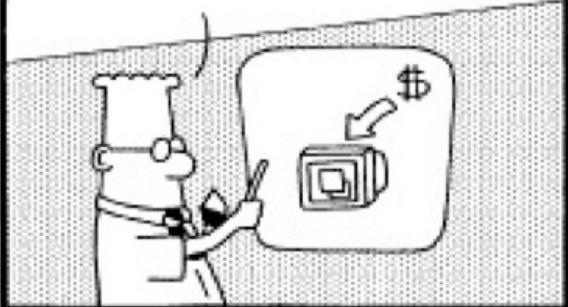


Design Thinking Tools

These tools are intended to help with identifying problems and brainstorming solutions.

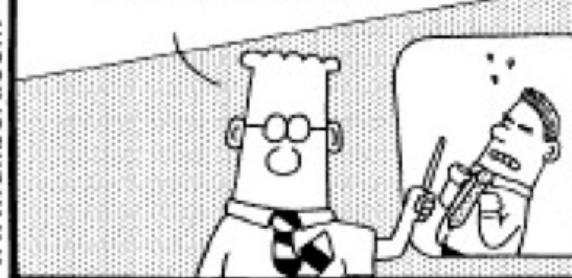
WE CAN FIX OUR
INCOMPREHENSIBLE
USER INTERFACE FOR
A MILLION DOLLARS.



scottadams@aol.com

www.dilbert.com

OR WE CAN CLOSE
OUR EYES AND
WISH REAL HARD
THAT OUR USERS
WON'T CARE.



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HE'S SAVING A
MILLION DOLLARS.
WHAT DID YOU
DO TODAY?



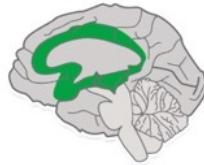
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Universal Design Example



How Humans Learn

AFFECTIVE NETWORKS:
THE **WHY** OF LEARNING

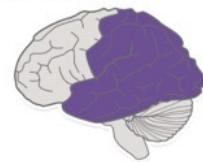


Engagement

For purposeful, motivated learners, stimulate interest and motivation for learning.

[Explore Engagement](#)

RECOGNITION NETWORKS:
THE **WHAT** OF LEARNING

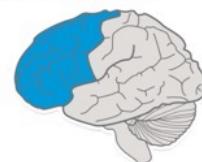


Representation

For resourceful, knowledgeable learners, present information and content in different ways.

[Explore Representation](#)

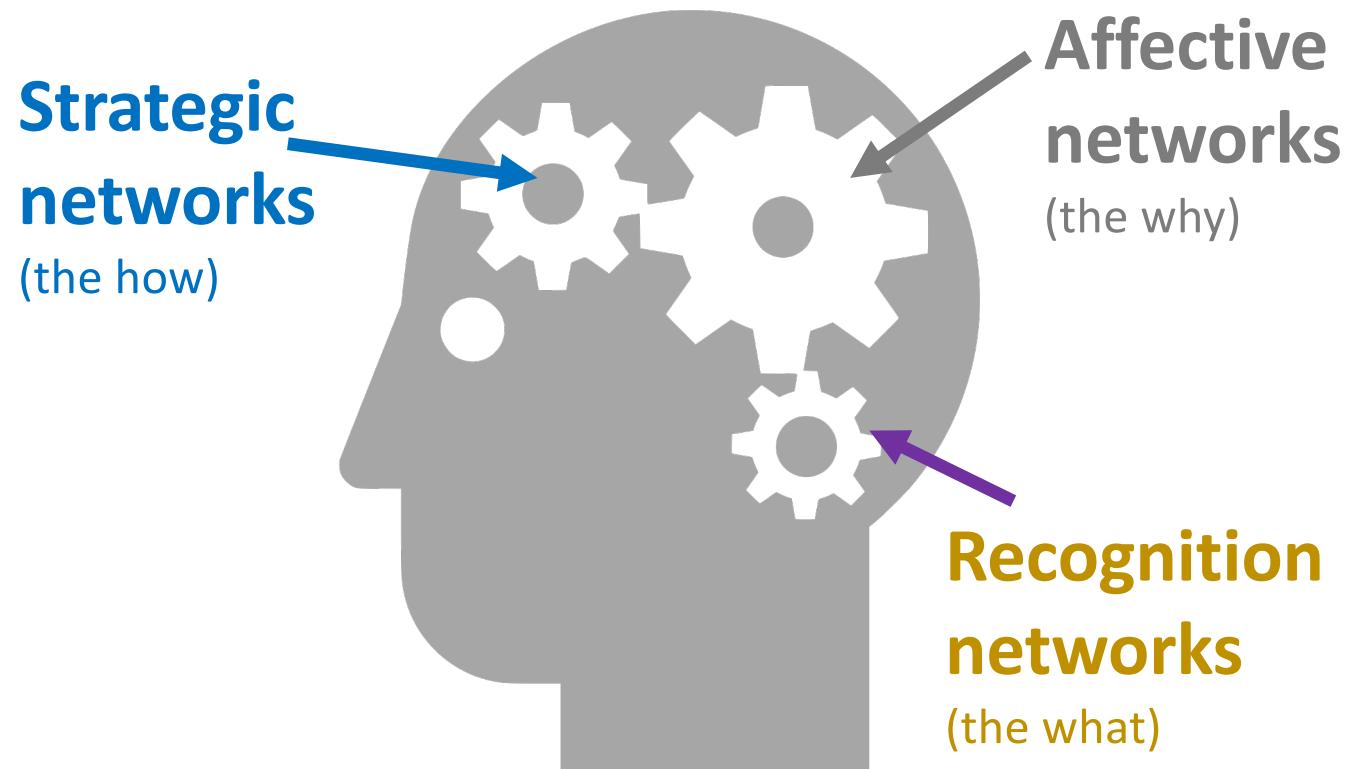
STRATEGIC NETWORKS:
THE **HOW** OF LEARNING



Action & Expression

For strategic, goal-directed learners, differentiate the ways that students can express what they know.

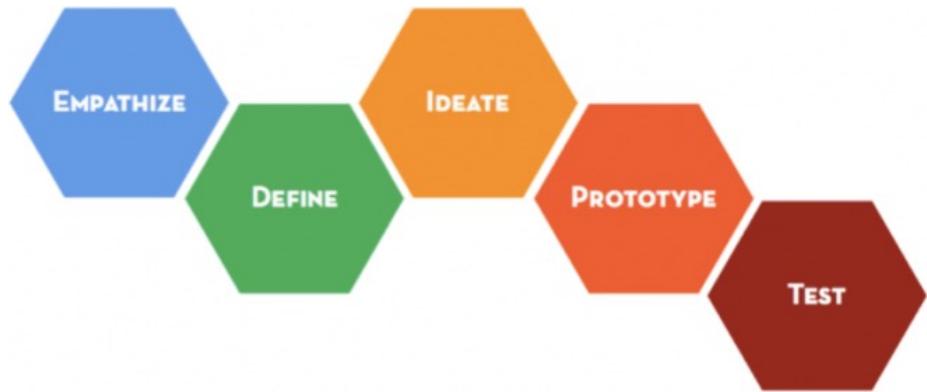
[Explore Action & Expression](#)



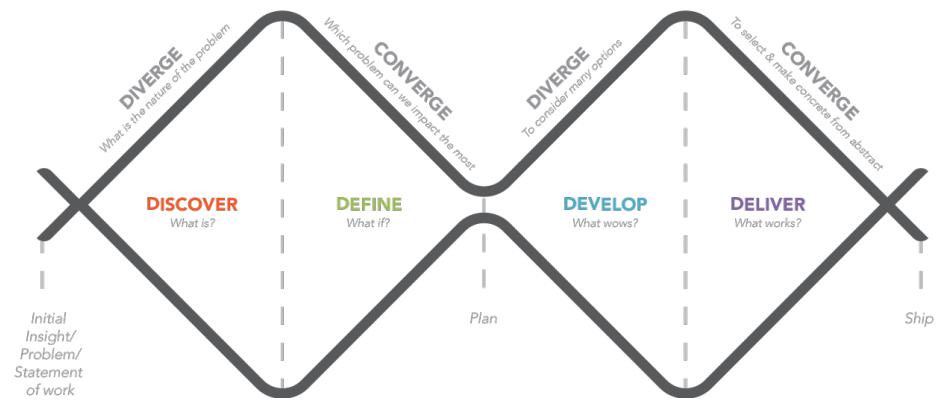
Design Thinking

BACKGROUND

- Popularized by Tim Brown and David Kelley of IDEO and Stanford's d School
- Structured creative problem solving process, but enables innovation and positive impact
- Human-centered design process – truly understand and empathize with user



Design Thinking ‘Double Diamond’ Process Model



Empathize



39 years old
San Diego Area
Married/two kids/Suburban
Comfortable with tech
Interested in trying different modes

Example Persona - Francine

- Travels to client venues/sites regularly
- Typically has to drive or take an Uber/Lyft
- Unable to continue working during travel (sometimes 60+ mins) due to lack of workspace
- Shared Autonomous Vehicles proposes an opportunity to continue working
- Public transportation and Uber/Lyft does not allow the privacy required
- Very likely to use SAV regularly

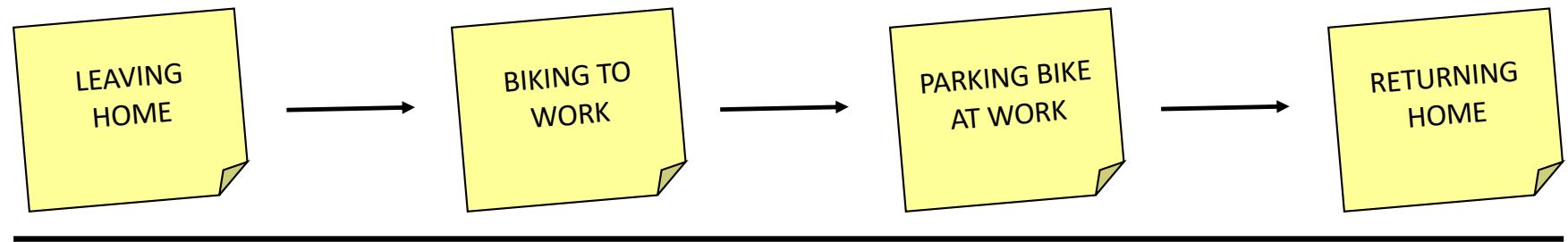
User Journey Mapping

Empathize



BOBBY THE CYCLIST'S JOURNEY

STEP



DOES

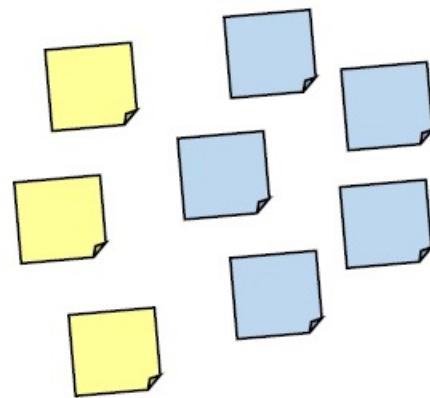
THINK

FEEL

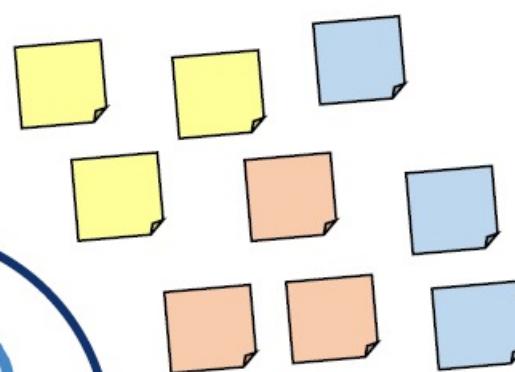
Problem Space

Empathize

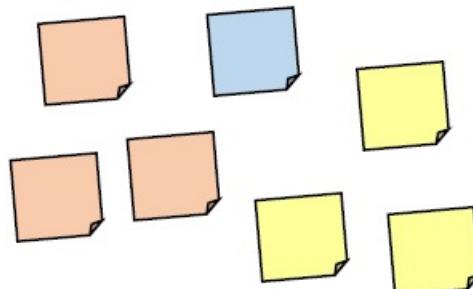
TASKS & GOALS



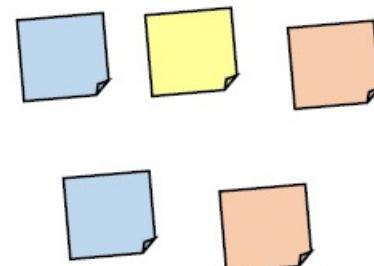
INSIGHTS



PAIN POINTS



HOW MIGHT WE...



Problem Space

Empathize



How Might We

Define

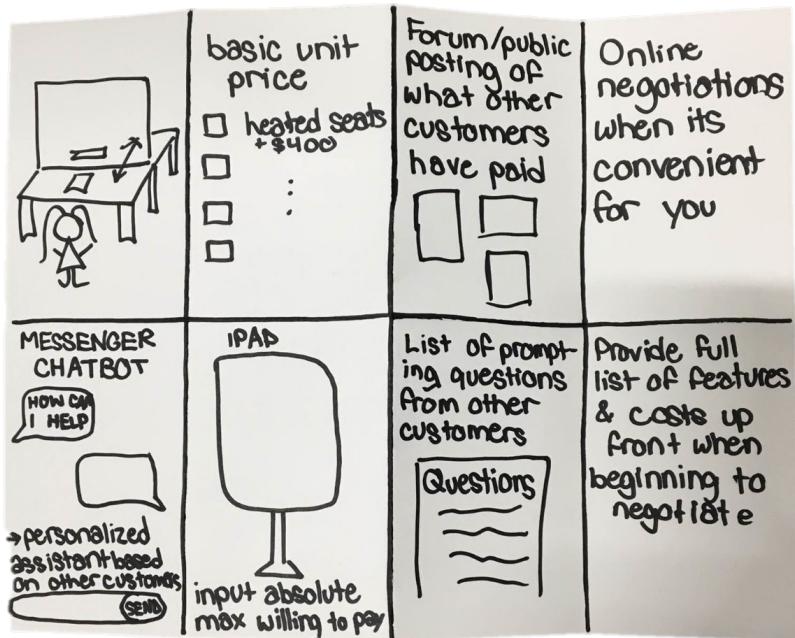
- Come up with ‘How Might We...’ statements to address the pain points and areas of opportunity that you’ve identified.
- Cluster the HMWs into themes

HMW

**Make the AV
experience
memorable?**

Individual Ideation: Rapid Fire

Ideation



- On a piece of cardstock, sketch 8 different ideas to address your HMW statement. (1 min per idea)
- If you get stuck, try applying some constraints.

Individual Ideation: Brain Writing

Ideation

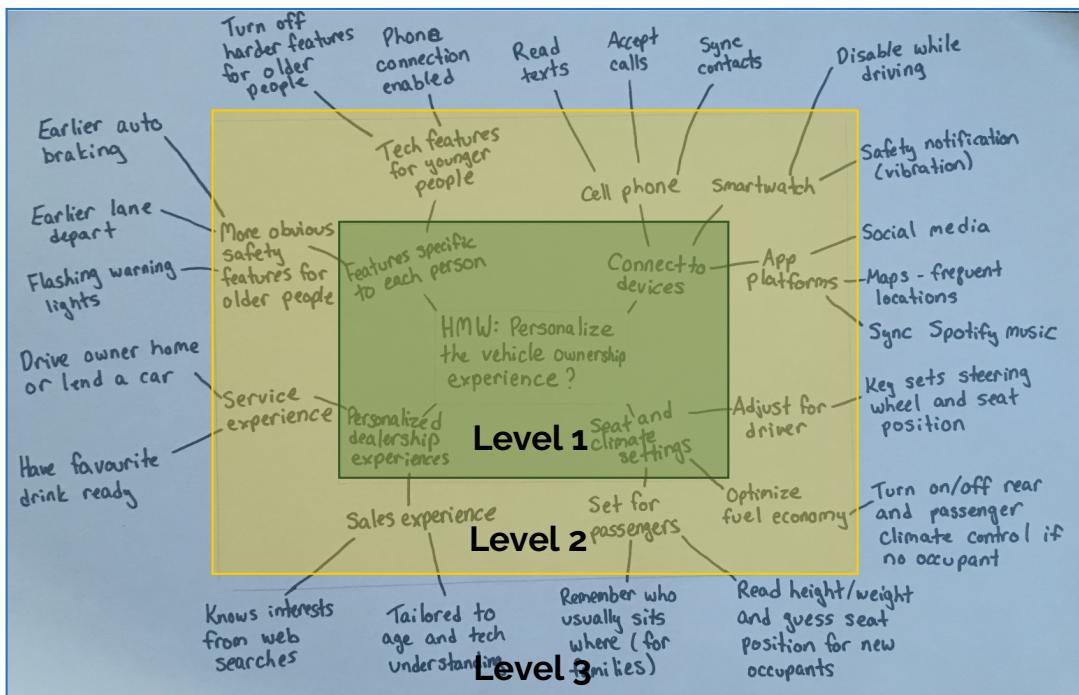
HMW: Prevent drivers from falling asleep at the wheel

- Button drivers can press for "wake me up mode"
↳ loud music, AC blasting, steering wheel randomly vibrates
- Game of "repeat after me" you can play w/ the car → mimic tap/vibration pattern the car gives
- List of games like trivia, role-playing, etc. that can be played to keep user engaged
↳ user would interact w/ car via mic so they can still focus on the road
- Car has built in coffee-machine which provides a warm cup when user presses "wake me up mode"
- "Wake me mode" can track times user needs service to provide users w/ insight on their sleepiest driving times + how long they drive before sleepy + how long they need function on

- Each person has 3 minutes to jot down ideas about **sources for auto heading information that currently exist**
- After the 3 minutes is up, pass your paper to the person to your right
- That person has 3 minutes to add their own ideas and flesh out ones already on the page
- Repeat this process until everyone gets their original paper back

Group Ideation: Speed Mind Mapping

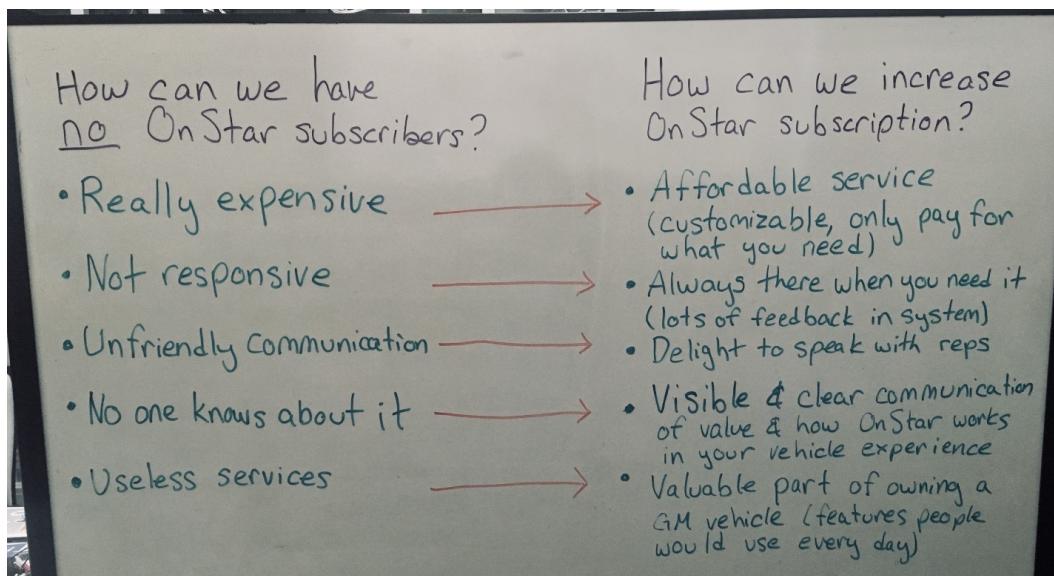
Ideation



- Write your opportunity in the middle of the page
- Use 3 levels of brainstorming to come up with new ideas
 - Level 1 – preliminary ideas – 1 minute
 - Level 2 – expand on ideas – 3 minutes
 - Level 3 – add some details – 3 minutes
- To refine ideas, ask yourself “how” or “what would this look like”
- It’s ok if you don’t do all 3 levels for each branch!

Group Ideation: Reverse Thinking

Ideation



- List the **WORST** possible ways that you ensure **automotive heading integrity**
- Examine how you could reverse these bad ideas to create the best possible solutions

Group Ideation: Industry Swap

Ideation

How might we ... target millennial buyers?

How would Amazon tackle this problem?

- Mobile and web platforms that are easy to use
- Show reviews from people like you
- Show most relevant products first
- Rapid delivery
- Prime sales

What it's good for:

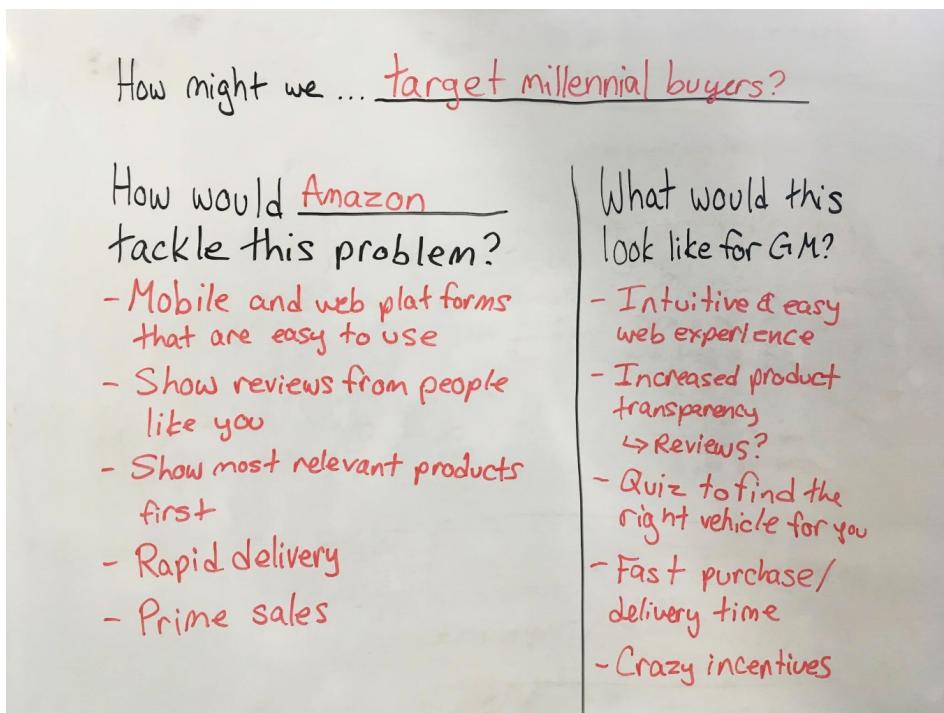
- Brainstorming new ideas as a group

How it works:

- Create the template (shown on the left) on a whiteboard or large chart paper
- Choose a company that is known for having high customer satisfaction
 - Apple, Starbucks, IKEA, and Amazon are good ones!
- Brainstorm ways that another company would tackle your problem

Group Ideation: Industry Swap

Ideation



What it's good for:

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How it works:

- Create the template (shown on the left) on a whiteboard or large chart paper
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 - Apple, Starbucks, IKEA, and Amazon are good ones!
- Brainstorm ways that another company would tackle your problem

Ideation: Group Brainstorming

Ideation

How can the AV experience be customized?

- Gather around a whiteboard with stickies and sharpies
- Present some ideas that have been proposed
- As a team build on the ideas in the form of “Yes and . . .”
- Do not use “No and But”

Lean Canvas

Project Name	03-21-2019
	Iteration #x

Problem Top 3 problems	Solution Top 3 features	Unique Value Proposition Single, clear, compelling message that states why you are different and worth paying attention	Unfair Advantage Can't be easily copied or bought	Customer Segments Target customers	
			Channels Path to customers		
Cost Structure Customer Acquisition costs Distribution costs Hosting People, etc.		Revenue Streams Revenue Model Life Time Value Revenue Gross Margin			
PRODUCT		MARKET			