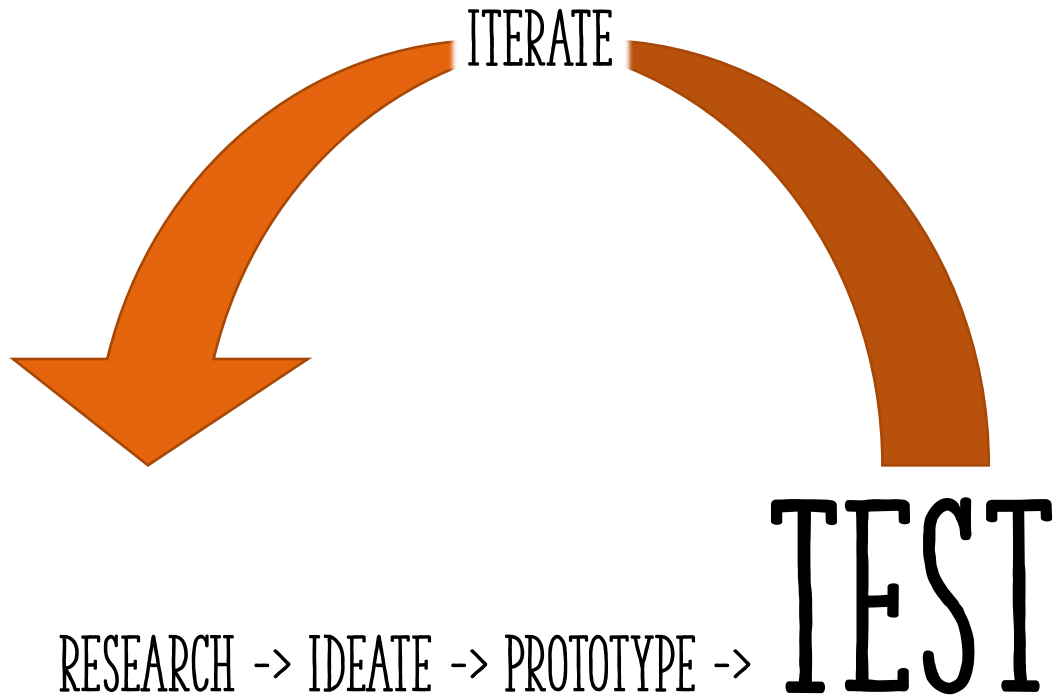
High Fi



Do you like this color scheme?
Does UCI seem like it will be fun?
Do the people make you want to go to the beach?

PROTOTYPE EVOLUTION





Is my baby still ugly?

VALIDATE YOUR DESIGN (RESEARCH)

- Reconnect with some of the original audience as well as new people
- Keep the validation simple
- Use your research/customer interview skills to observe and understand
- Know what you are testing
- Focus on only 2 or 3 big questions every cycle

"What am I validating, what did I learn?"

EXAMPLE



The wheelbarrow

SOLUTION FIRST: "DESIGN A BETTER WHEELBARROW"



What is the user's need?

- I'm moving all kinds of things, dirt, bricks, tools, whatever
- It keeps tipping and dumping out the load
- The tire is always flat and needs to be inflated
- It's so hard to push in soft or debris strewn ground
- It's useless in steep areas (up or down hills)
- It is so awkward and exhausting to push up hills
- I'm always taking multiple trips to reduce the load

DESIGN A BETTER WHEELBARROW

How might I move stuff over rough terrain?

- High sides, with a deep basin to contain larger things
- 4 wheels with wide stance for stability
- Foam filled tires, not inflated
- Big tractor style wheels for grip in soft or rocky terrain.
- Hand operated brakes, throttle
- 4-wheel (tank style) steering for maneuverability
- Powered all wheel drive for climbing and descents

"The Muck Truck"



NEED FIRST: "HOW MIGHT WE MOVE STUFF FROM A TO B"

What is the user's need?

- It's a PIA to move stuff on and off the job site
- Constantly going back and forth
- Often moving heavy things
- Often moving many 'awkward to carry' items
- The ground is often soft, or debris cluttered
- Hills and embankments are problematic
- Often don't have paved roads

How might I move stuff from A to B?

- Robots?
- Self balancing platforms?
- Teleporters?
- Drones?
- Follow me carts?
- Pack animals?
- All wheel drive wheelbarrow?
- Ski lift style?

SOLUTION VS NEED FIRST APPROACH

Solution First



Need First



SUMMARY



EMPATHIZE WITH THE USER & ITERATE OFTEN

- Step back, don't presume a solution
- Do customer interviews with those NOT like you, explore the extremes (haters and raving fans)
- Park your EGO, your baby IS ugly
- Listen and learn on every cycle, you must be relentless at this
- Be scrappy... "how might I learn more without much work?"
- Prototype at the bare minimum fidelity needed to validate
- Resist the urge to code or build early (even though it's the most fun)
- Visual or functional precision can get in the way of conversation and insights
- Refine to deliver THE critical experience for your target users
- Iterate: Wide -> Narrow -> Wide -> Narrow -> Wide -> Narrow (always driving towards narrower)

THANK YOU



SIMPLE INTERVIEW STRATEGIES

- Create a safe comfortable space so they can be fully honest. Let them know up front they won't hurt your feelings by being negative.
- Spend time (5-10 mins) to get to know them and build rapport
- Five Whys: It uncovers the underlying reasons for the response
- Ask them to think out loud: Uncovers interesting insights and often feelings and emotion
- Get raw reactions: Visuals, even paper prototypes engage the interviewee and uncover insights. Foam core is your friend, for physical prototypes

SIMPLE INTERVIEW STRATEGIES II

- Be observant: Watch the interviewee, look for uncomfortableness, confusion & body language. Use insights from this to adapt your interview.
- Pair up have a partner take notes while you ask questions
- Shut UP! Give plenty of quiet between interactions, this should be to the point of awkward. It teases out underlying thoughts
- ASK! You must ask and interact to learn
- Naïve questions: they often let you inside their heads
- Ask Permission to record & take notes; capture direct quotes – don't add your interpretation during the interviews

SIMPLE INTERVIEW STRATEGIES III

- Talk to people multiple times during the process
- Find the extremes - listen to them, you can often find the best inspiration from them; they have the most pronounced needs
- Validate with the median- empathize with them, they are your target audience
- Respect your interviewees & grok their perspective



Where do you derive the best insights from product reviews?

"grok" - to understand (something) intuitively or by empathy

USEFUL RESOURCES

- Want to know more about design thinking? IDEO invented it. They & the D-school have great (and free) resources here:
<https://www.designkit.org>
<https://dschool.stanford.edu/resources>
- Personas: <https://www.interaction-design.org/literature/article>
- Open design kit process: <http://opendesignkit.org/process>
- Brainstorming:
<https://www.savageandgreene.com/post-it-method>

MORE USEFUL RESOURCES

- Prototyping tools:

<https://www.invisionapp.com>

<https://www.figma.com>

<https://balsamiq.com/wireframes>

- Want to know more about the pros and cons of fidelity and wireframing?

<https://pixelfridge.digital/how-detailed-should-wireframes-be-a-guide-to-wireframe-fidelity>