Design Thinking

Design?

verb (used with object)

to prepare the preliminary sketch or the plans for (a work to be executed), especially to plan the form and structure of: *to design a new bridge.*

to plan and fashion artistically or skillfully.

Source: dictionary.com

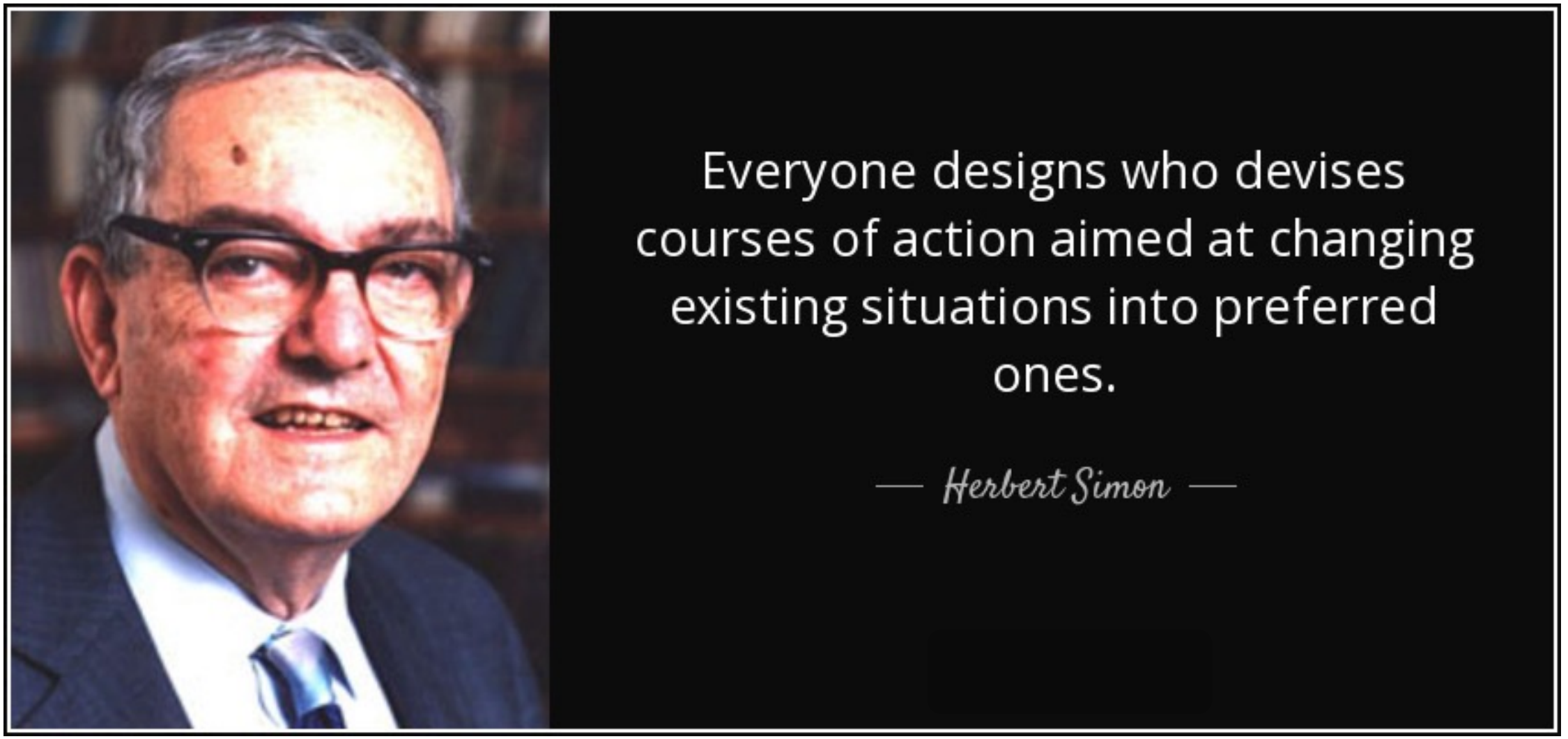
A **design** is a plan or specification for the construction of an object or system or for the implementation of an activity or process, or the result of that plan or specification in the form of a prototype, product or process.
The design usually has to satisfy certain goals and constraints; may take into account aesthetic, functional, economic, or socio-political considerations; and is expected to interact with a certain environment.

Source: Wikipedia

Typical examples of designs include architectural blueprints, engineering drawings, business processes, circuit diagrams, and sewing patterns.

People who produce designs are called *designers*.

Source: Wikipedia

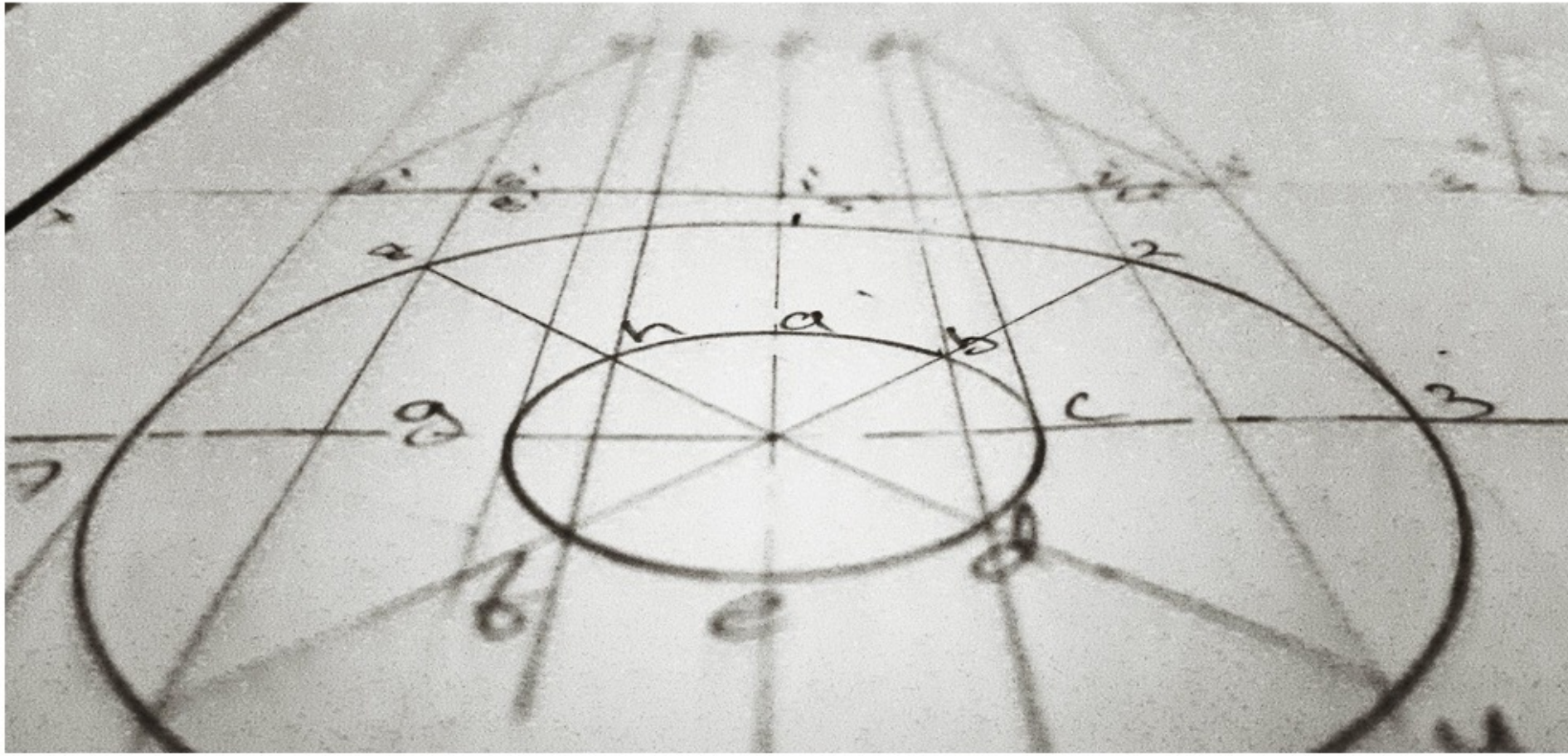

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones.
— Herbert Simon —

Design Thinking

Thinking like a designer can transform the way you develop products, services, processes—and even strategy. by Tim Brown

From the Magazine (June 2008)

*"Put simply, [design thinking] is a discipline that uses the **designer's sensibility and methods** to **match people's needs with what is technologically feasible** and what a viable business strategy can convert into **customer value and market***



DESIGN THINKING

Empathize
Understanding people

Ideate
Generating your ideas

Define
Figuring out the problem

Test
Refining the product

Prototype
Creation and experimentation

Source: maqe.com

DESIGN THINKING

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Design thinking should bring your ideas to life by putting users/customers at the center of every process

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Figuring out the problem

Test

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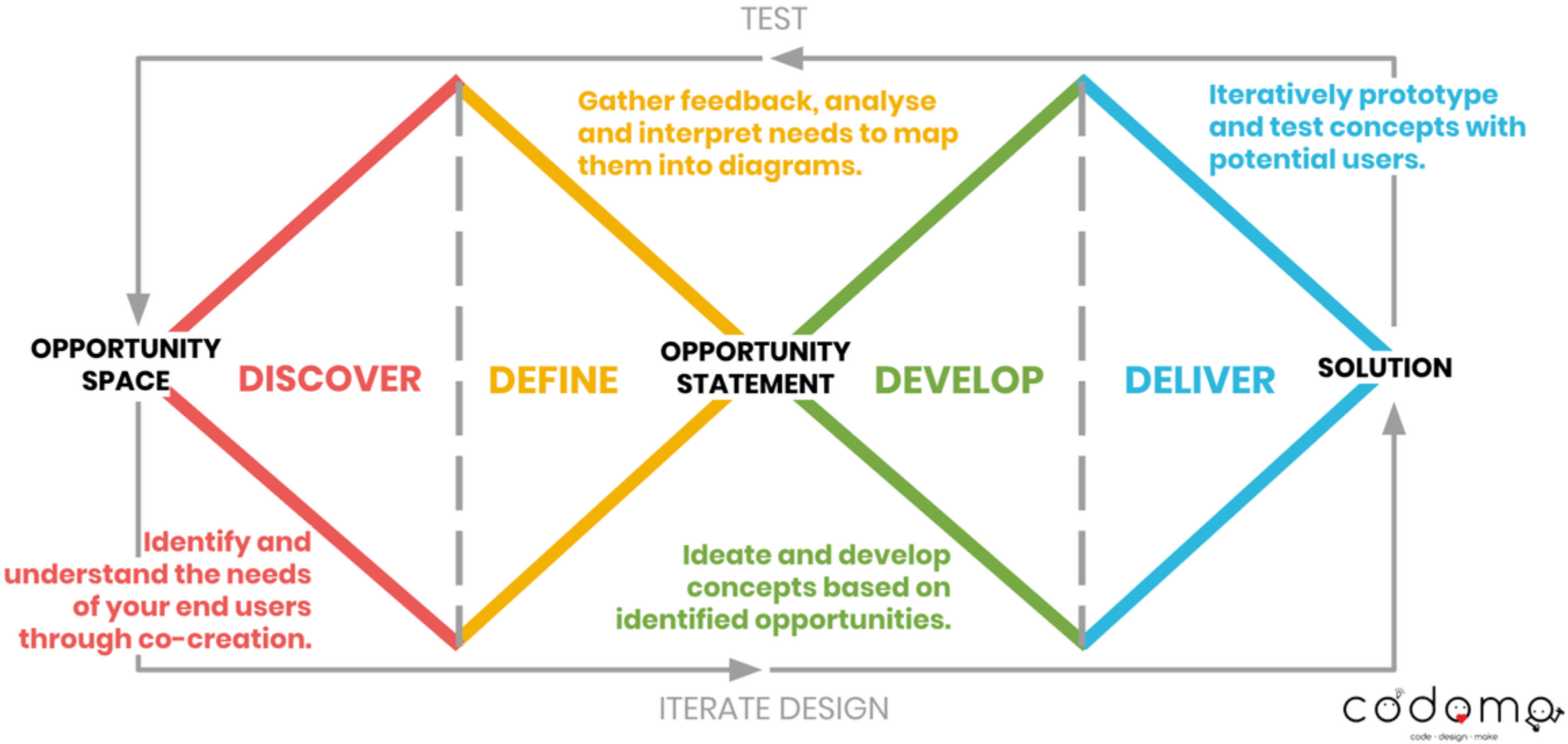
Prototype

Creation and experimentation

Source: maqe.com

Double Diamond Design Framework



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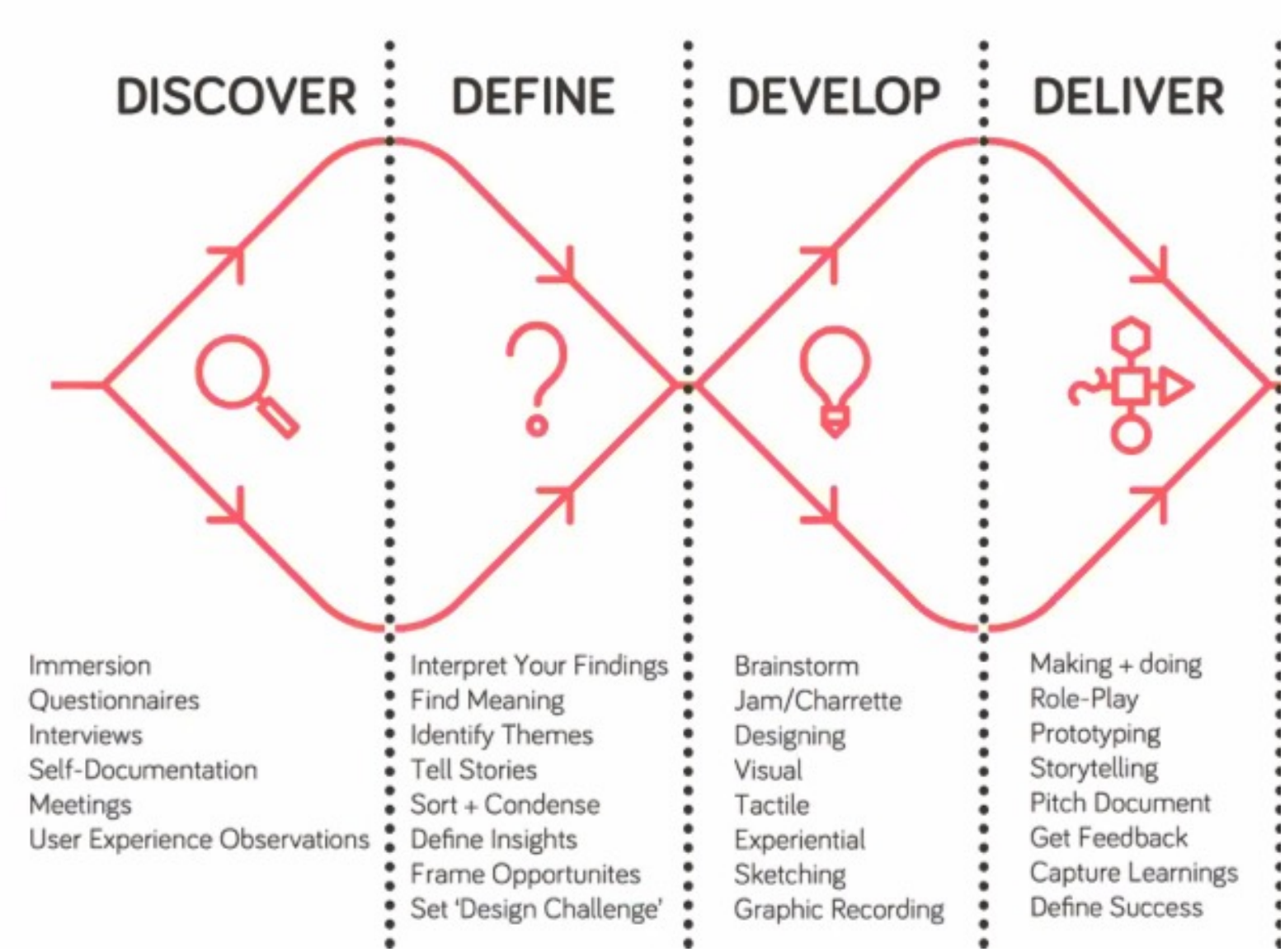
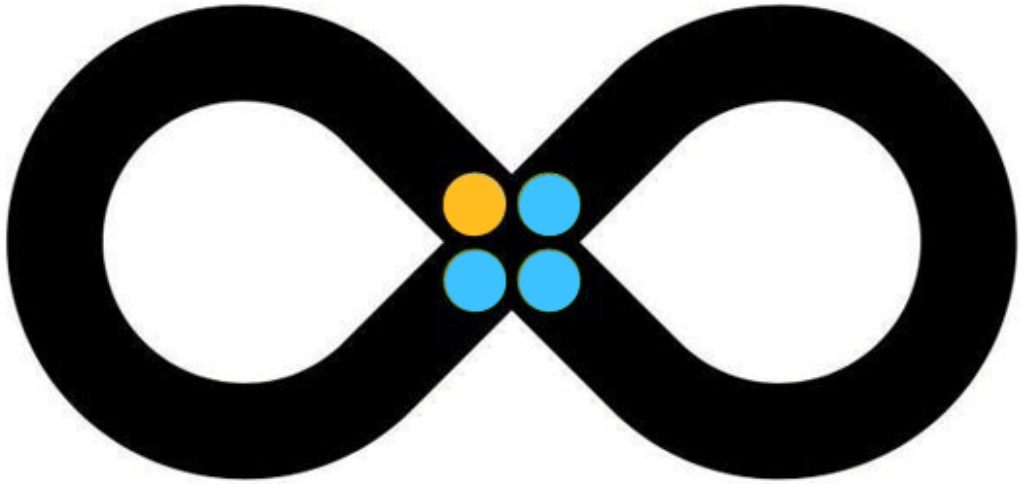
Design Thinking Double Diamond



Enterprise Design Thinking

The Loop

Understand user's needs and continuously deliver outcomes



A focus on user outcomes

When using IBM Design Thinking, put your users' needs first

Multidisciplinary teams

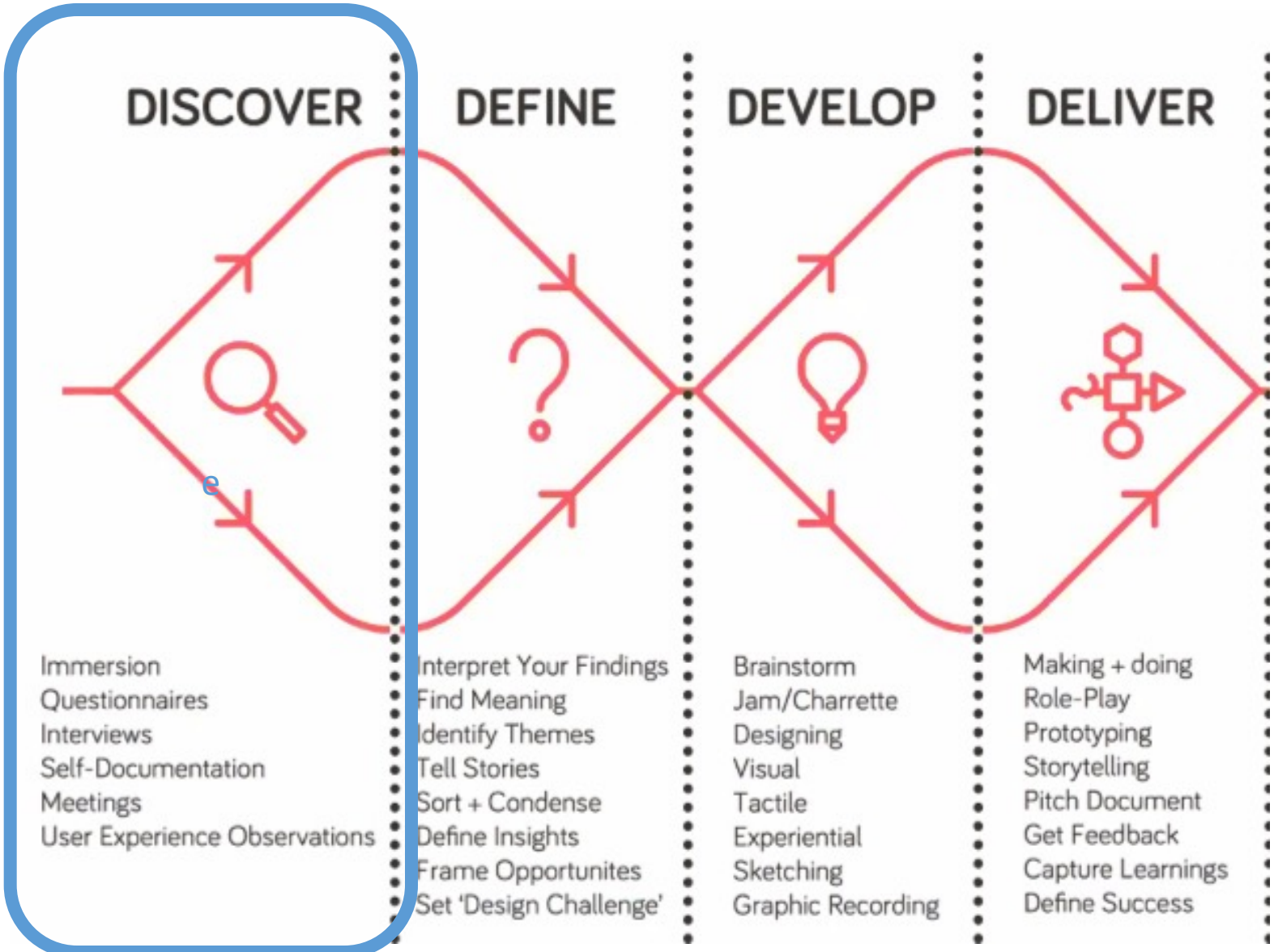
Collaborate across disciplines to move faster and work smarter

Restless reinventation

Everything is a prototype. Listen, watch, learn and correct

Source: IBM

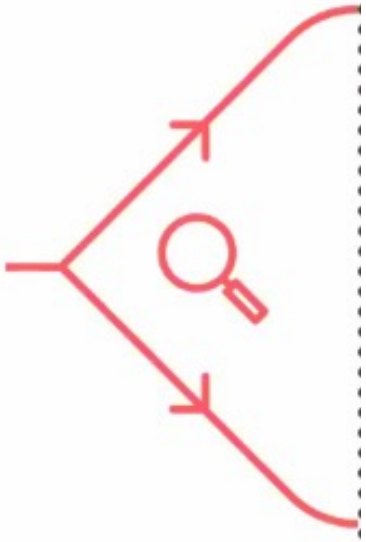
Design Thinking Double Diamond



Empathize

Understanding people

DISCOVER



Immersion
Questionnaires
Interviews
Self-Documentation
Meetings
User Experience Observations

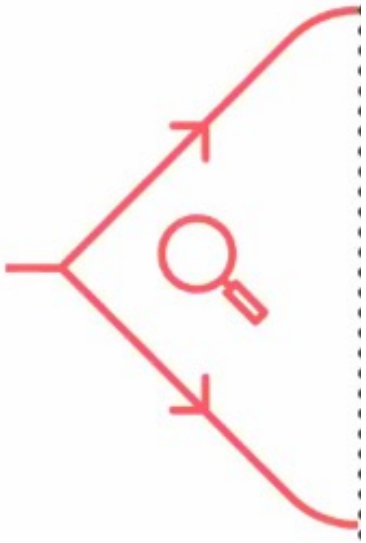
Data Collection

- Interviews
- Observation
- Ethnography
- Contextual Inquiry

Empathize

Understanding people

DISCOVER



Immersion
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Data Collection - Interviews

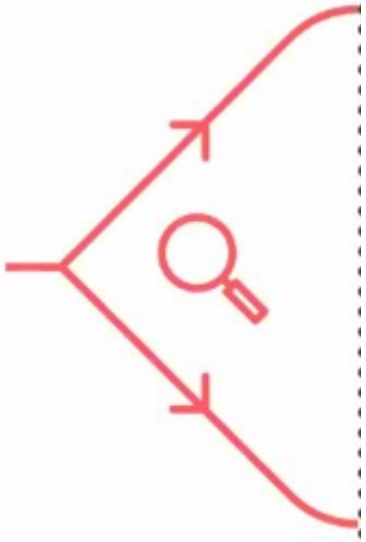
An interview success is **greatly dependent upon the interviewer**.

- He needs to gain the interviewee **trust** and create **a *rapport*** with him, overcoming social and gender barriers.
- An interviewer also needs to be able to **improvise and guide the interview** (for unstructured and group interviews).
- Naturally, **neutral questions and overall posture** should be assumed, to minimize any impact upon the interviewee.
- Also, as interviewees are expressing their personal opinions and feelings, ethical concerns also arise and everything must be made to **avoid any harm to the subjects, and protect their privacy**.

Empathize

Understanding people

DISCOVER



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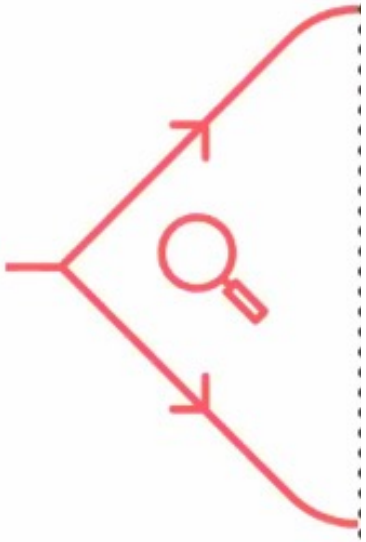
Data Collection - Interviews

- Interviews are directed conversations: the interviewer listens, directs and encourages. The **participant does most of the talking**.
- An interview is negotiated and contextual: gender, class, age and ideologies may affect the end result.
- During the interview:
  - ➢ First devise a few **broad questions** and then focus on the points of your interest. Questions must explore the interviewer's topic and fit the participant's experience
  - ➢ Request more detail and explanations whenever needed. The aim is to **explore the topics, going beneath the surface of ordinary conversation**.

Empathize

Understanding people

DISCOVER



Immersion
Questionnaires
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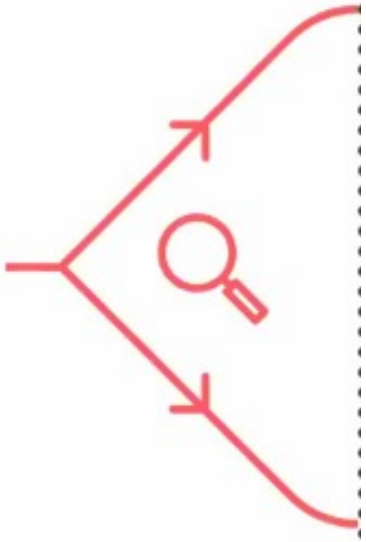
Data Collection - Interviews

- Interviewing produces a huge amount of data. Whenever possible, **record** all structured and semistructured interviews, unless people specifically ask you not to.

Empathize

Understanding people

DISCOVER



Immersion
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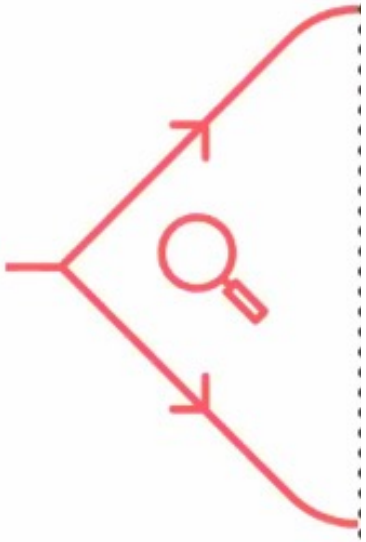
Data Collection - Observation

- **Direct Observation:** Watching people and recording their behavior on the spot.
- **Indirect Observation:** The archeology of human behavior
- **Participant Observation:** Fieldwork that involves experiencing the lives of people one studies.
- **Ethnography:** The *process* of collecting descriptive data about a culture and the *product* of that work – an article or a book or a film.

Empathize

Understanding people

DISCOVER



Immersion
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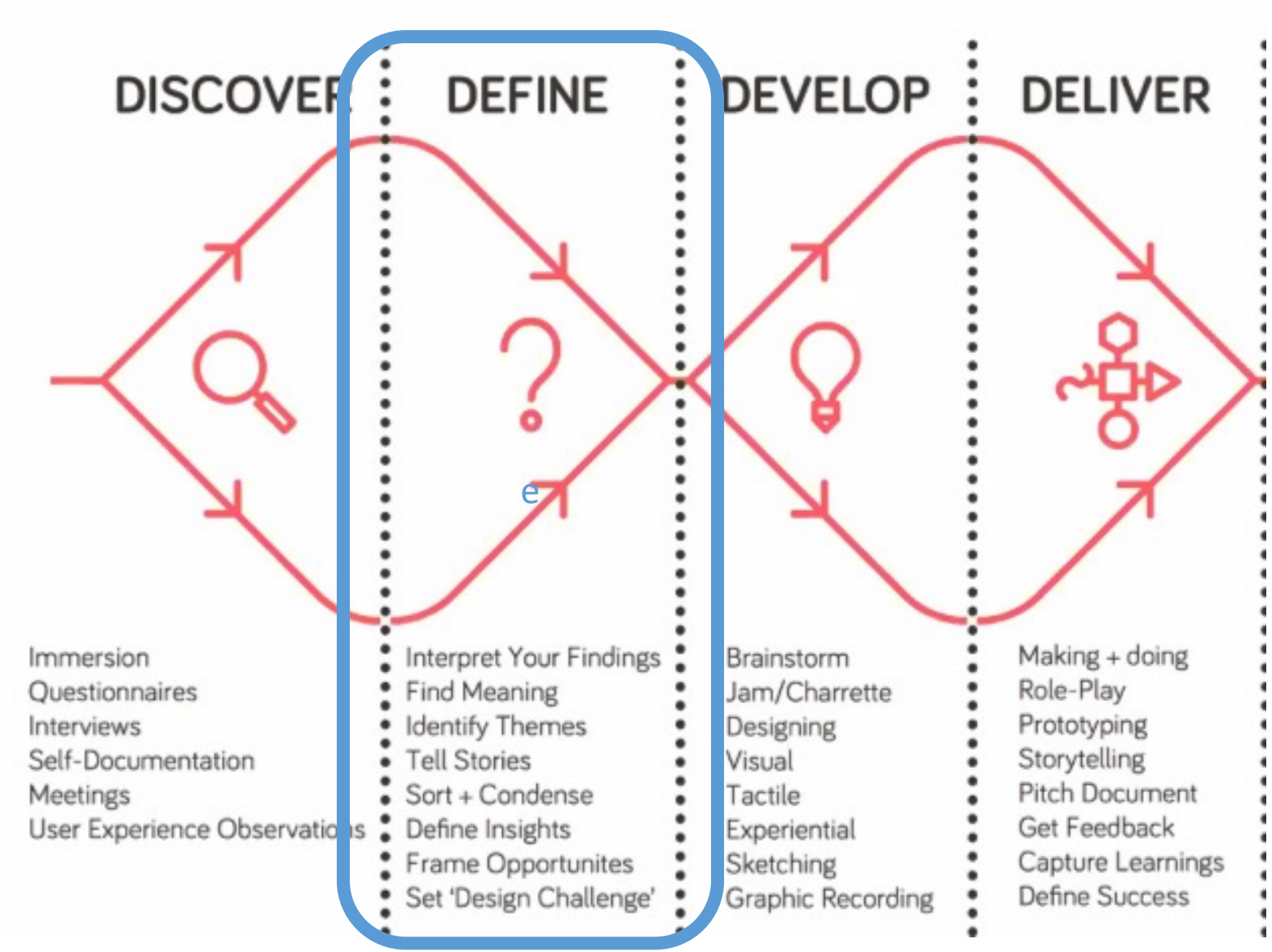
Data Collection – Contextual Inquiry

- **Apprenticeship model:** the designer works as an apprentice to the user. The designer inquires about the work in naturalistic conditions (in the workplace).
- **Contextual interview**: combination of observation, discussion, and reconstruction of past events. The design observes and questions, but does not participate.
- Understanding developed through cooperation between the user and the developer
- Importance of watching the observing and interacting with the user while we performs his/her tasks.

(Beyer and Holtzblatt 1998)

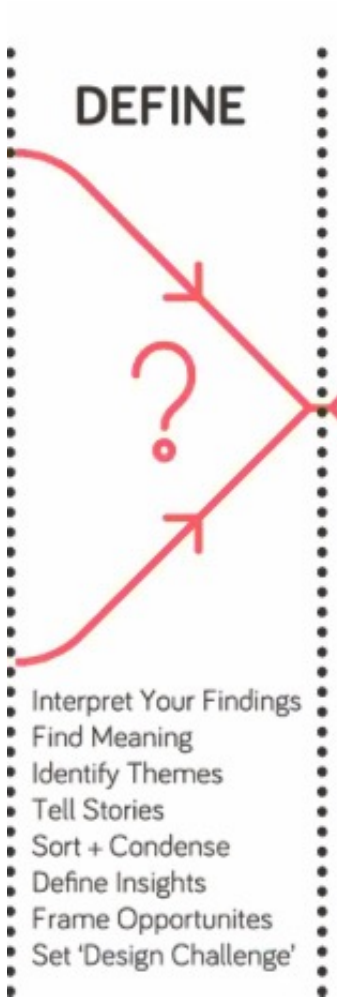
Design Thinking Double Diamond



Persona

Define

Figuring out the problem



PERSONA

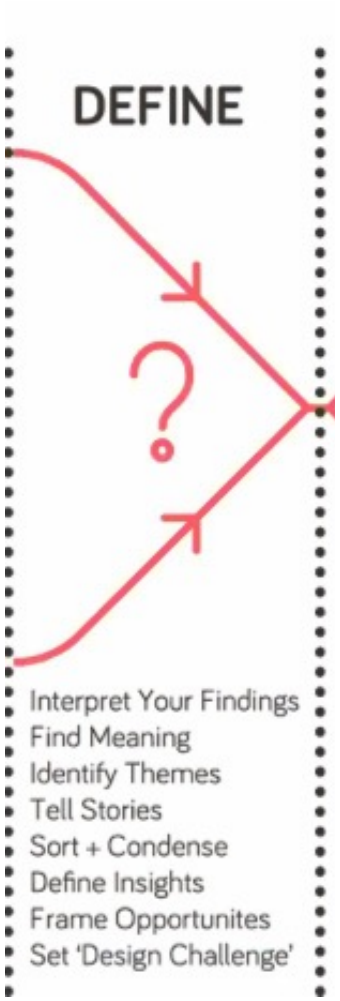
User/customer stereotypes based on research

Service Design Thinking

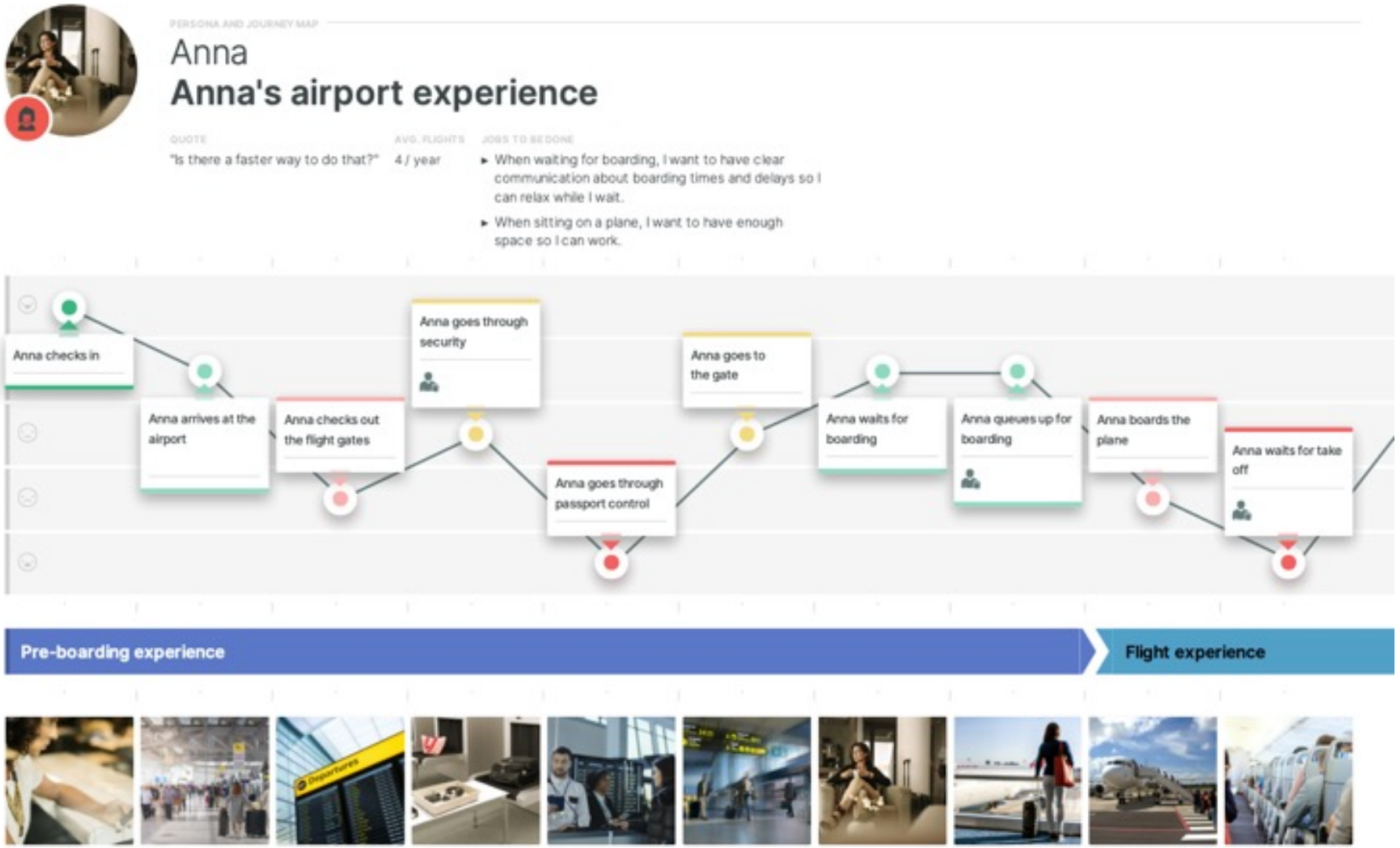
Marc Stickdorn 2013

Define

Figuring out the problem



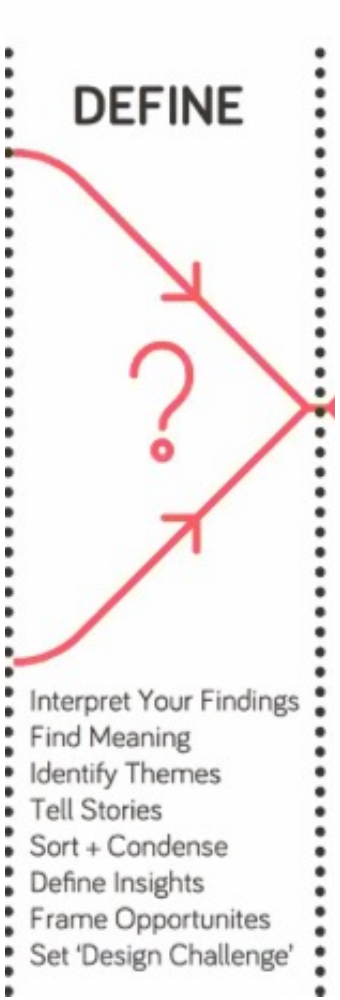
Customer Journey

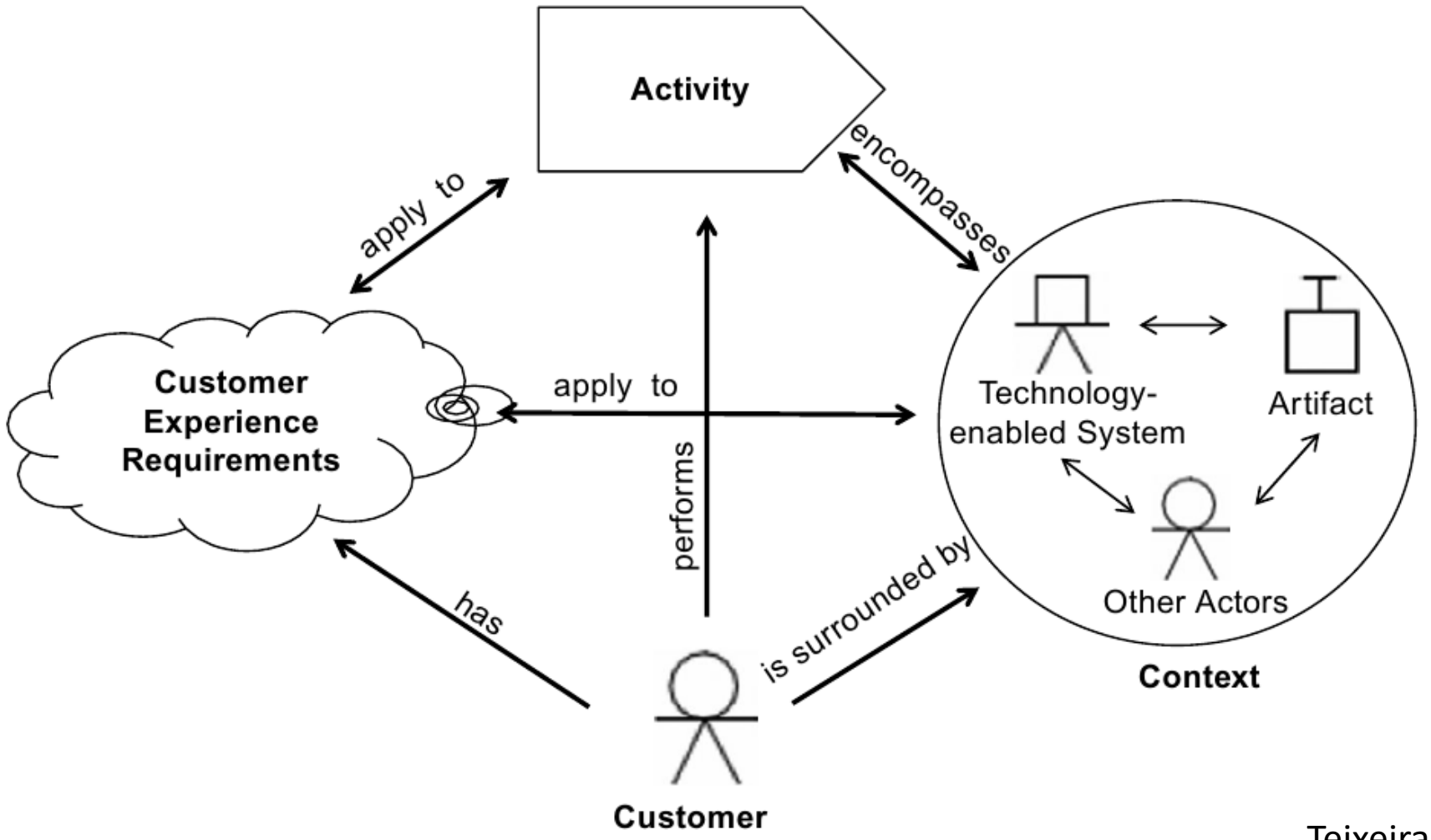


Customer Experience Modeling

Define

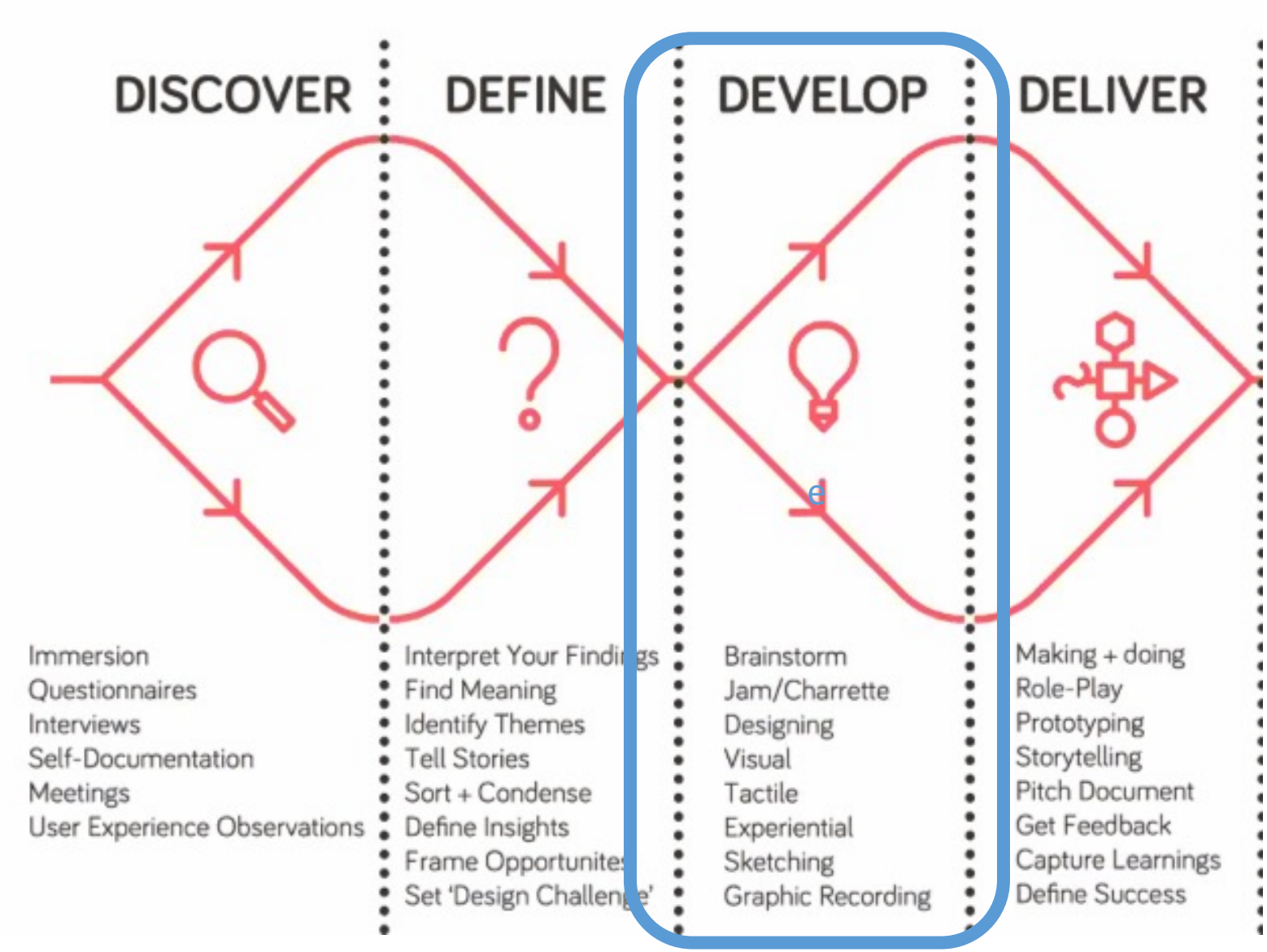
Figuring out the problem





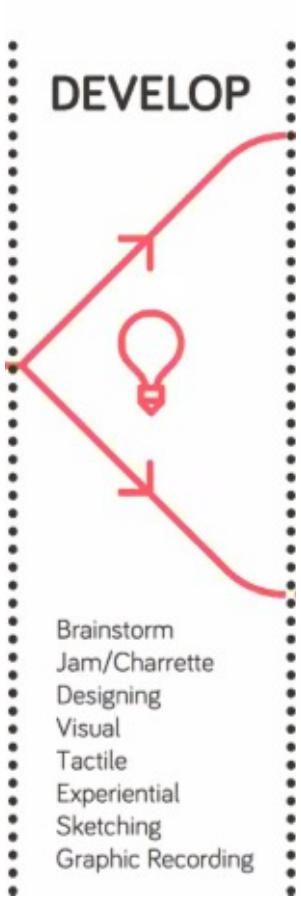
Teixeira et al. 2012

Design Thinking Double Diamond



Ideate

Generating your ideas

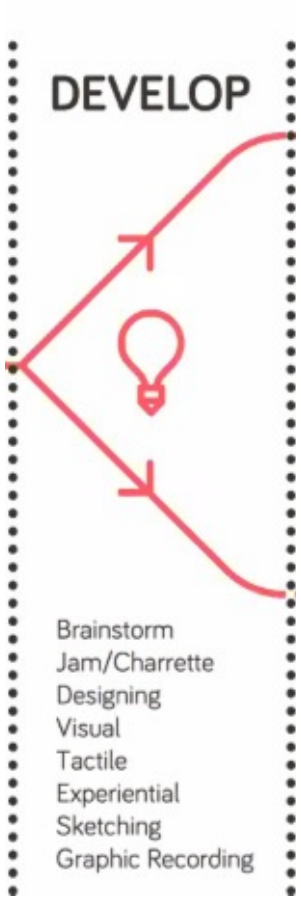


Affinity Diagrams

Storyboards

Ideate

Generating your ideas



Scenario 1 APP for Skin Issues Following Up Usage _v2

Page 1

Mike – 28 years old; works as a store clerk; lives with his girlfriend.
Light toned skin, dark haired, normal amount of moles.

Mike with his girlfriend getting dressed and spotting the mole.

It was quite weird shaped, ugly even. As it was quite sensible to the touch. Mike got concerned and decided to visit a dermatologist.

Mike making an appointment with his dermatologist. Mike tried to remain calm and not stress about the mole issue.

He scheduled an appointment for the earliest possible date and refrained himself of thinking too much about the issue. "The dermatologist will know best" he told himself.

At the appointment the dermatologist tranquilized Mike.

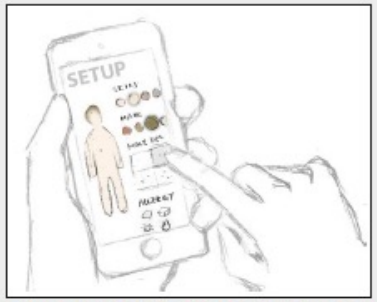
It was not a serious case, and most probably not a cancer situation. Nevertheless the mole required close monitoring, in the case it started to change.

Dermatologist suggesting installing "My health diary app", shows a QR code.

To help Mike the dermatologist suggests a new smartphone application that helps patients monitor and keep a photo diary of their condition. The dermatologist showed Mike a QR code so that he could download the app.

Mike installs the app and selects the options/-module "Dermatology".

Mike installed the app and started to configure it, first selecting its intended module: the dermatology one.



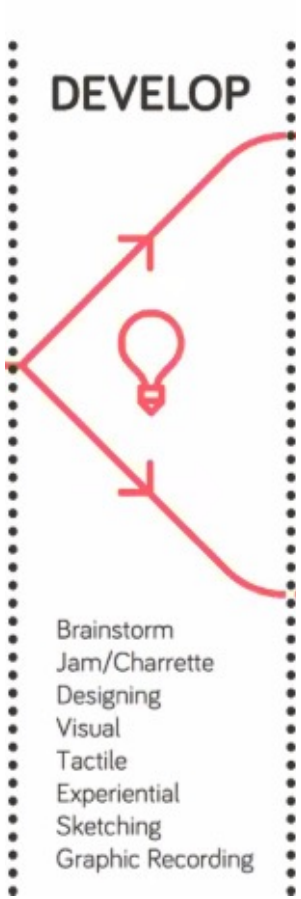
Setup in the app: Form with skin colour selection, and hair color...

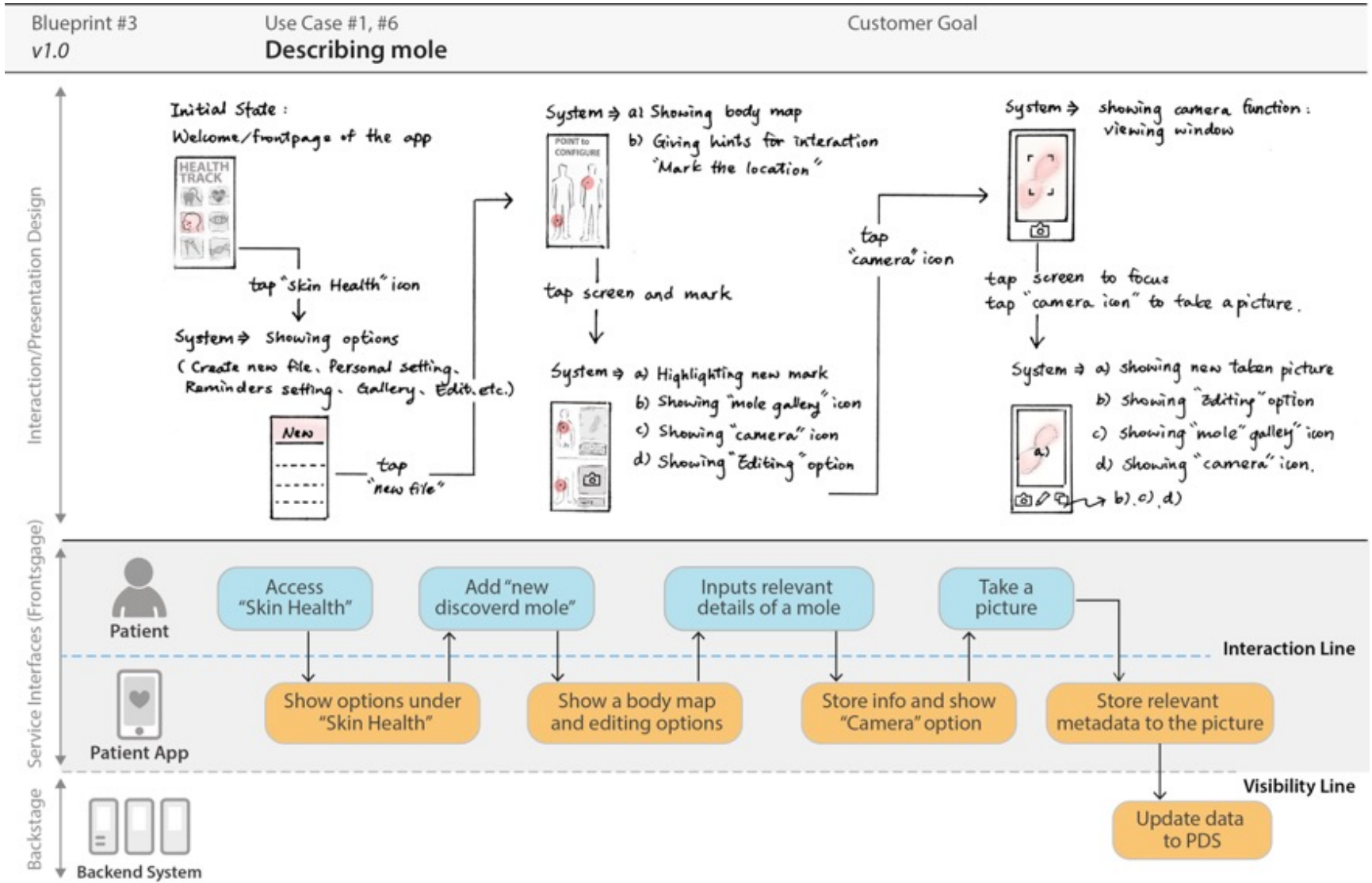
Mike starts the sign up and configuring process. He fills a skin related form, where he selects the colour of his skin, and other relevant details that would help contextualize his mole photos.

Service Blueprinting

Ideate

Generating your ideas





Interaction Sketches

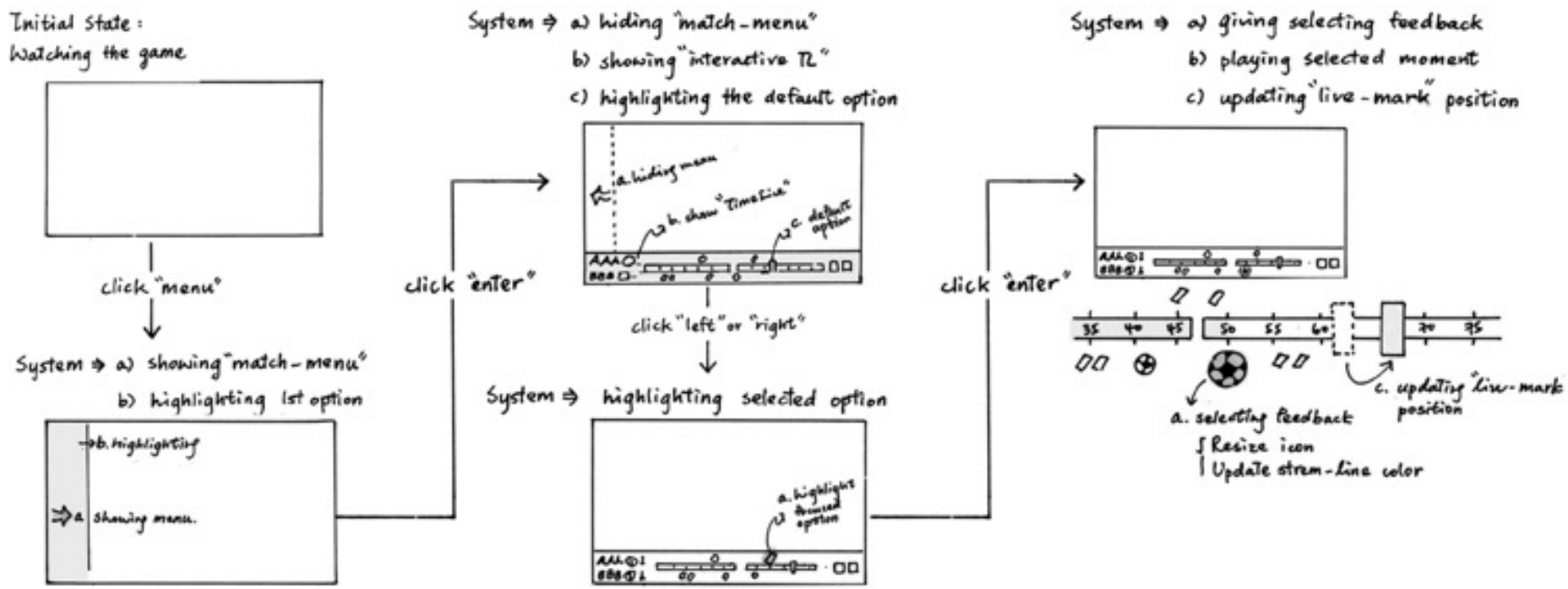
Ideate

Generating your ideas

DEVELOP

Brainstorm
Jam/Charrette
Designing
Visual
Tactile
Experiential
Sketching
Graphic Recording

Interaction/Presentation Design



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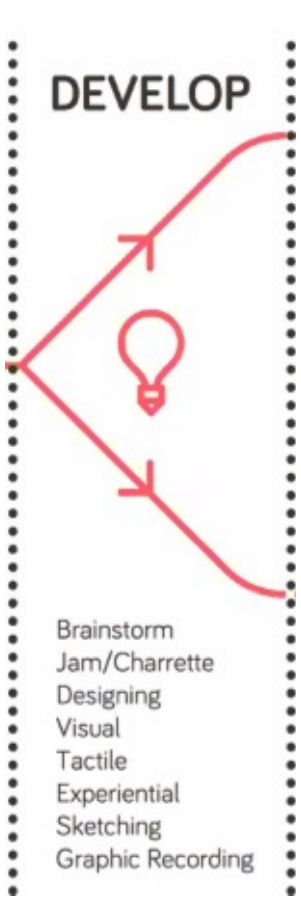
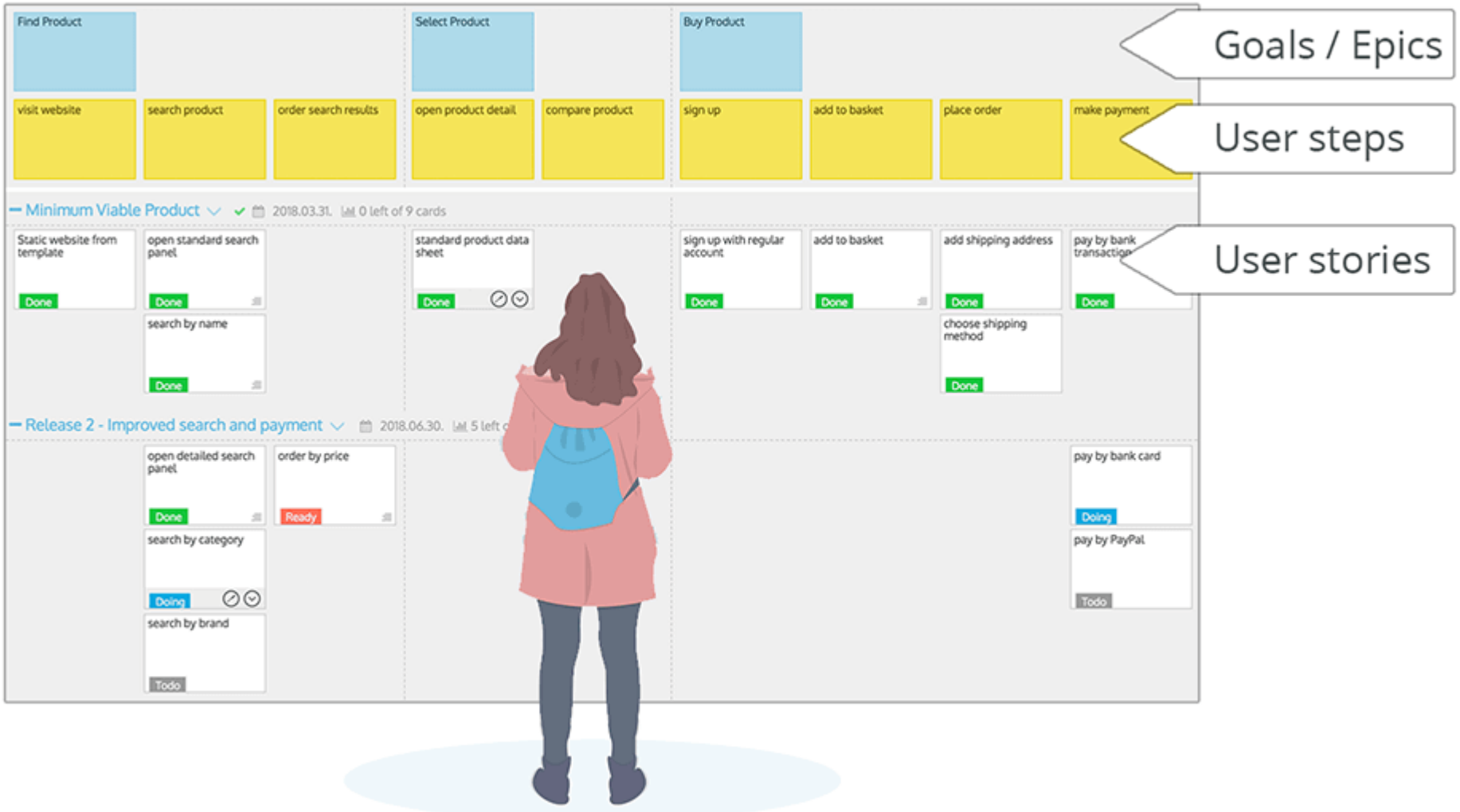
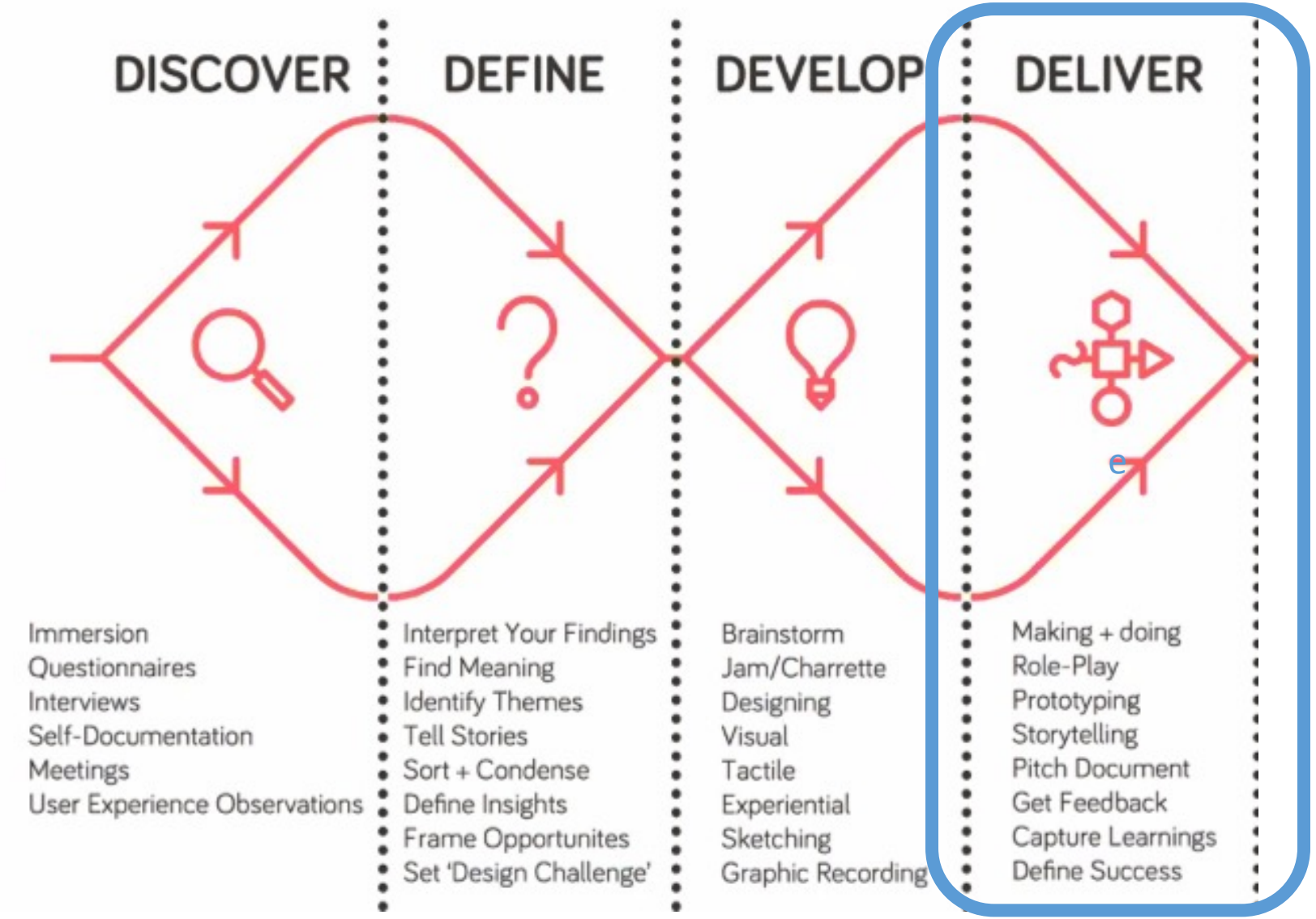


Epics & User Stories



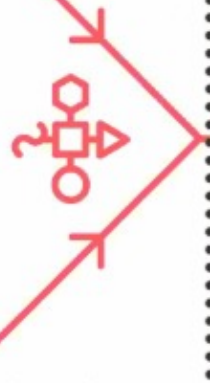
Design Thinking Double Diamond



Prototype

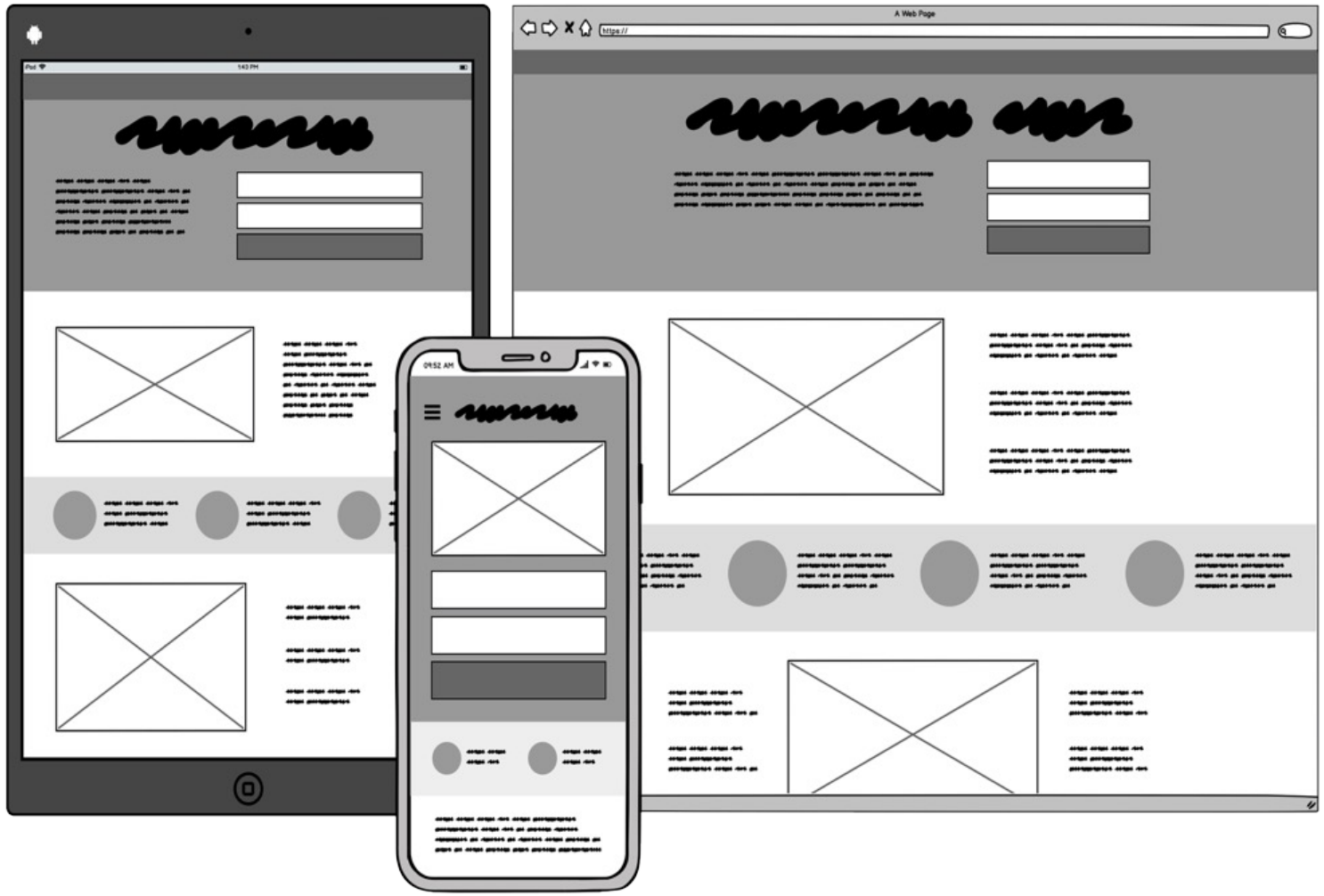
Creation and experimentation

DELIVER



Making + doing
Role-Play
Prototyping
Storytelling
Pitch Document
Get Feedback
Capture Learnings
Define Success

Wireframes



Prototype

Creation and experimentation

DELIVER

Making + doing
Role-Play
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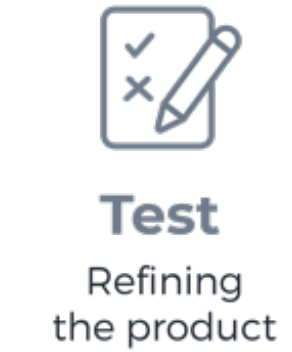
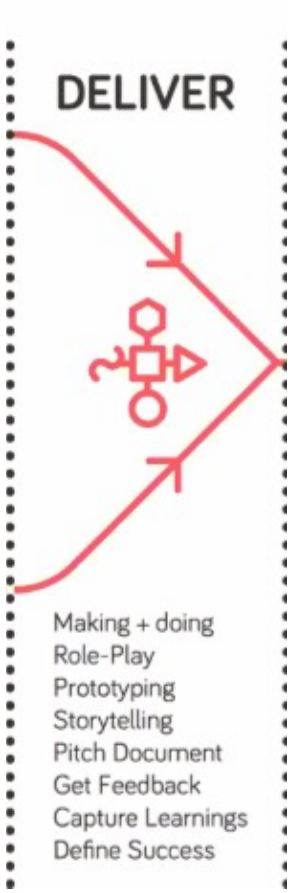
Define Success

Lego Serious Play





Surveys

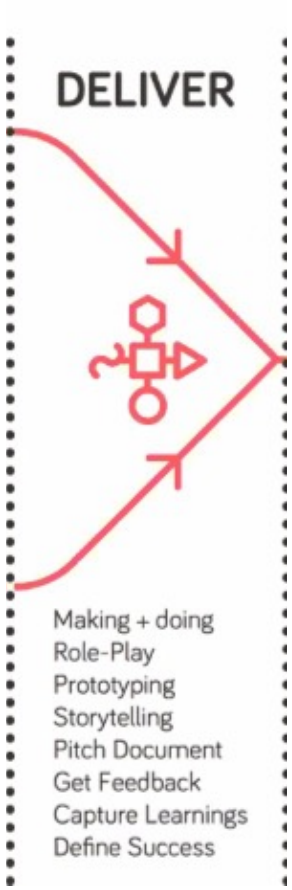
- Quantitative description of trends, attitudes, or opinions of a population, by studying a part of it (sample).

- Type of survey design:
  - Cross-sectional (data collected at one point in time)
  - Longitudinal (data collected over time)

- Form of data collection – telephone, mail, Internet personal/group interviews

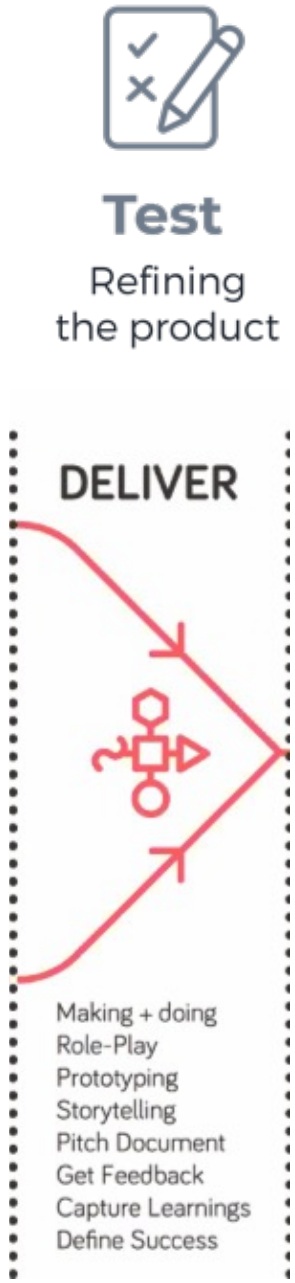
Test

Refining the product



Surveys

- **Instrumentation:** careful when selecting an instrument (set of questions)
- Guidelines:
  1. Be unambiguous
  2. Use vocabulary that your respondents understand, but don't be condescending
  3. Remember that respondents must know enough to respond to your questions
  4. Make sure there is a clear purpose for every question you ask on your survey
  5. Pay careful attention to contingencies and filter questions
  6. Use clear scales
  7. Avoid loaded questions
  8. Don't use double-barreled questions
  9. Don't take emotional stands in the wording of questions



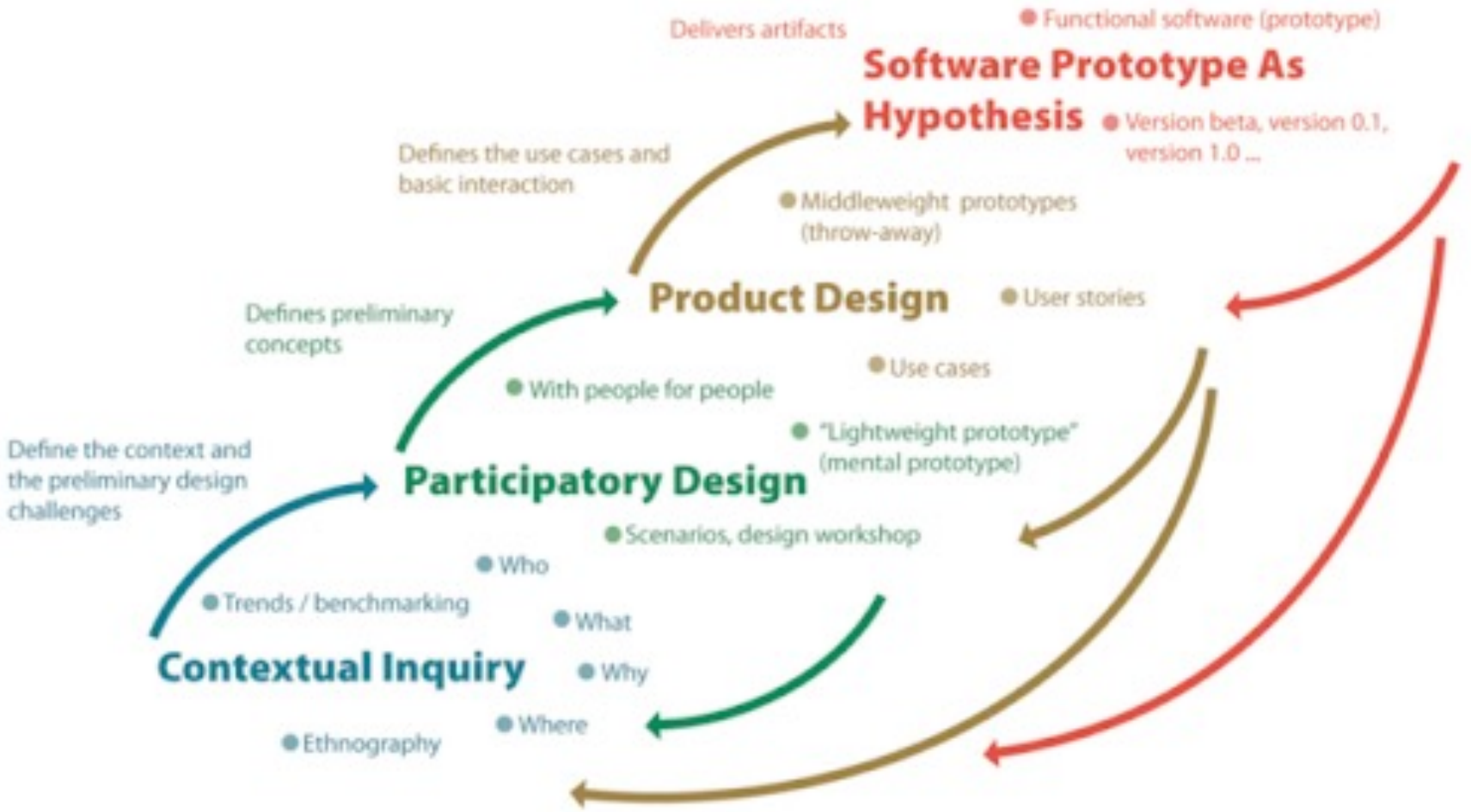
Experiments

- Systematic manipulation of one or more variables to evaluate an outcome while holding other variables constant to isolate effects.
  - True Experiments: Each participant is assigned randomly to either a treatments or control group.
  - Quasi-Experiments: Each participant is selected rather assigned.
  - Lab Experiments: Offer greater control over variables.
  - Field Experiments: Offer greater realism, out in the real world.

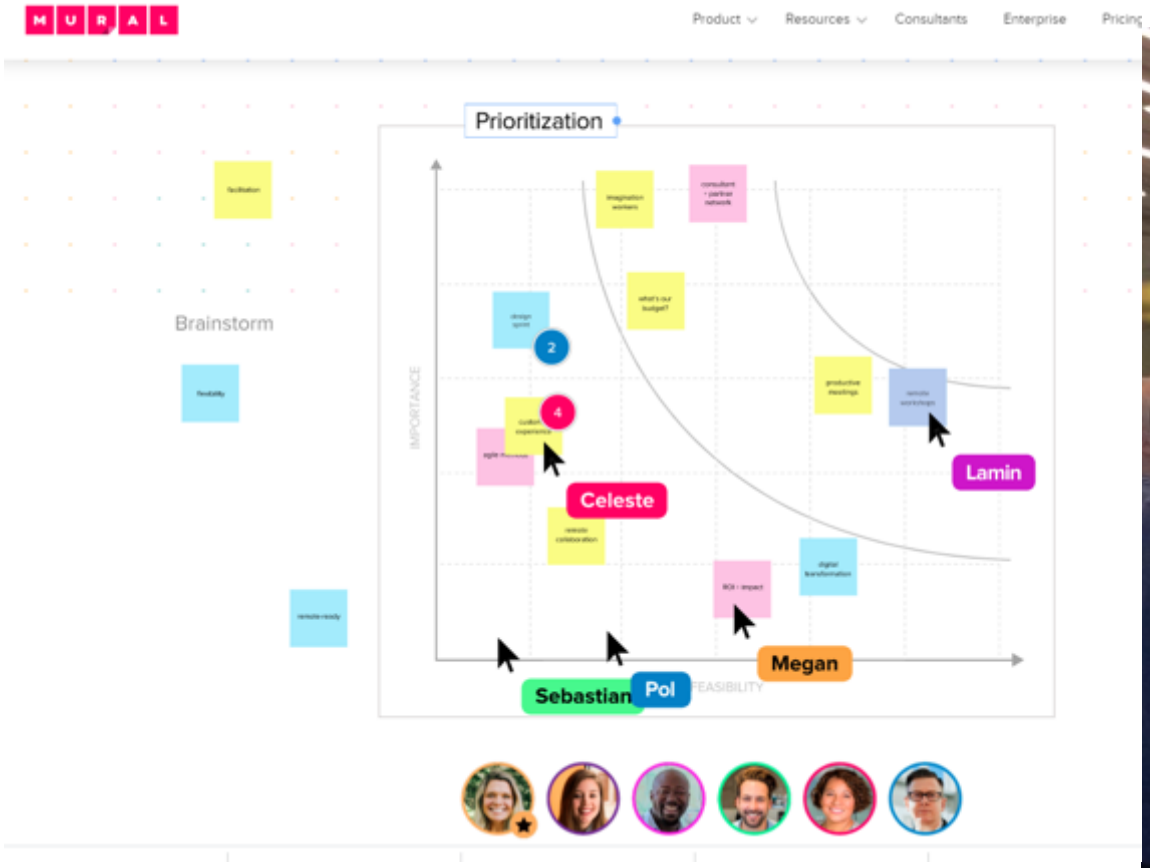
Participatory Design / Co-Design

Work together with your team, clients and customers

Participatory Design / Co-Design



Participatory Design / Co-Design



Design Thinking

Jorge Grenha Teixeira