



Phases and Tools of DT
and *it's relevance In*
Engineering.



GROUP 6

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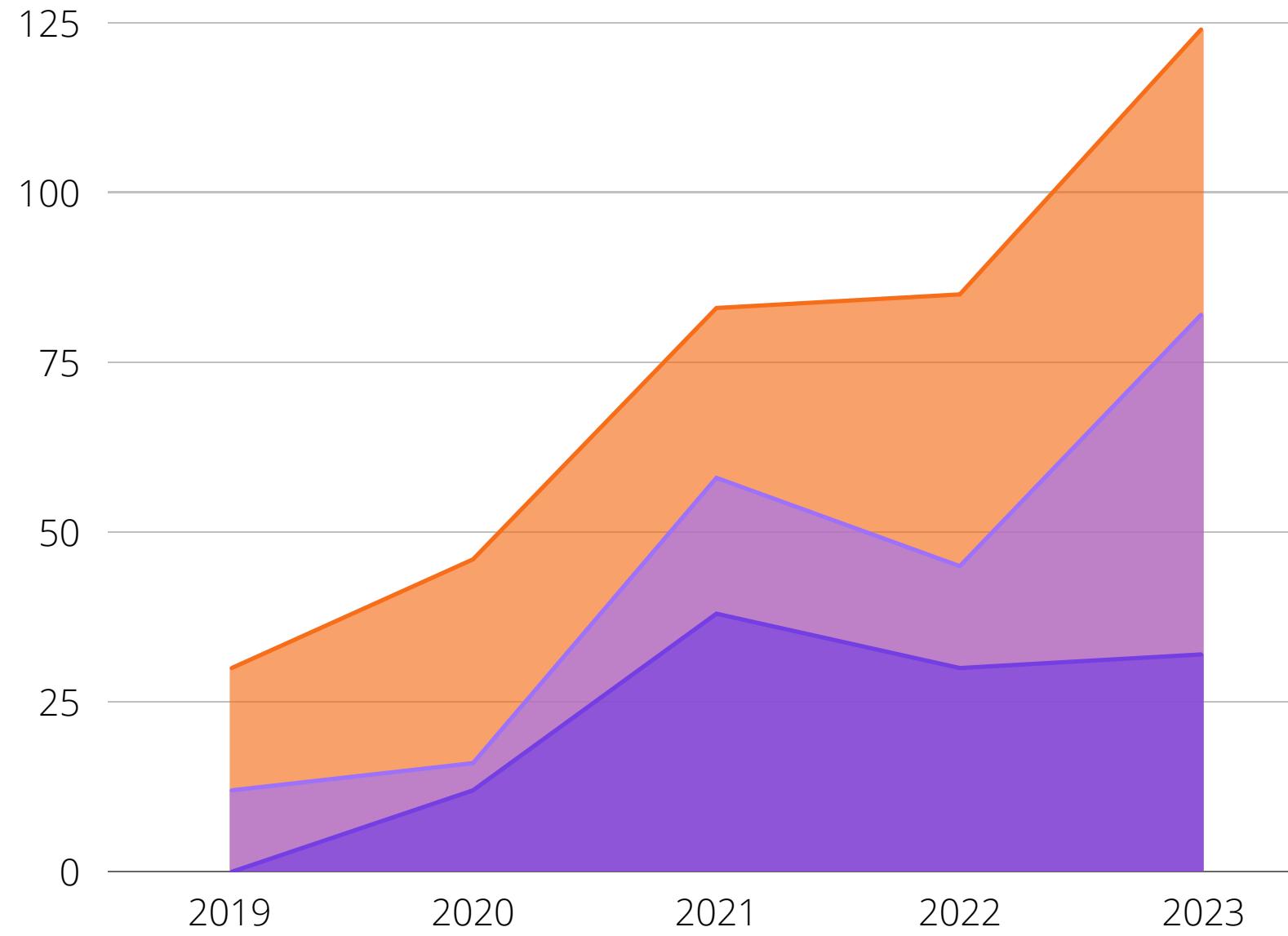
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VED KAPRE - 33

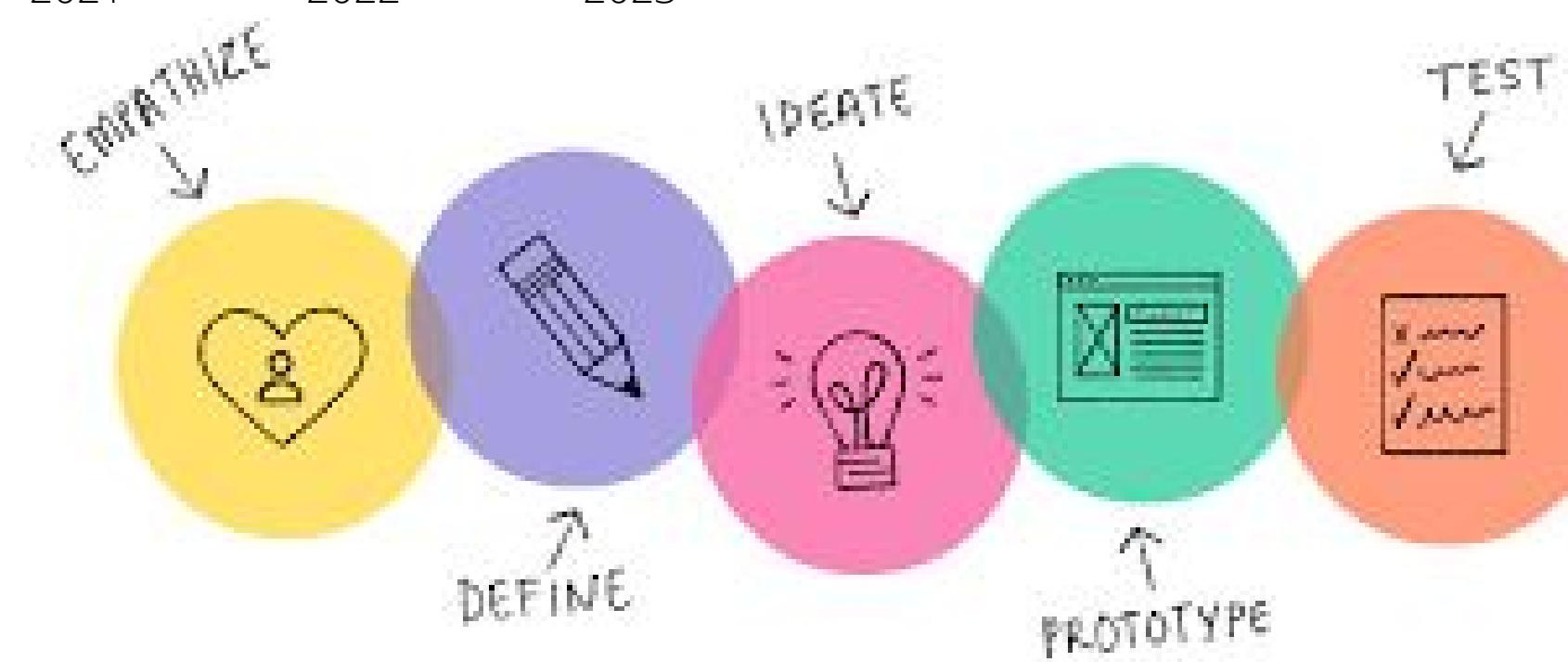
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PHASES



- **EMPATHIZE**
- **DEFINE**
- **IDEATE AND COLABARATE**
- **PROTOTYPE**
- **TEST**



1. EMPATHIZE

- DESIGN TEAMS CONDUCT RESEARCH TO GET PERSONAL GRASPS OF THEIR USERS' NEEDS. THEY SET ASIDE ASSUMPTIONS TO OBTAIN INSIGHTS INTO THE USERS' WORLD BY OBSERVING AND CONSULTING WITH USERS. THIS WAY, THEY CAN UNDERSTAND USERS' EXPERIENCES, MOTIVATIONS AND PROBLEMS.
- EMPATHIZE IS DESIGN THINKING'S FIRST STAGE FOR A REASON. IT'S THE FIRST STEP ON THE ROAD TO THOUGHTFULLY DESIGNED PRODUCTS THAT PROVE THE DESIGNERS BUILT WITH A COMPASSIONATE EYE FOR THEIR USERS.
- A BEGINNER'S MINDSET IS IMPORTANT TO BE ABLE TO VIEW AND ANALYSE SITUATIONS WITH USERS OBJECTIVELY.

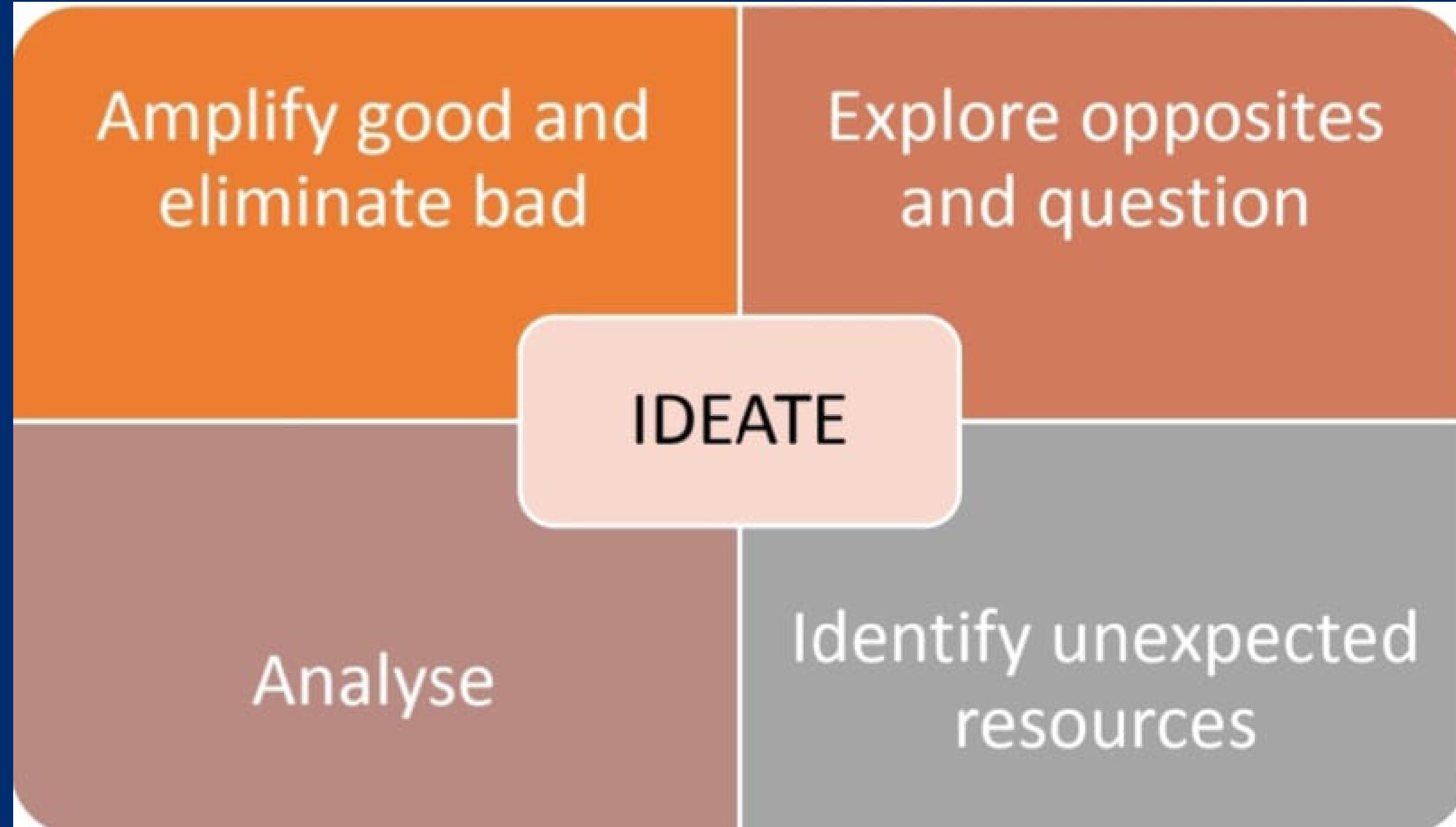
2. Define

- Here you define the problem statement in a human-centered manner.
- Analyze your observations from empathize phase to define the core problem.
- Defining problems and problem statements must be done in a *Human-centered* manner.



3. IDEATE AND COLLABORATE

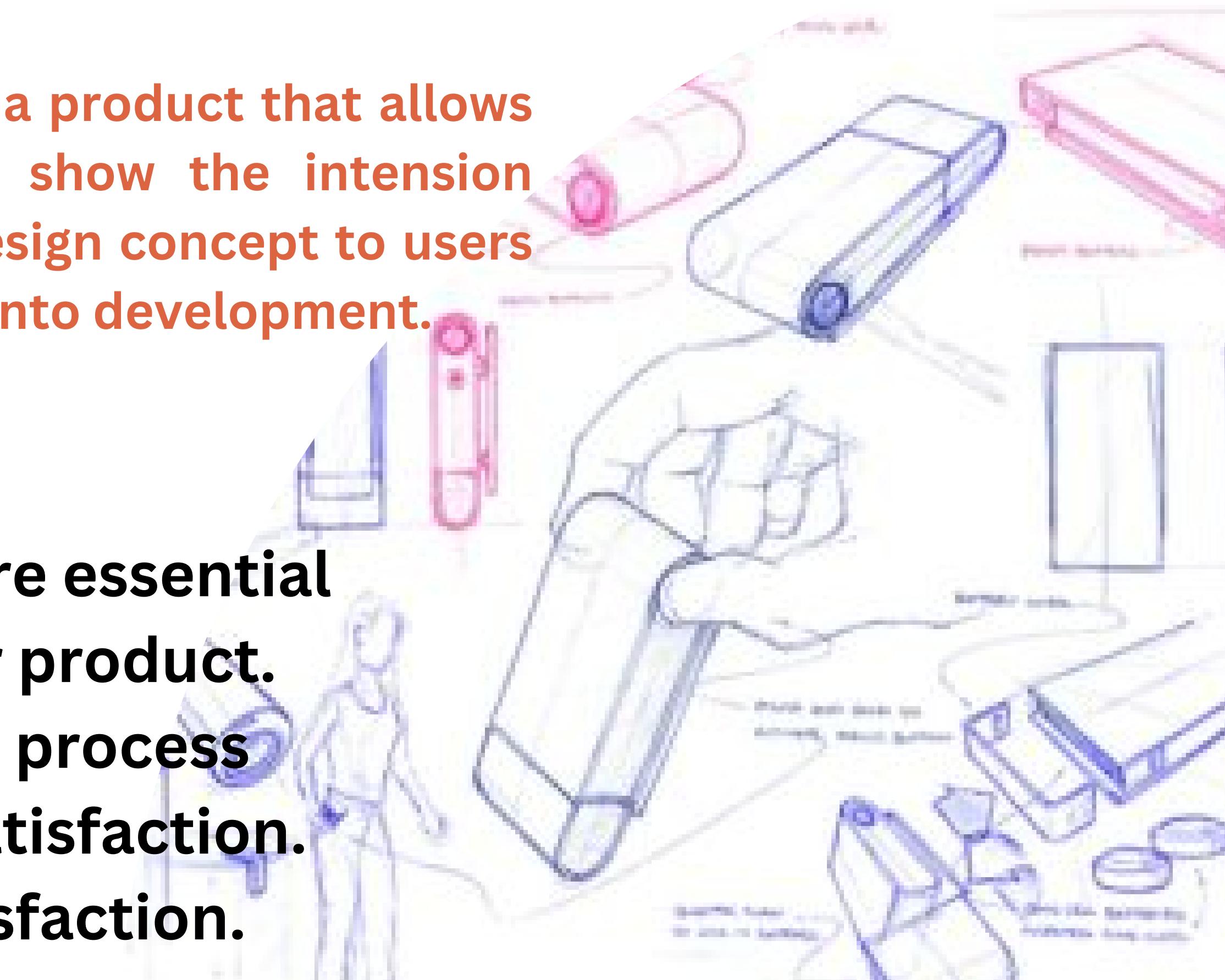
- You collect as many ideas as possible at the start, so your team can investigate and test them by the end
- The ideation stage marks the transition from identifying problems to exploring solutions.
- It is at this stage that the design team engages in ideation activities such as brainstorming to generate ideas for a solution – at this stage, the focus is on generating as many ideas as possible rather than trying to come right out of the gate with quality ideas right away.



4. Prototype

A prototype is a draft version of a product that allows you to explore your ideas and show the intention behind a feature or the overall design concept to users before investing time and money into development.

- Evaluation and feedback are essential
- Users can interact with our product.
- It brings users early in the process
- It gives results in higher satisfaction.
- It give result in higher satisfaction.



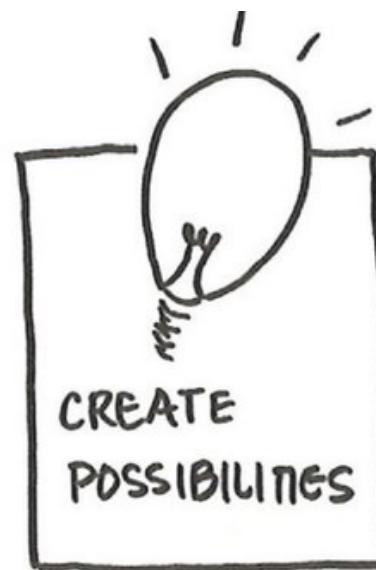
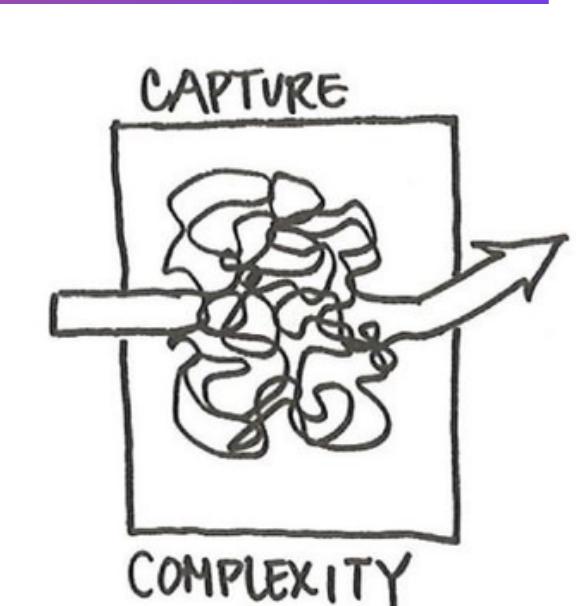
5.TEST

- Testing includes your prototypes in front of real users and seeing how they get on.
- You'll observe your representative users as they interact with your prototype, and gather feedback.
- The testing phase will quickly highlight any design flaws that need to be covered .
- The results of the testing phase will often require you to run through a few more ideation sessions before you create that winning prototype.



VISUALIZATION

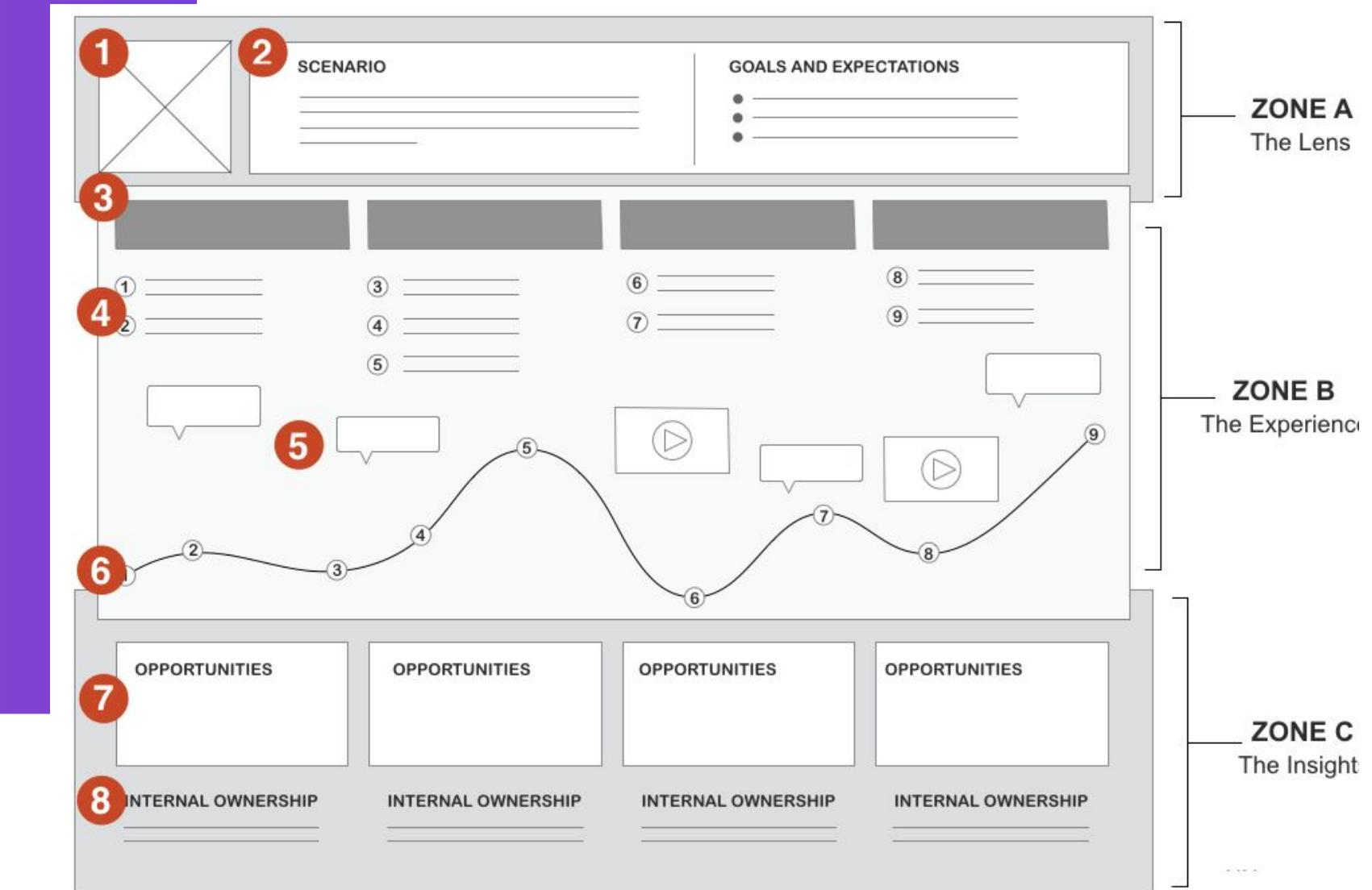
1. VISUALIZATION IS ABOUT USING IMAGES. IT'S NOT ABOUT DRAWING; IT'S ABOUT VISUAL THINKING. IT PUSHES US BEYOND USING WORDS OR LANGUAGE ALONE. IT IS A WAY OF UNLOCKING A DIFFERENT PART OF OUR BRAINS THAT ALLOWS US TO THINK NONVERBALLY AND THAT MANAGERS MIGHT NOT NORMALLY USE.



JOURNEY MAPPING

- CUSTOMER JOURNEY MAPS ARE USED TO MAP THE RELATIONSHIP BETWEEN A CUSTOMER AND AN ORGANIZATION OVER TIME AND ACROSS ALL CHANNELS ON WHICH THEY INTERACT WITH THE BUSINESS. DESIGN TEAMS USE CUSTOMER JOURNEY MAPS TO SEE HOW CUSTOMER EXPERIENCES MEET CUSTOMERS' EXPECTATIONS AND FIND AREAS WHERE THEY NEED TO IMPROVE DESIGNS.

- IN ITS MOST BASIC FORM, JOURNEY MAPPING STARTS BY COMPILING A SERIES OF USER ACTIONS INTO A TIMELINE. NEXT, THE TIMELINE IS FLESHED OUT WITH USER THOUGHTS AND EMOTIONS IN ORDER TO CREATE A NARRATIVE. THIS NARRATIVE IS CONDENSED AND POLISHED, ULTIMATELY LEADING TO A VISUALIZATION.



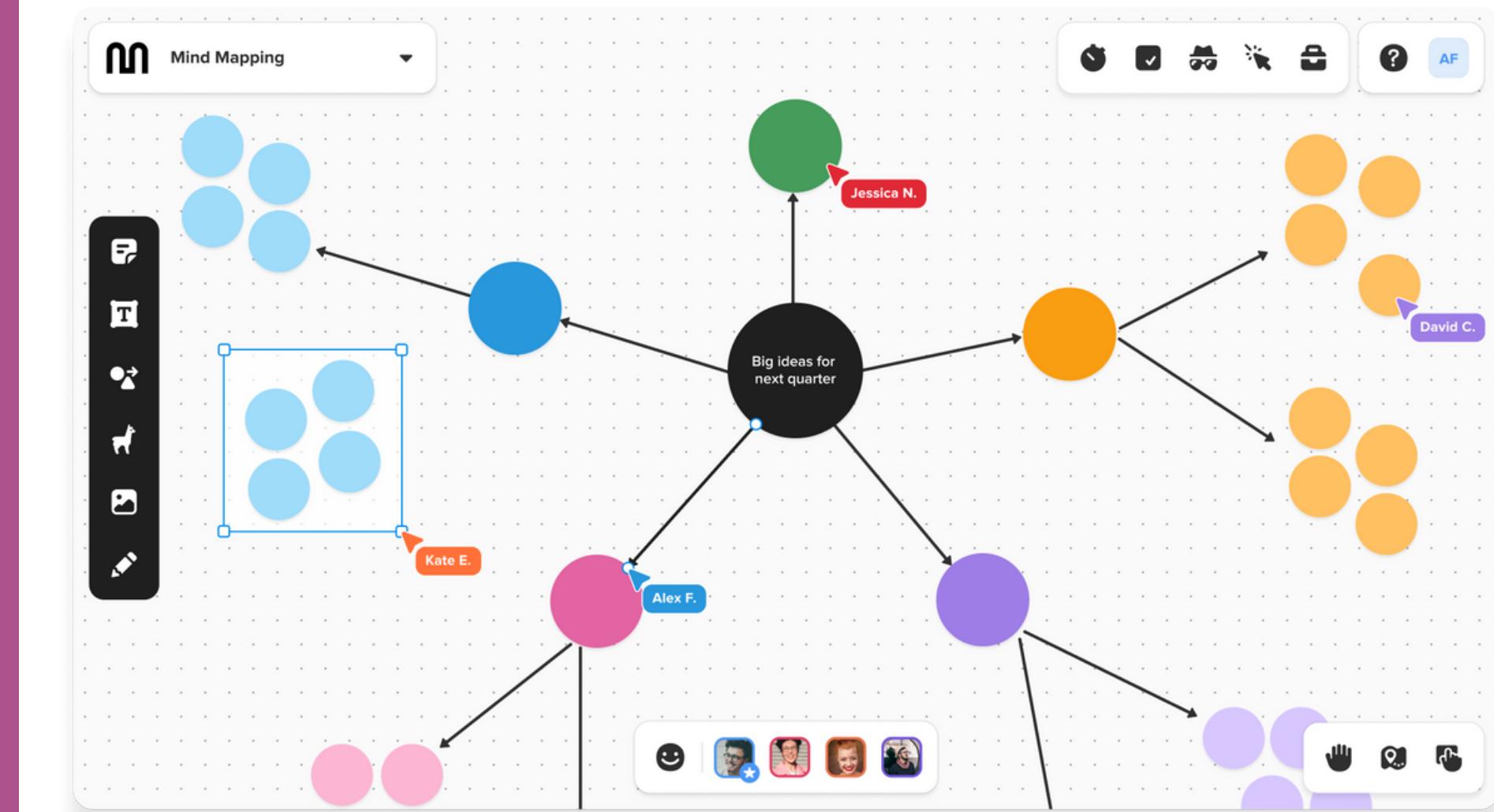
VALUE CHAIN

VALUE CHAIN ANALYSIS EXAMINES HOW AN ORGANIZATION INTERACTS WITH VALUE CHAIN PARTNERS TO PRODUCE, MARKET, AND DISTRIBUTE NEW OFFERINGS.

ANALYSIS OF THE VALUE CHAIN OFFERS WAYS TO CREATE BETTER VALUE FOR CUSTOMERS ALONG THE CHAIN AND UNCOVERS IMPORTANT CLUES ABOUT PARTNERS' CAPABILITIES AND INTENTIONS.

MIND MAPPING

**MIND MAPPING IS USED TO
REPRESENT HOW IDEAS OR
OTHER ITEMS ARE LINKED TO A
CENTRAL IDEA AND TO EACH
OTHER. MIND MAPS ARE USED
TO GENERATE, VISUALIZE,
STRUCTURE, AND CLASSIFY
IDEAS TO LOOK FOR PATTERNS
AND INSIGHTS THAT PROVIDE
KEY DESIGN CRITERIA.**



ASSUMPTION TESTING

ASSUMPTION TESTING FOCUSES ON IDENTIFYING ASSUMPTIONS UNDERLYING THE ATTRACTIVENESS OF A NEW BUSINESS IDEA AND USING AVAILABLE DATA TO ASSESS THE LIKELIHOOD THAT THESE ASSUMPTIONS WILL TURN OUT TO BE TRUE. THESE ASSUMPTIONS ARE THEN TESTED THROUGH THOUGHT EXPERIMENTS, FOLLOWED BY FIELD EXPERIMENTS, WHICH SUBJECT NEW CONCEPTS TO FOUR TESTS: VALUE CREATION, EXECUTION, SCALABILITY, AND DEFENSIBILITY.

PROTOTYPING TECHNIQUES

PROTOTYPING TECHNIQUES ALLOW US TO MAKE ABSTRACT NEW IDEAS TANGIBLE TO POTENTIAL PARTNERS AND CUSTOMERS. THESE INCLUDE STORYBOARDING, USER SCENARIOS, EXPERIENCE JOURNEYS, AND BUSINESS CONCEPT ILLUSTRATIONS — ALL OF WHICH ENCOURAGE DEEP INVOLVEMENT BY IMPORTANT STAKEHOLDERS TO PROVIDE FEEDBACK.

CUSTOMER CO-CREATION



Customer co-creation incorporates techniques that allow managers to engage a customer while in the process of generating and developing new business ideas of mutual interest. They are among the most value-enhancing, risk-reducing approaches to growth and innovation.

LEARNING LAUNCH

Learning launches are designed to test the key underlying value-generating assumptions of a potential new-growth initiative in the marketplace. In contrast to a full new-product rollout, a learning launch is a learning experiment conducted quickly and inexpensively to gather market-driven data.

STORYTELLING

Storytelling is exactly how it sounds: weaving together a story rather than just making a series of points. It is a close relative of visualization—another way to make new ideas feel real and compelling. Visual storytelling is actually the most compelling type of story. All good presentations—whether analytical or design-oriented – tell a persuasive story.

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Thank You