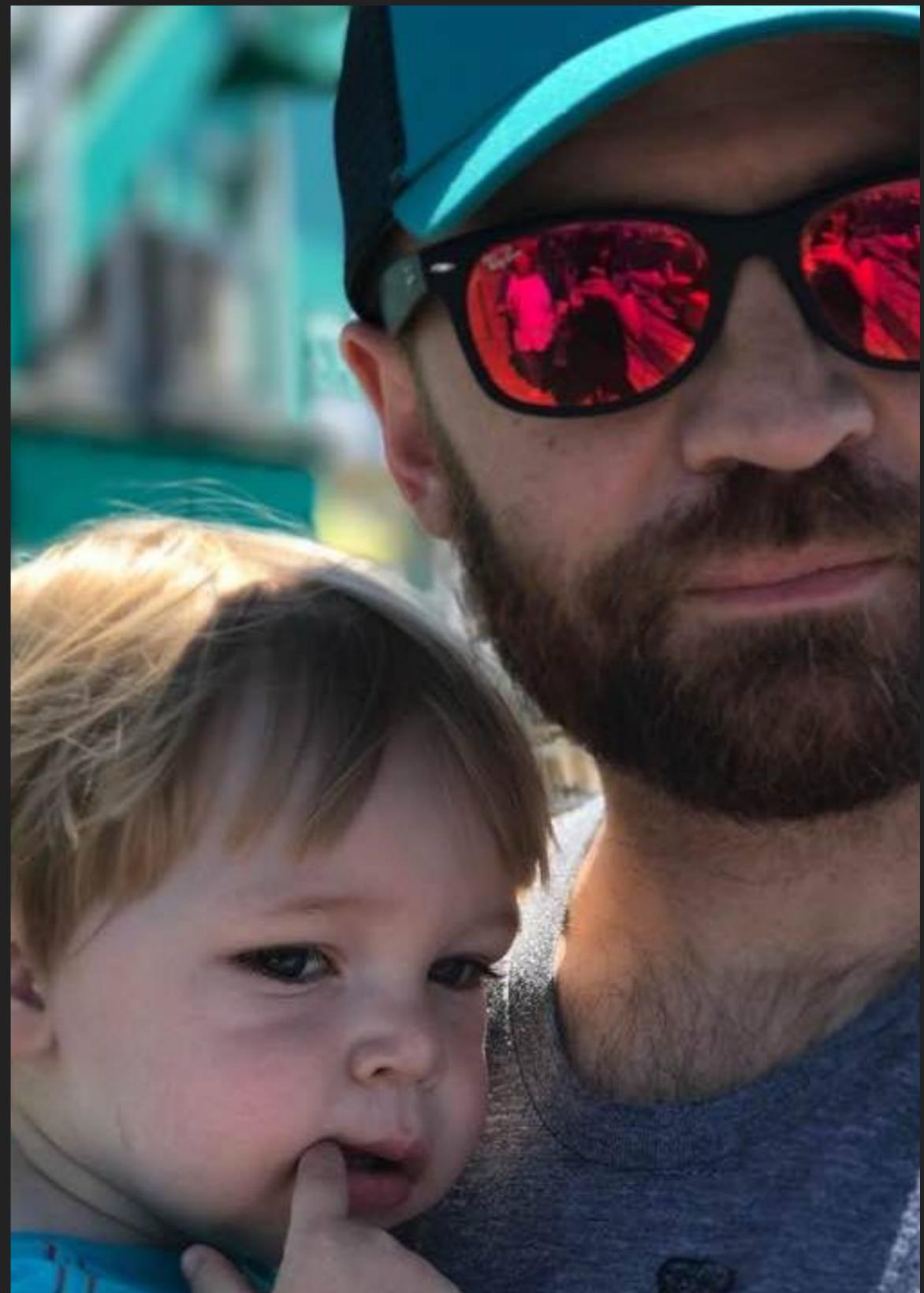


WELCOME TO DESIGN THINKING FOR DEVS, MEET YOUR WORKSHOP MATES

- ▶ On a name tag, draw your favorite animal then trade with the person to your right and turn each other's favorite animals into super heroes.
- ▶ Share with them:
 - ▶ Your Name
 - ▶ Why you chose this workshop
 - ▶ Where you work

CORY GWIN

- ▶ Software Engineer at GitHub, yeah that Microsoft company :duck: :)
- ▶ @gwincr11 on the tubes



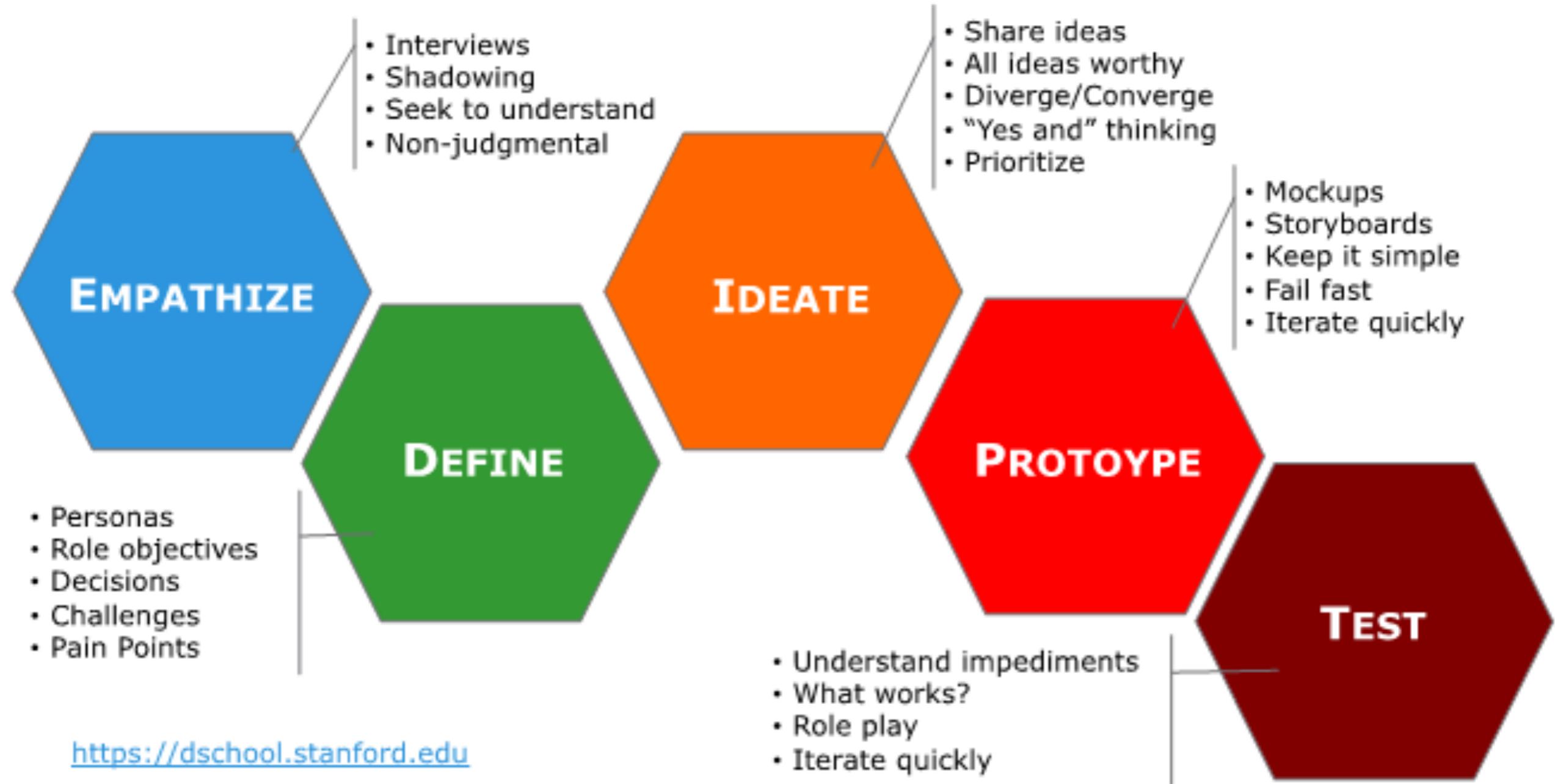
DESIGN THINKING FOR

DEVELOPERS!

AGENDA

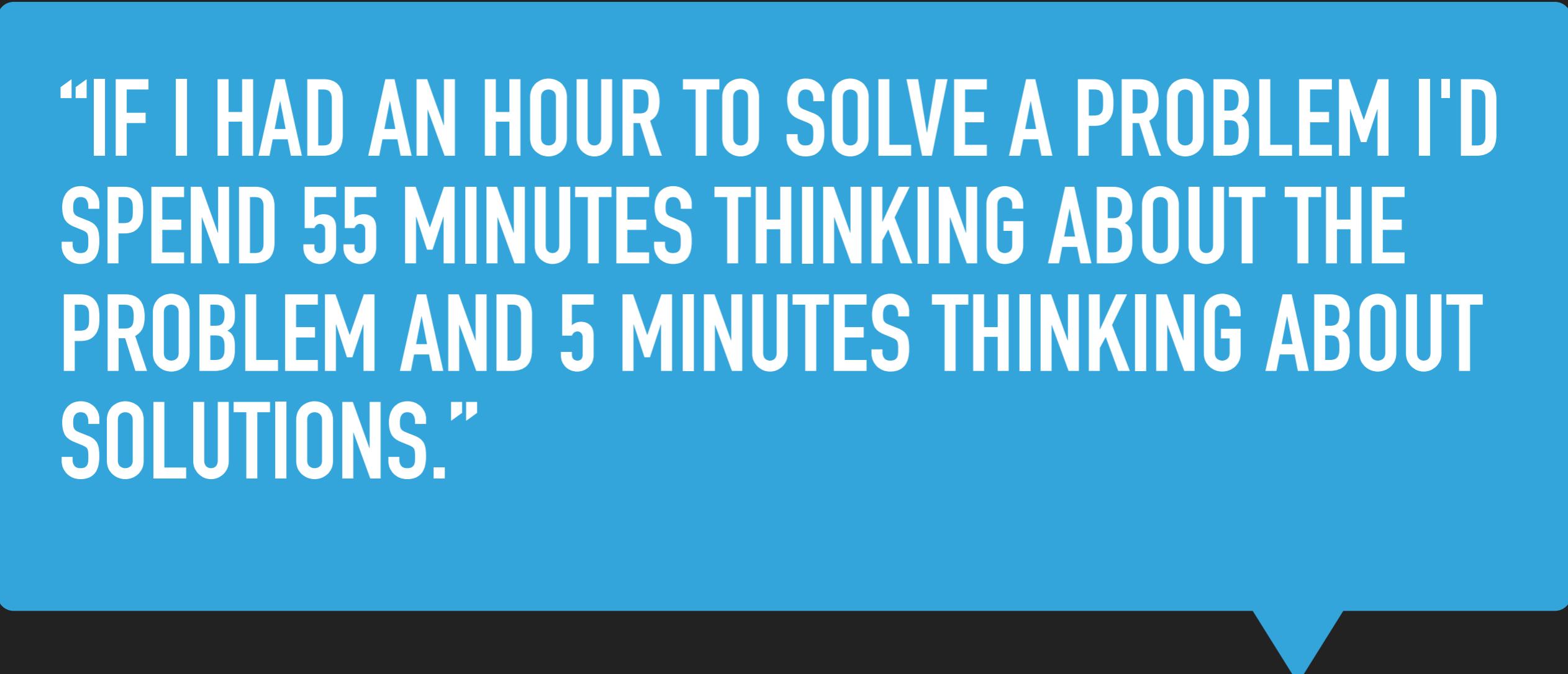
- ▶ Explain Design Thinking and Domain Driven Design.
- ▶ Engage design thinking tools to explore how to improve the conference experience.
- ▶ Learn techniques for developing a bounded context.
- ▶ Explore ways of developing a ubiquitous language.
- ▶ Learn ideation techniques to brainstorm and prioritize potential solutions.
- ▶ Prototype and evaluate our potential solutions.
- ▶ Circle time.

Stanford d.school Design Thinking Process



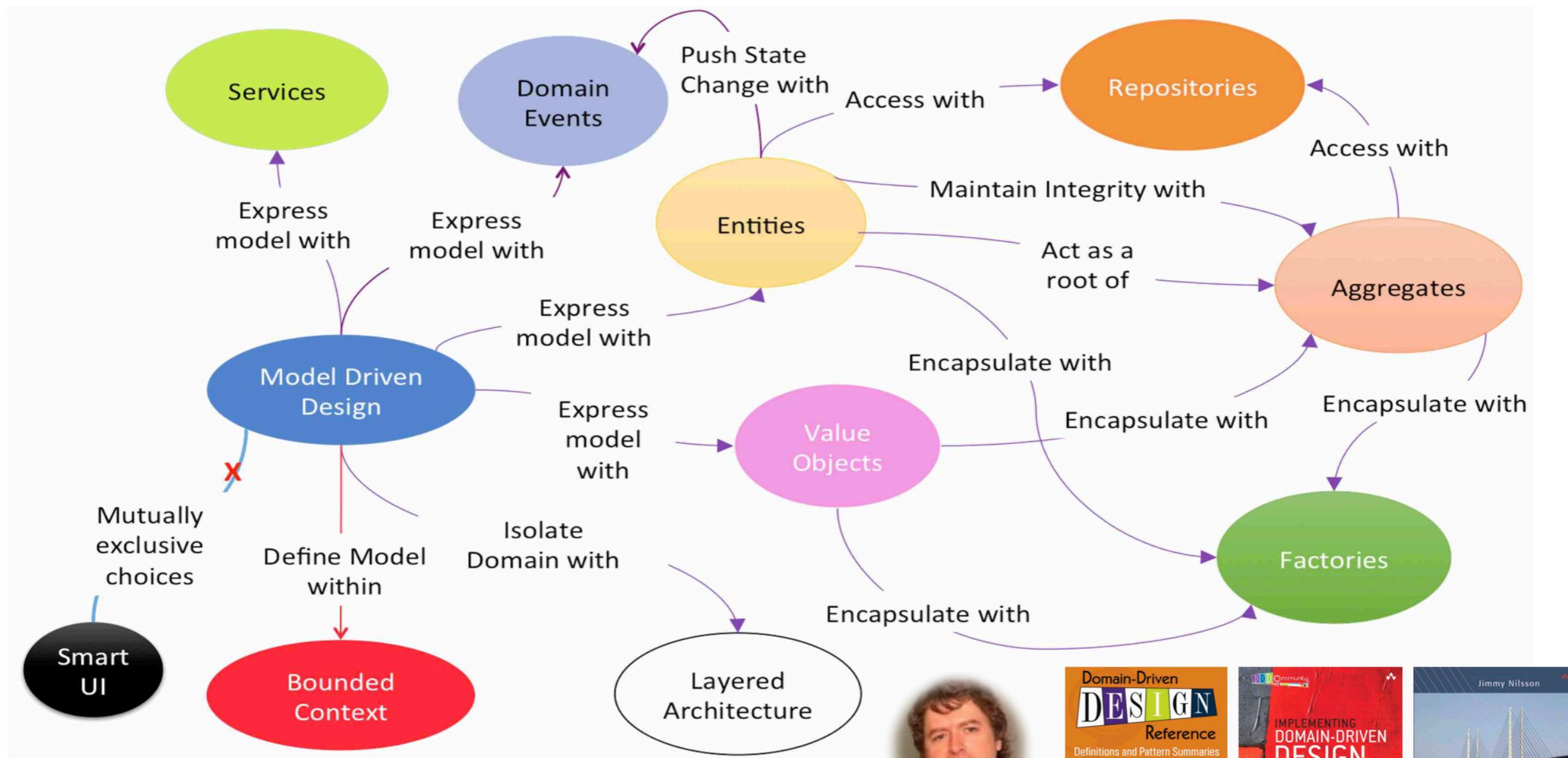
DESIGN THINKING?

“IF I HAD AN HOUR TO SOLVE A PROBLEM I'D SPEND 55 MINUTES THINKING ABOUT THE PROBLEM AND 5 MINUTES THINKING ABOUT SOLUTIONS.”

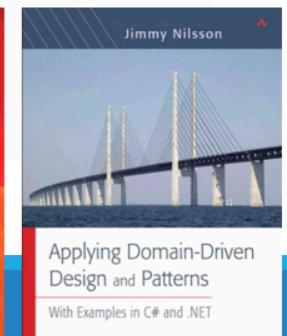
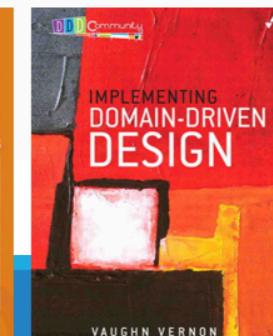
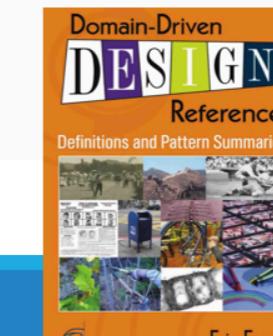


Albert Einstein

Domain Driven Design



Source: Domain-Driven Design Reference by Eric Evans



DOMAIN DRIVEN DESIGN?

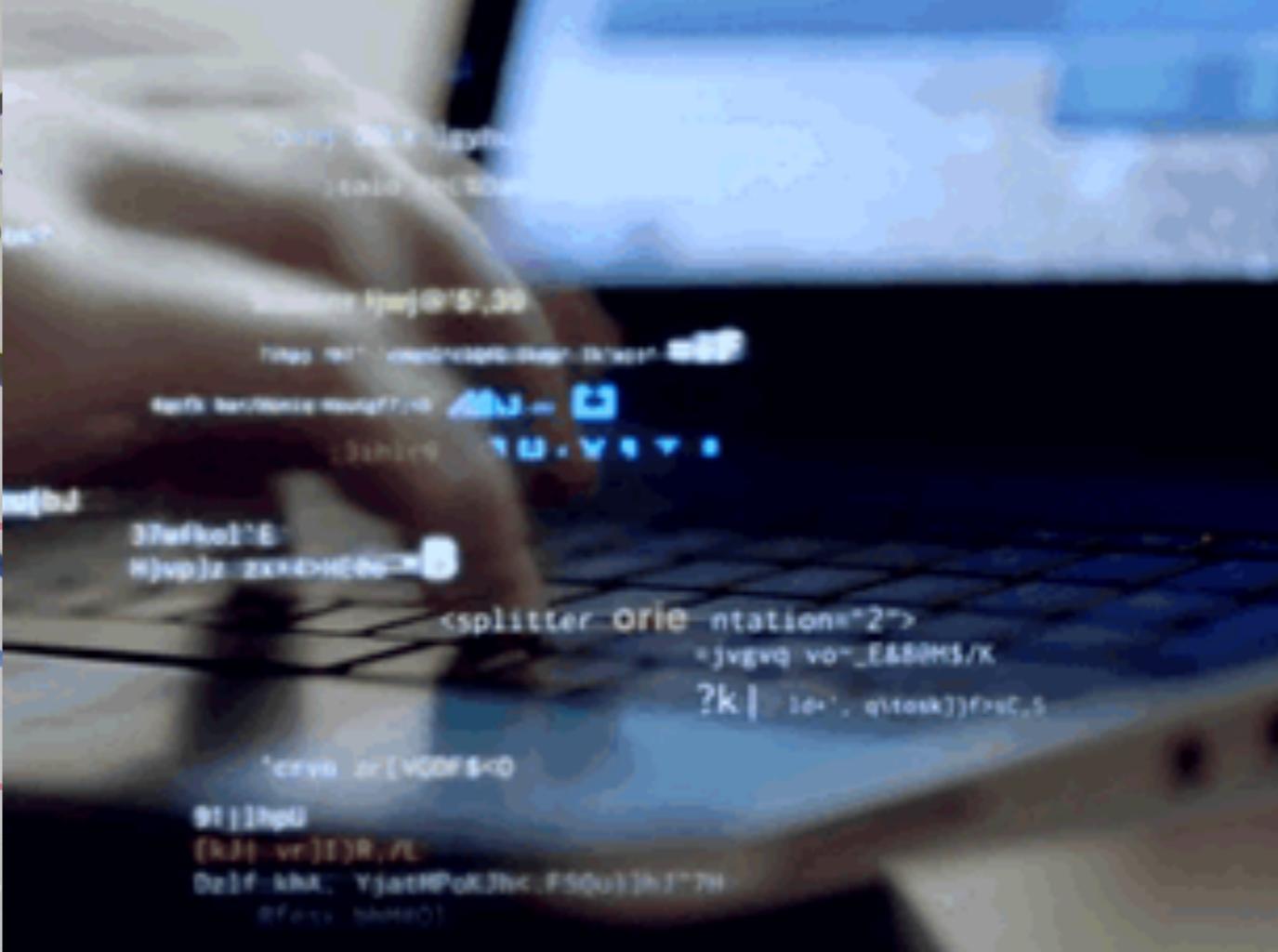
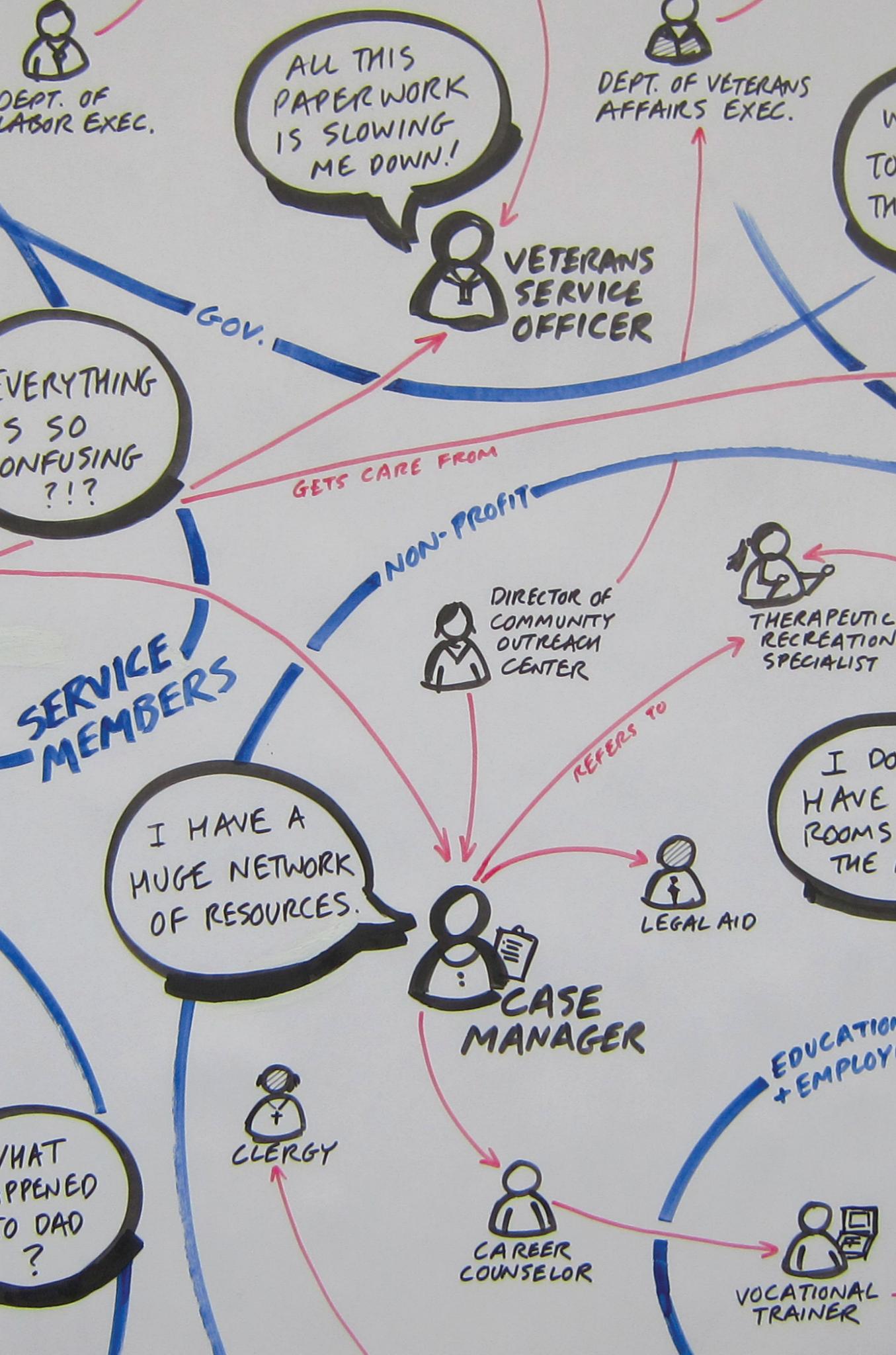
(C) COPYRIGHT METAMAGIC GLOBAL INC., NEW JERSEY, USA

DOMAIN-DRIVEN DESIGN (DDD) IS AN APPROACH TO SOFTWARE DEVELOPMENT FOR COMPLEX NEEDS BY CONNECTING THE IMPLEMENTATION TO AN EVOLVING MODEL. THE PREMISE OF DOMAIN-DRIVEN DESIGN IS THE FOLLOWING:

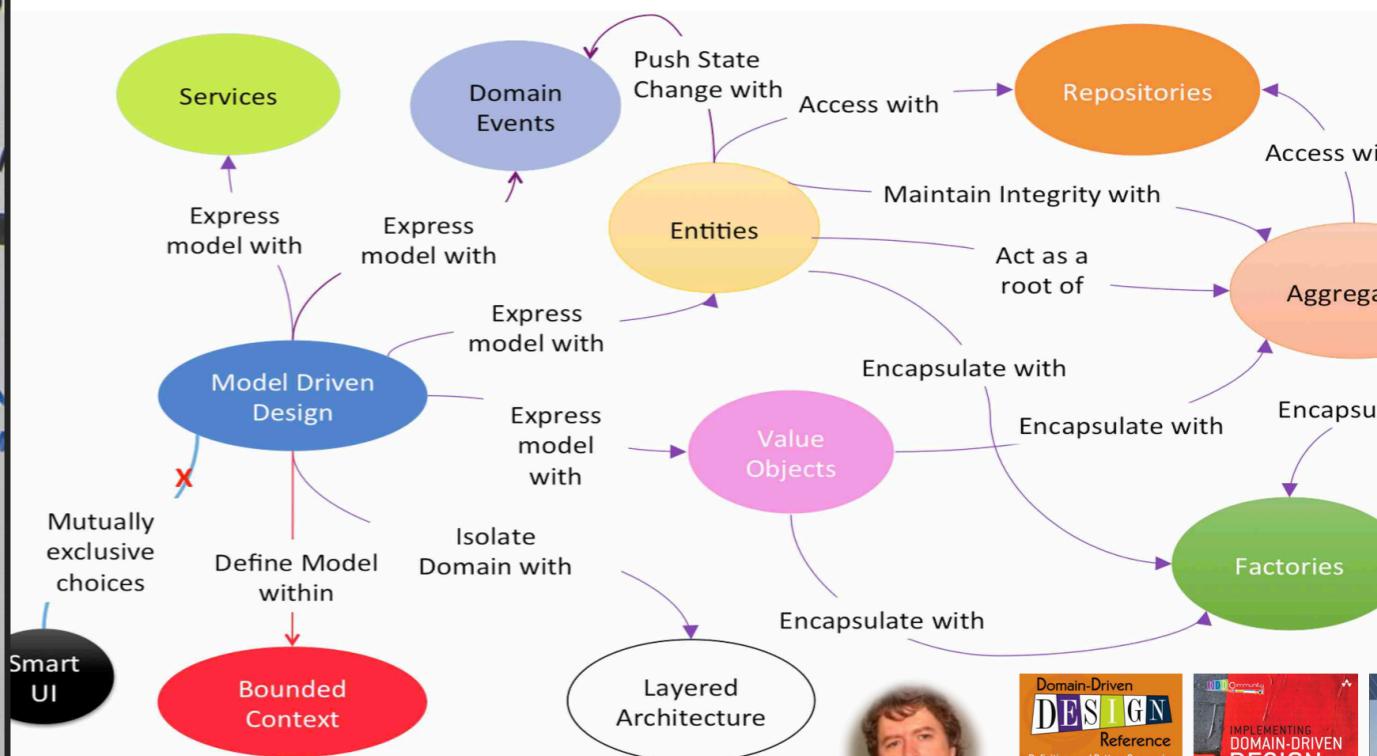
- 1. PLACING THE PROJECT'S PRIMARY FOCUS ON THE CORE DOMAIN AND DOMAIN LOGIC;**
- 2. BASING COMPLEX DESIGNS ON A MODEL OF THE DOMAIN;**
- 3. INITIATING A CREATIVE COLLABORATION BETWEEN TECHNICAL AND DOMAIN EXPERTS TO ITERATIVELY REFINE A CONCEPTUAL MODEL THAT ADDRESSES PARTICULAR DOMAIN PROBLEMS.**

COMBINING

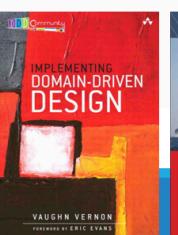
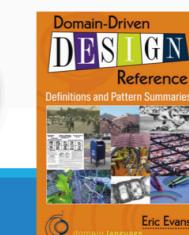
DESIGN THINKING AND
DOMAIN DRIVEN DESIGN



Domain Driven Design



Source: Domain-Driven Design Reference by Eric Evans



A photograph of a person working on a wall covered in a collage of various images, including magazine clippings and photographs. The person is reaching up to add a new item to the board. The board is filled with text like "TRA STRO", "TRA SMOOTH", "TRA SOFT", and "WALKING".

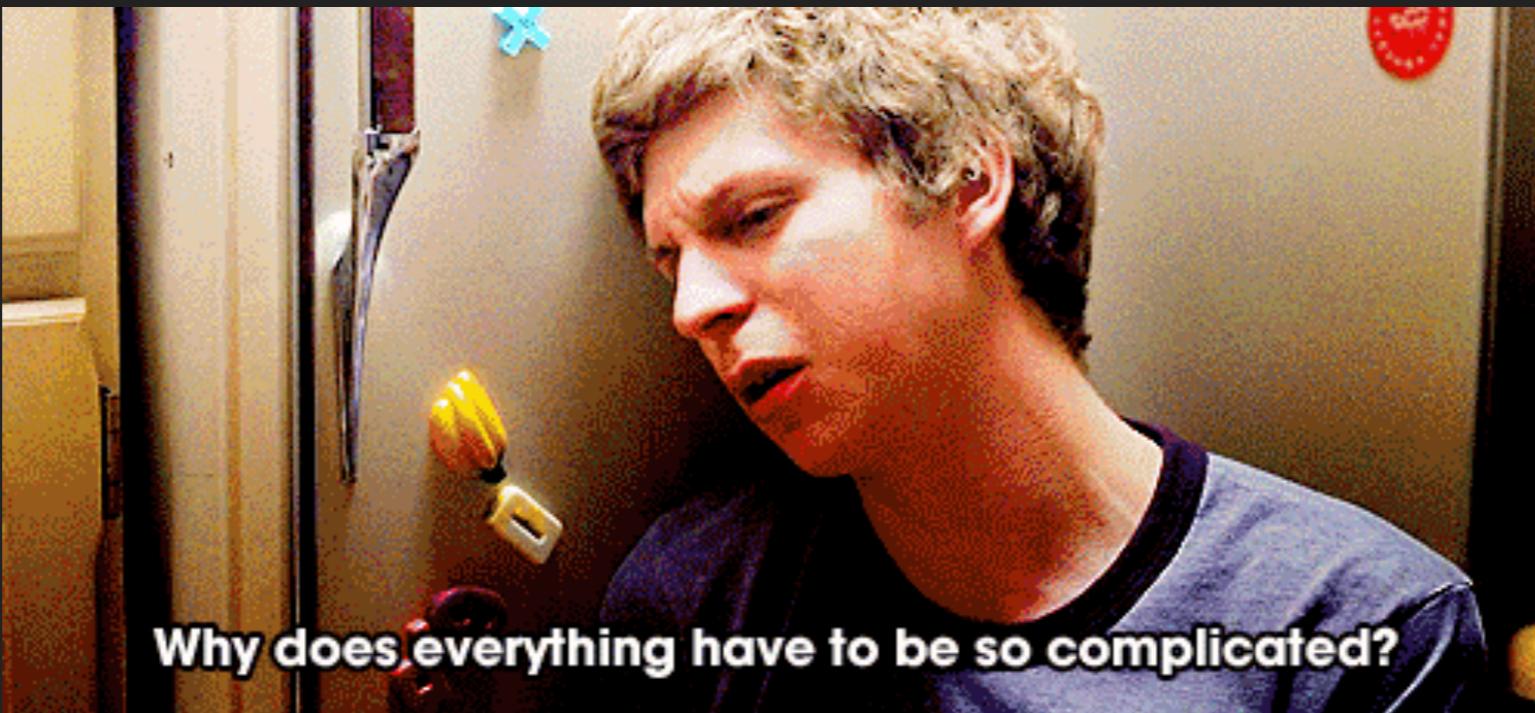
DESIGN THINKING / DDD

IT'S GONNA BE MESSY



DESIGN THINKING/DDD

IT IS GONNA FEEL FAST!



DESIGN THINKING/DDD

IT IS A LARGE TOPIC!



THE PROBLEM

HOSTING AND RUNNING A TECH CONFERENCE

STEP 1

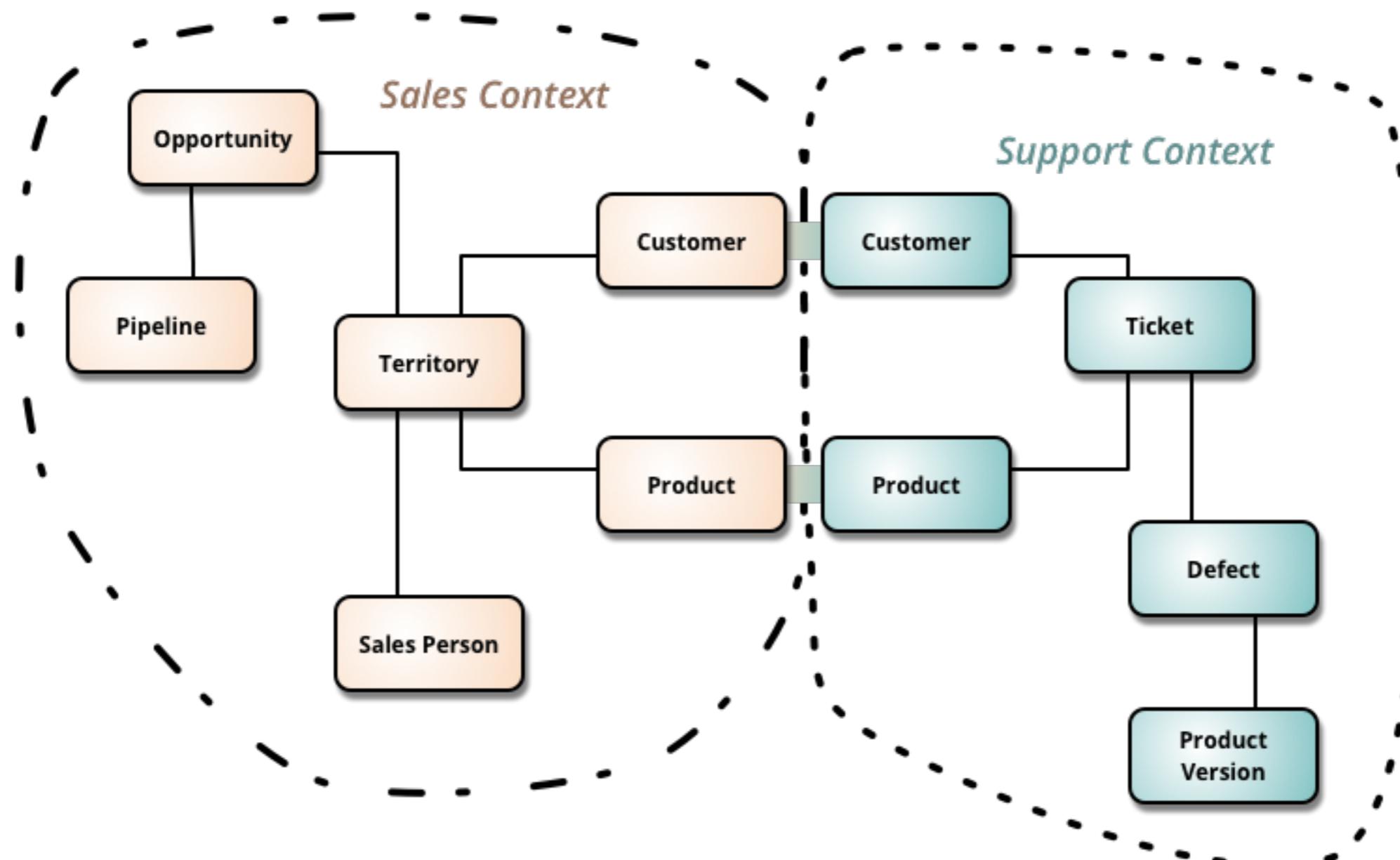
LEARN



LEARN:DDD:PROBLEM SPACE

CONTEXT BOUNDING

CONTEXT BOUNDING



LEARN:DDD:PROBLEM SPACE

HOW DO WE START DEFINING
THESE CONTEXTS?



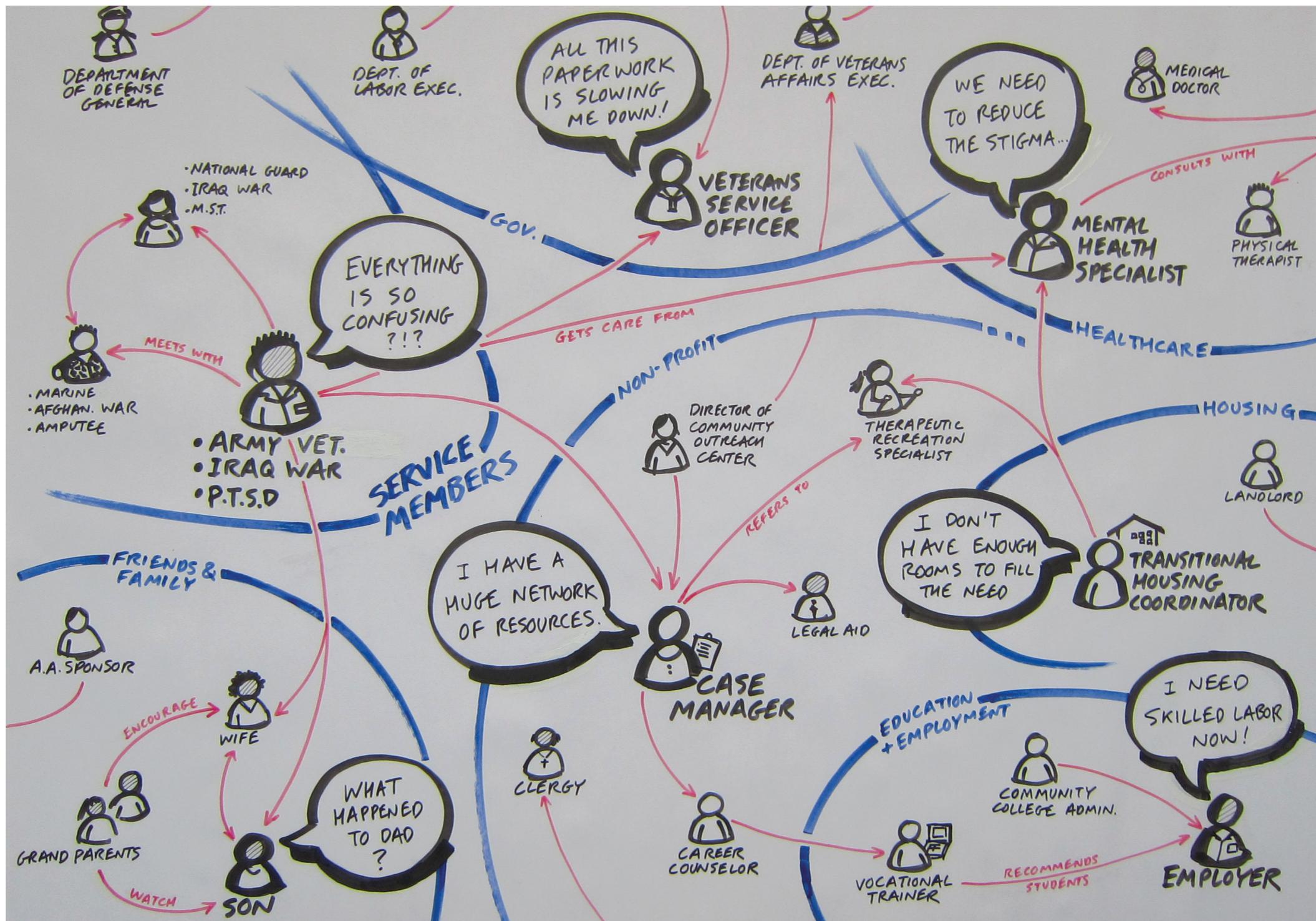
LEARN:METHOD

STAKEHOLDER MAPPING

GOALS OF THIS EXERCISE

- ▶ Define working relationships in an organization.
- ▶ Identify processes that cross groups.
- ▶ Start to create a list of people whom are domain experts in different parts of your organization.
- ▶ Try to identify core business competencies and ancillary needs.
- ▶ Create a first pass at the bounded context diagram.

AN EXAMPLE OF A STAKEHOLDER MAPPING



HOW TO CREATE A STAKEHOLDER MAPPING

- ▶ Identify a subject area to focus on.
- ▶ Convene a diverse team of collaborators.
- ▶ Generate a very broad list of stakeholders.
- ▶ Draw a symbol of a person for each different type.
- ▶ Write a speech-bubble to summarize their mindset.
- ▶ Write a label describing their role or title.
- ▶ Draw lines with arrows connecting the stakeholders.
- ▶ Write a label on the line to describe relationships.
- ▶ Circle and label related groupings.

ORGANIZE INTO TEAMS

- ▶ Teams of 4-5.
- ▶ Try to work with someone you haven't before.
- ▶ Split up people who understand design thinking or domain driven design well and work with people who may be new to these areas.

STAKEHOLDER MAPPING OF CONFERENCES

- ▶ Who all is involved, organizers, volunteers, attendees, hotel staff, etc...
- ▶ What do they care about?
- ▶ How much influence do they have?
- ▶ When are they involved?

LEARN:DDD:PROBLEM SPACE

UBIQUITOUS LANGUAGE

IN THIS STORY WE WILL TRACK THE LOCATION OF THE USER ONCE THEY PLACE A RIDE REQUEST.

Project Manager

HM... SO ONCE A USER HAS A RIDE REQUEST WE UPDATE THEIR LOCATION AT A CERTAIN INTERVAL BY POSTING TO THE /USER/LOCATION END POINT AT A REGULAR INTERVAL AND MAKE THE INFORMATION AVAILABLE IN THE UI?

Engineer

YUP WE WILL UPDATE THE VEHICLE OBJECT THAT WAY WE CAN KEEP TRACK OF THE USER.

Engineer 2

WHAT ARE THEY GOING TO IMPLEMENT?

- ▶ Who is the user in this scenario? There are 2 potentially?
- ▶ Who has access to the location?
- ▶ How do you keep track of locations for different types of users?
- ▶ How are vehicle and user related? Are we sure this user has a vehicle or is it the vehicle the user requested?

UBIQUITOUS LANGUAGE IS THE TERM ERIC EVANS USES IN DOMAIN DRIVEN DESIGN FOR THE PRACTICE OF BUILDING UP A COMMON, RIGOROUS LANGUAGE BETWEEN DEVELOPERS AND USERS. THIS LANGUAGE SHOULD BE BASED ON THE DOMAIN MODEL USED IN THE SOFTWARE – HENCE THE NEED FOR IT TO BE RIGOROUS, SINCE SOFTWARE DOESN'T COPE WELL WITH AMBIGUITY.

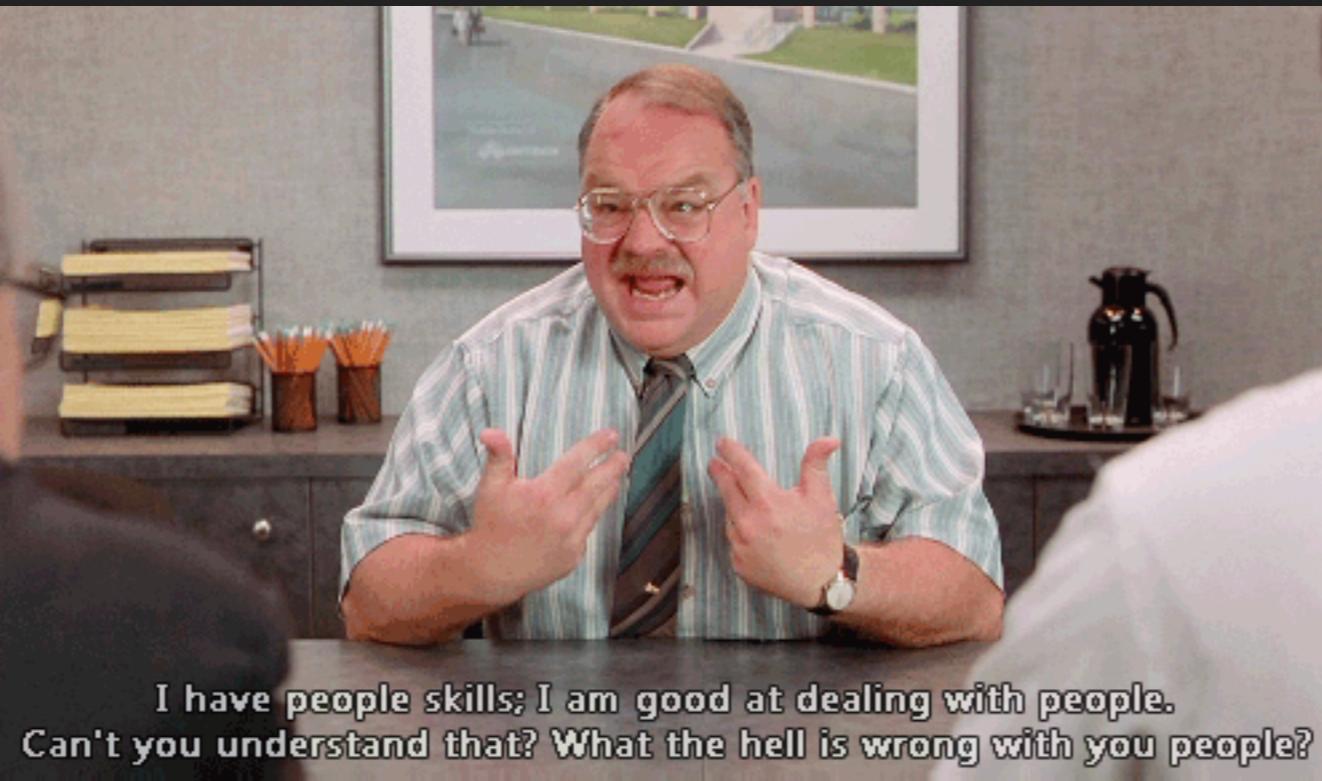
Martin Fowler

THINGS TO CONSIDER IN UBIQUITOUS LANGUAGE COLLECTION

- ▶ A difference in language, for example using the same name to describe different things
- ▶ Can you identify actors?
- ▶ Can you identify work object? A spreadsheet needs to be updated, or a route taken?
- ▶ Triggers for work to be completed, daily, weekly, on demand?
- ▶ Are actions occurring one way or two ways?
- ▶ Nouns often map to an object or Database entity.
 - ▶ Can you map out any entity relationships?
- ▶ Verbs often signify process, how do verbs relate to nouns? Can you capture this?
 - ▶ Verbs can also map to a larger function of the system.
- ▶ Are there verbs or nouns that we could use to help the user navigate any new tooling?
- ▶ Is the user presenting any sort of logical hierarchy to processes or entities we should reflect in the tools UI structure? Can these also be captured in code/bounded context?

LEARN:METHOD

HOW DO WE DEFINE A
LANGUAGE?



I have people skills; I am good at dealing with people.
Can't you understand that? What the hell is wrong with you people?

LEARN:METHOD

INTERVIEWING

INTERVIEWING QUICK GUIDE

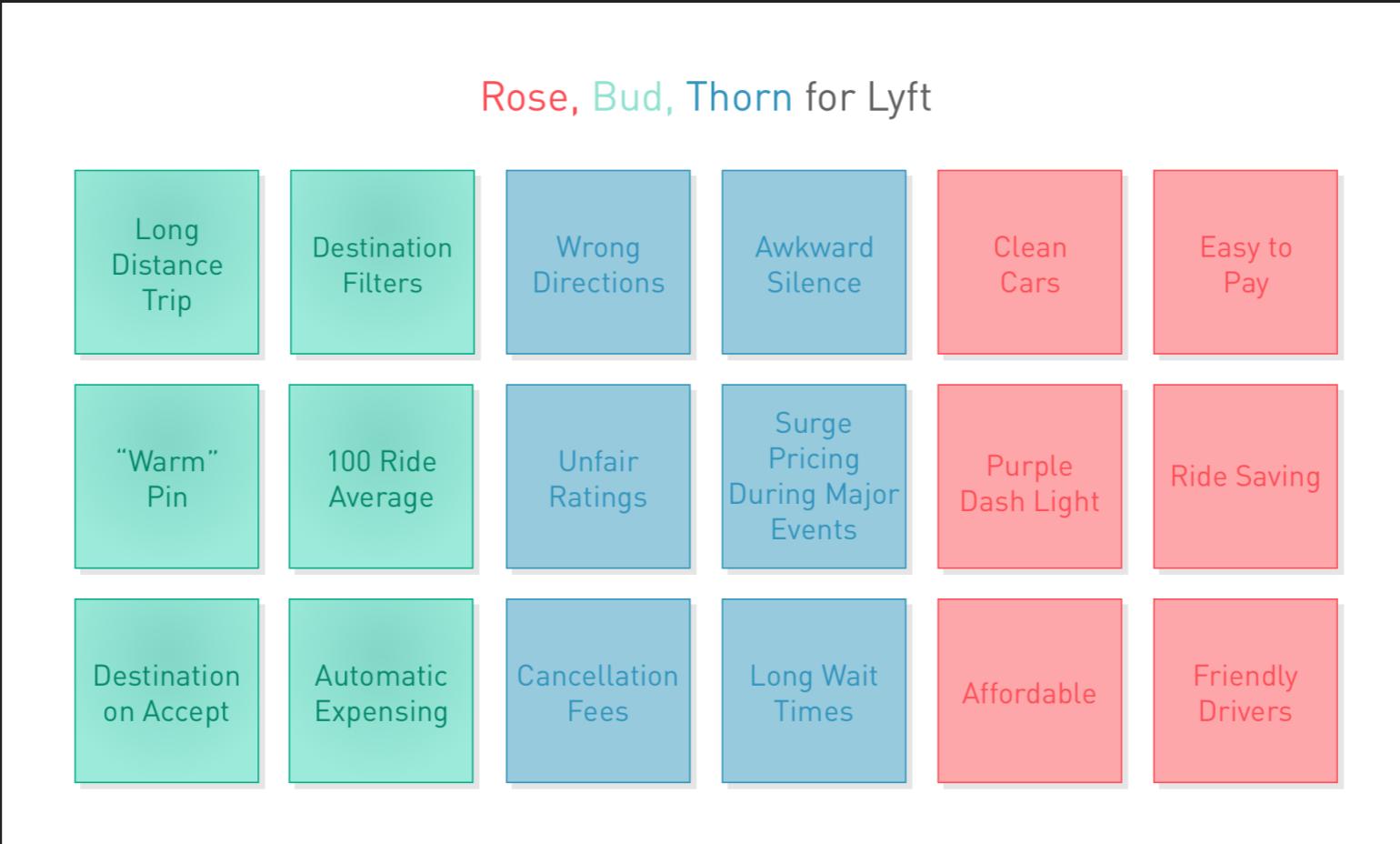
- ▶ Identify a topic for investigation.
- ▶ Prepare your questions and recording equipment.
- ▶ Determine your criteria for selecting interviewees.
- ▶ Identify the people you will interview.
- ▶ Set a time and place to meet them.
- ▶ Introduce yourself and the purpose. Obtain consent.
- ▶ Start with easy questions, then draw out specifics.
- ▶ Resist the urge to fill space with your own context.
- ▶ Listen carefully and take good notes.
- ▶ Thank each participant.



MAKE GIFS AT GIFOUP.COM

LEARN:METHOD:INTERVIEW

REMEMBER WE HAVE 2 EARS AND 1 MOUTH, USE THEM IN THAT PROPORTION.



LEARN:METHOD:INTERVIEW ADD-ON

ROSE BUD THORN

ROSE, BUD, THORN

- ▶ Rose = Pink (indicates things that are positive).
- ▶ Thorn = Blue (indicates things that are negative).
- ▶ Bud = Green (indicates things that have potential).
- ▶ Put one idea on each sticky note.
- ▶ Capture as many data points as you can.
- ▶ Avoid the urge to offer solutions at this point. Write them down and keep them in your pocket.

START INTERVIEWS

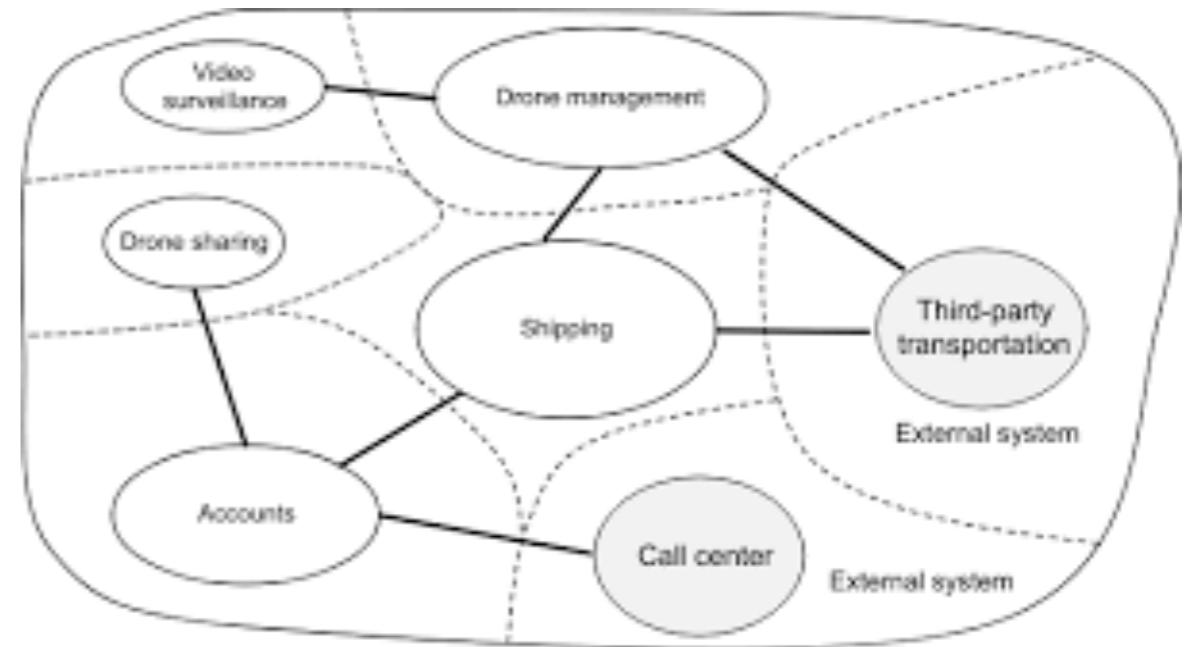
- ▶ 2 note takers, Rose, Bud, Thorn
- ▶ 1-2 language/process capturer, Yellow stickies
- ▶ 1 interviewer
- ▶ If anyone has experience as a conference organizer, volunteer or speaker please let the group know. Alternatively talk about your experiences attending conferences.
- ▶ 2 interviews completed.
- ▶ Learn about the interviewees conference experiences.

LEARN:DDD:METHOD

COMBINING UBIQUITOUS LANGUAGE
AND BOUNDED CONTEXTS

DELIVERABLES

- ▶ Bounded Context Diagrams.
- ▶ Glossary.
- ▶ Namespaces for modules/classes.
- ▶ Identify Generic Domain and subdomains.
- ▶ Diagrams of common user workflows.
- ▶ Did the interviewee presented a good test scenario?
- ▶ Has the interviewee brought up any interesting edge cases?



LEARN:DDD

HOW DO WE CREATE A BOUNDED
CONTEXT AND UBIQUITOUS LANGUAGE?

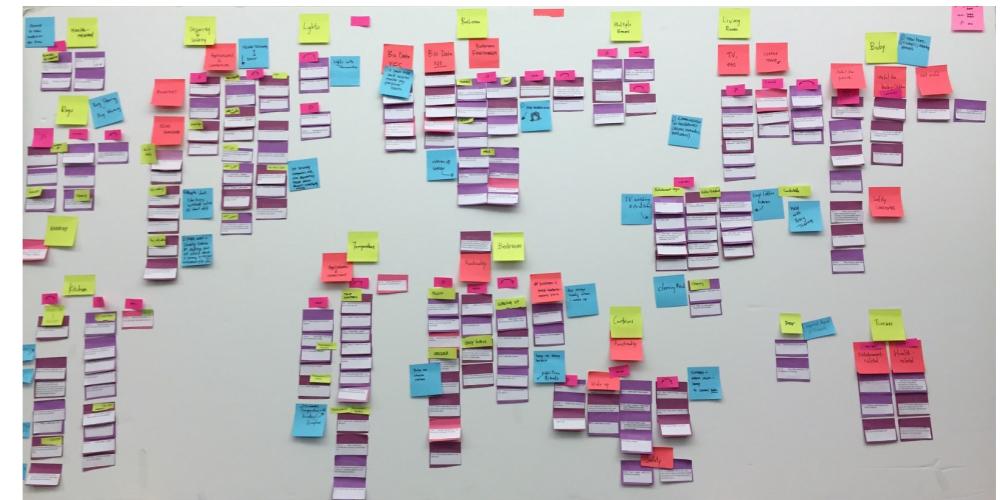


LEARN:METHOD

AFFINITY CLUSTERING

AFFINITY CLUSTERING

- ▶ Have one person describe, then place, an item.
 - ▶ Invite others to place similar items in proximity.
 - ▶ Repeat the pattern until all items are included.
 - ▶ Discuss and rearrange items as groupings emerge.
 - ▶ Label the clusters that finally take shape.
 - ▶ Don't label the clusters too early. They may shift.
 - ▶ Look for opportunities to create sub-groupings.
 - ▶ Consider using color to code different types of data.
 - ▶ Avoid the urge to offer solutions at this point. Write them down and keep them in your pocket.
 - ▶ You can affinity cluster into your bounded contexts, but also feel free to group by other means.



REVISIT YOUR DOMAIN EXPERT

- ▶ Share your bounded context findings.
- ▶ Share your glossary.
- ▶ Get further info about language.
- ▶ Iterate if need be.
- ▶ Avoid solutions at all costs.

STEP 2

DEFINE

DEFINE:METHOD

STATEMENT STARTERS

STATEMENT STARTERS

- ▶ Identify a set of problems or opportunities.
- ▶ State each issue in the form of a short phrase.
- ▶ Add a “starter” to the beginning of each phrase.
- ▶ Example 1: How might we_____?
- ▶ Example 2: In what ways might we_____?
- ▶ Example 3: How to_____?
- ▶ Pick the best statement starter for each problem.
- ▶ Use the new phrasing as a basis for ideation.
- ▶ Don’t embed solutions into problem statements.

STEP 3

IDEATION



IDEATION

ROLE IN DDD



METHOD: IDEATION

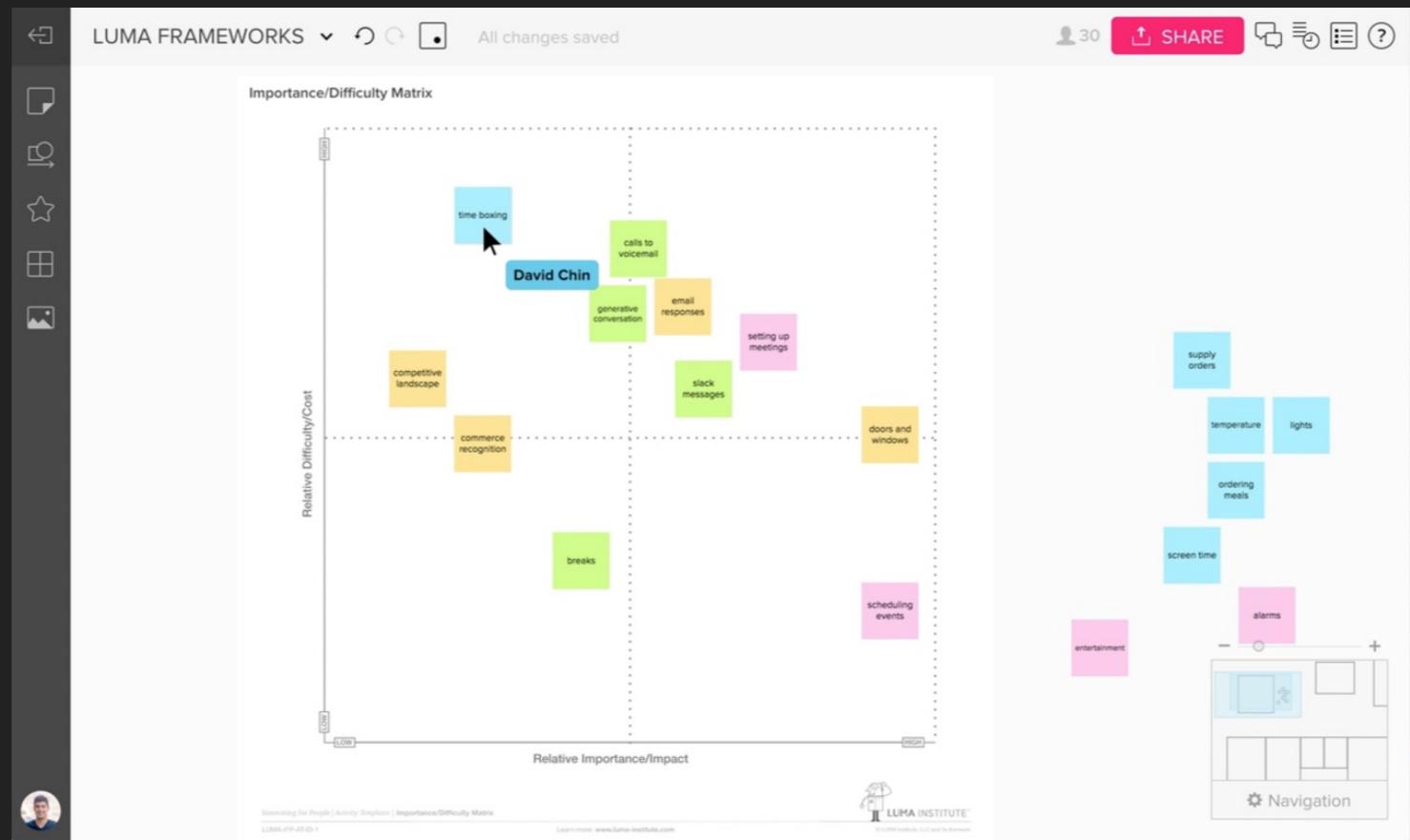
CREATIVE MATRIX

CREATIVE MATRIX

- ▶ Make a poster showing a large grid (max. 5 x 5 cells).
- ▶ Designate columns: Categories related to people.
- ▶ Designate rows: Categories for enabling solutions.
- ▶ Form teams. Hand out grids. Introduce the topic.
- ▶ Give each participant a pen and a sticky note pad.
- ▶ Ask them to ideate at the intersections of the grid.
- ▶ Instruct them to write one idea per sticky note.
- ▶ Start the clock. Limit the time to 15-20 minutes.

The image shows a hand-drawn Creative Matrix grid. At the top left, it says "How might we make our fruit store a better place to visit". The grid has 5 columns and 3 rows. The columns are labeled: "families" (with icons of a woman, a man, and two children), "Healthy people" (with a person icon), "people doing crafts" (with a person icon), and "WILD CARD". The rows are labeled: "Ambient" (top row), "character" (middle row), and "Convenient" (bottom row). The grid is drawn with black ink on a white background.

	families	Healthy people	people doing crafts	WILD CARD
Ambient				
character				
Convenient				



METHOD: IDEATION

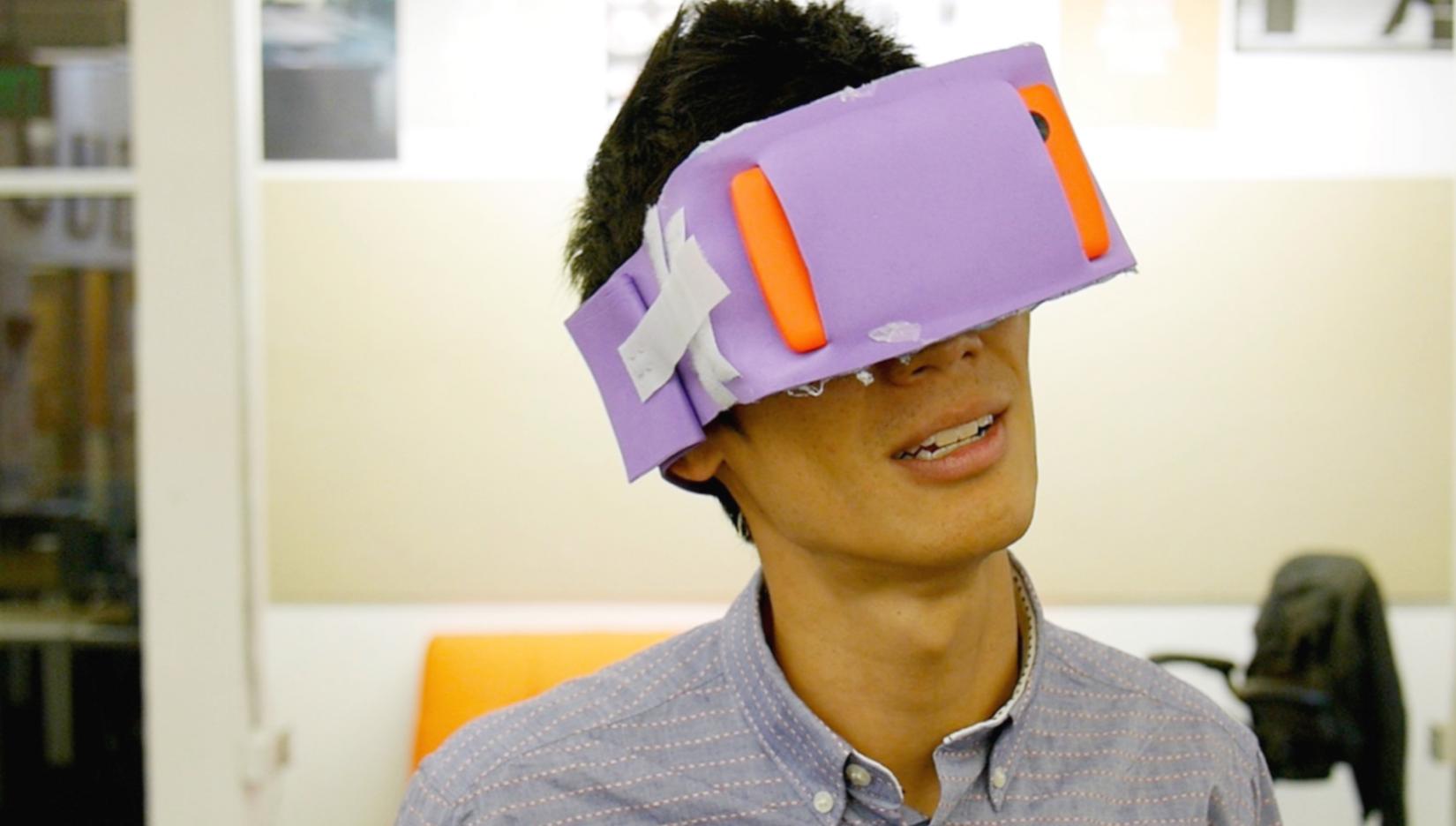
IMPORTANCE/DIFFICULTY MATRIX

IMPORTANCE/DIFFICULTY MATRIX

- ▶ Make a poster showing a large quad chart.
- ▶ Label horizontal axis Importance (or Impact).
- ▶ Label vertical axis Difficulty (or Cost to Execute).
- ▶ Form a team, and gather data for discussion.
- ▶ Plot items horizontally by relative importance.
- ▶ Plot items vertically by relative difficulty.
- ▶ Consider the quadrants where items get placed.
- ▶ Look for related groupings, and set priorities.

STEP 4

MAKE



MAKE

PROTOTYPING

ROUGH BUT READY PROTOTYPES

- ▶ Assemble a small design team. This is a soft d design team.
- ▶ Gather basic materials (e.g., pen, paper, tape, etc.).
- ▶ Consider what you want to learn from the prototype.
- ▶ Select a scenario and a few key tasks to focus on.
- ▶ Build a rough approximation of the concept.
- ▶ Simulate as much functionality as possible.
- ▶ Include some realistic and readable content.
- ▶ Provide a signal for the areas that are incomplete.
- ▶ Consider any processes you discovered during your interviews.



MAKE: PROTOTYPING

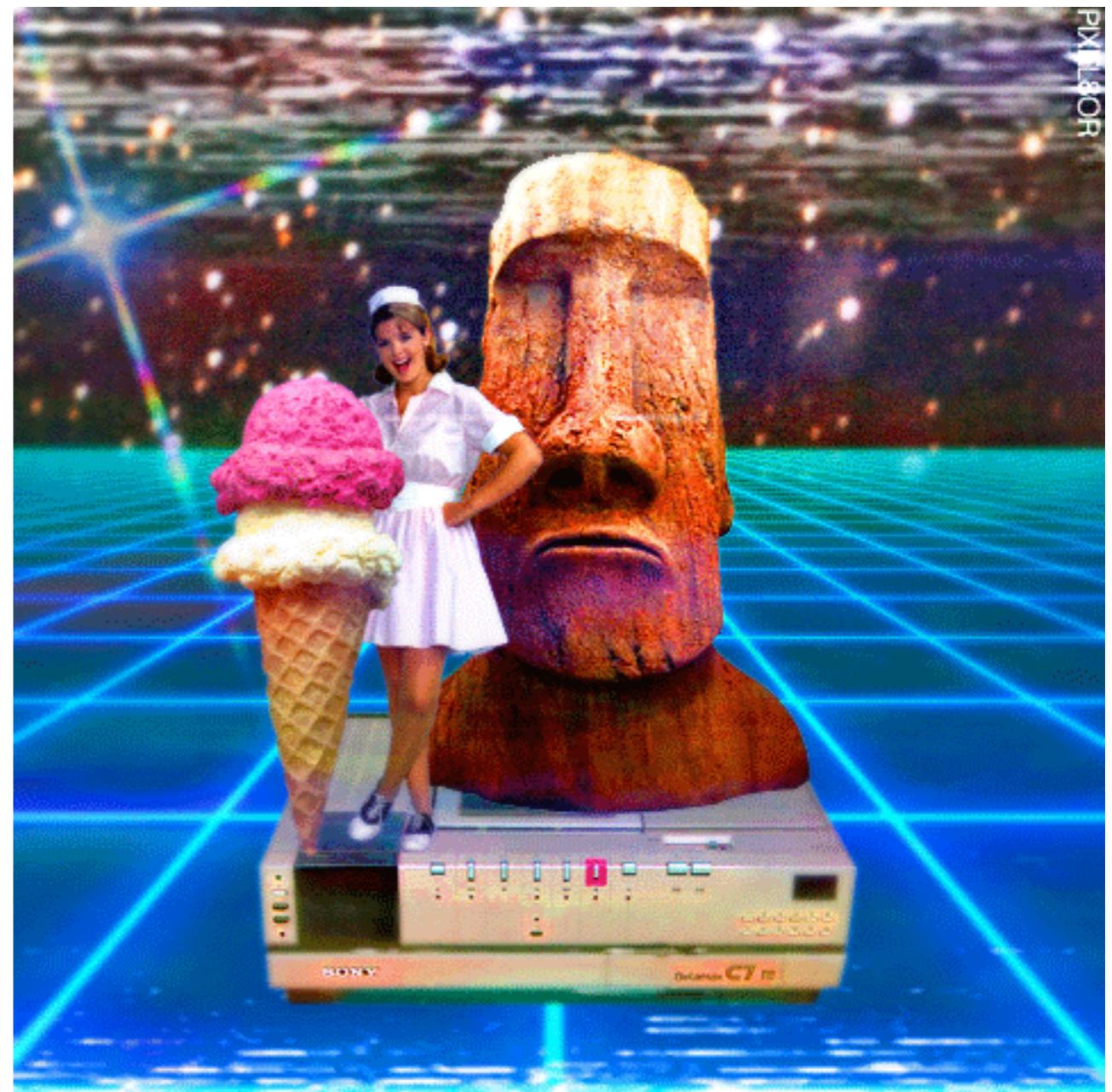
VALIDATE/ITERATE

VALIDATE

- ▶ Run through the prototype with a user.
- ▶ Setup the scenario the user is in.
- ▶ Have the user talk about what they are thinking during prototype use.
- ▶ Have one person be the interface, one person takes notes and one person setup the scenario.

ITERATE

- ▶ Make improvements based on feedback
- ▶ Re-test the prototype.
- ▶ What did you learn?



WRAP UP

PROTOTYPE PRESENTATIONS

CIRCLE TIME

- ▶ What did you learn today?
- ▶ What do you want to do differently after this?
- ▶ What was the most surprising thing about this exercise?
- ▶ How or if would you use this in your work?
- ▶ Have you used similar techniques with any success?

