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Optimizing Outcomes: Integrating UX and User Feedback in Development

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23 September 2024

In partnership with:

INL Idaho National Laboratory

Outline

- Intro to User Experience (UX)
  - UX principles
  - UX design process
- User research methods
- User feedback
  - Incorporating user input
  - Prototypes and visual feedback
- UX impact

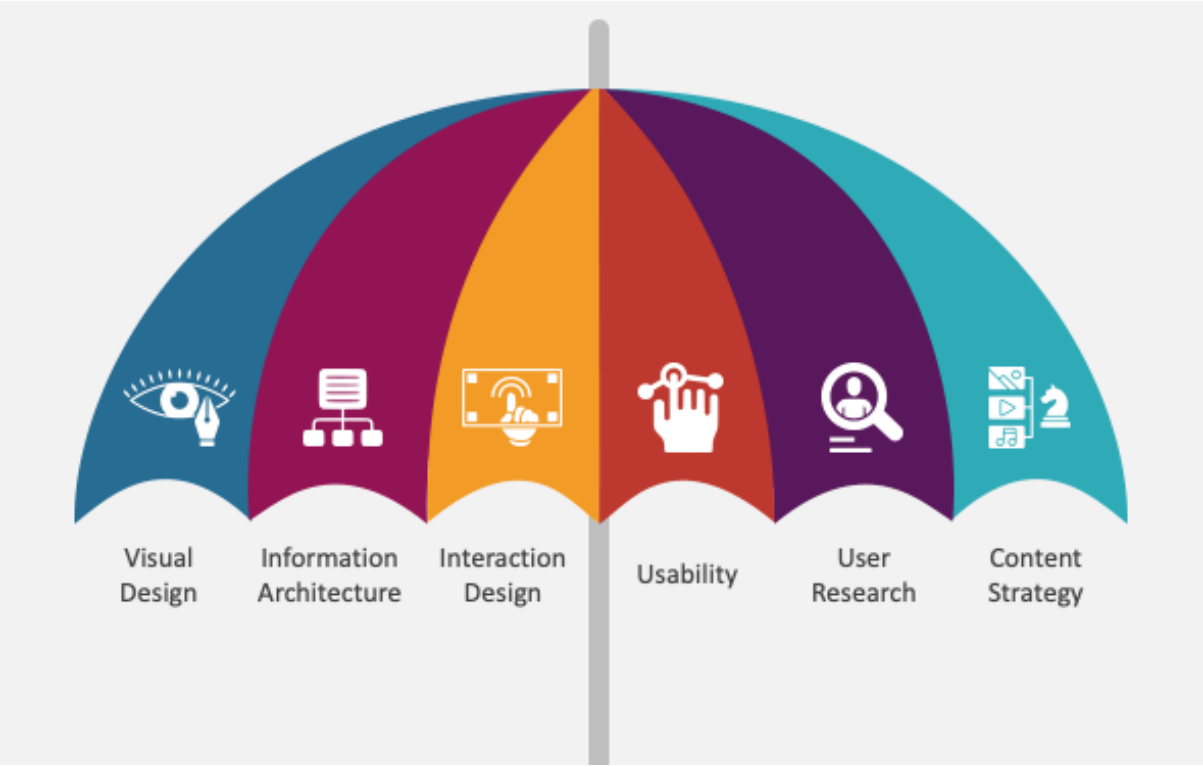
Intro to User Experience

> User experience (UX) design is an interdisciplinary field involving understanding, designing, and optimizing user interaction with products, services, and systems to **create intuitive and efficient interactions** that **evoke positive emotions and fulfill user needs**, fostering satisfaction and engagement.

Intro to User Experience

- User experience refers to the feeling users have when interacting or using different products, systems, and services
- User experience can cover many things
  - How users use an application
  - How easy to use and accessible an application or control system is
  - The relevance of content displayed
- Human-centered approach to product design

Intro to User Experience



Each component under the umbrella informs the user experience

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Intro to User Experience

- Central to UX is understanding and addressing user needs
  - Usability, accessibility, efficiency, and effectiveness
- Products, systems, and services should not only meet needs but also exceed expectations
  - Help users achieve their goals accurately and reliably

Intro to User Experience

- Improvement of interactions and user interface
  - Ease of use
  - Intuitiveness
  - Cognitive load
  - Efficiency
  - Support user workflows
  - Accessibility
  - Safety
  - Etc.

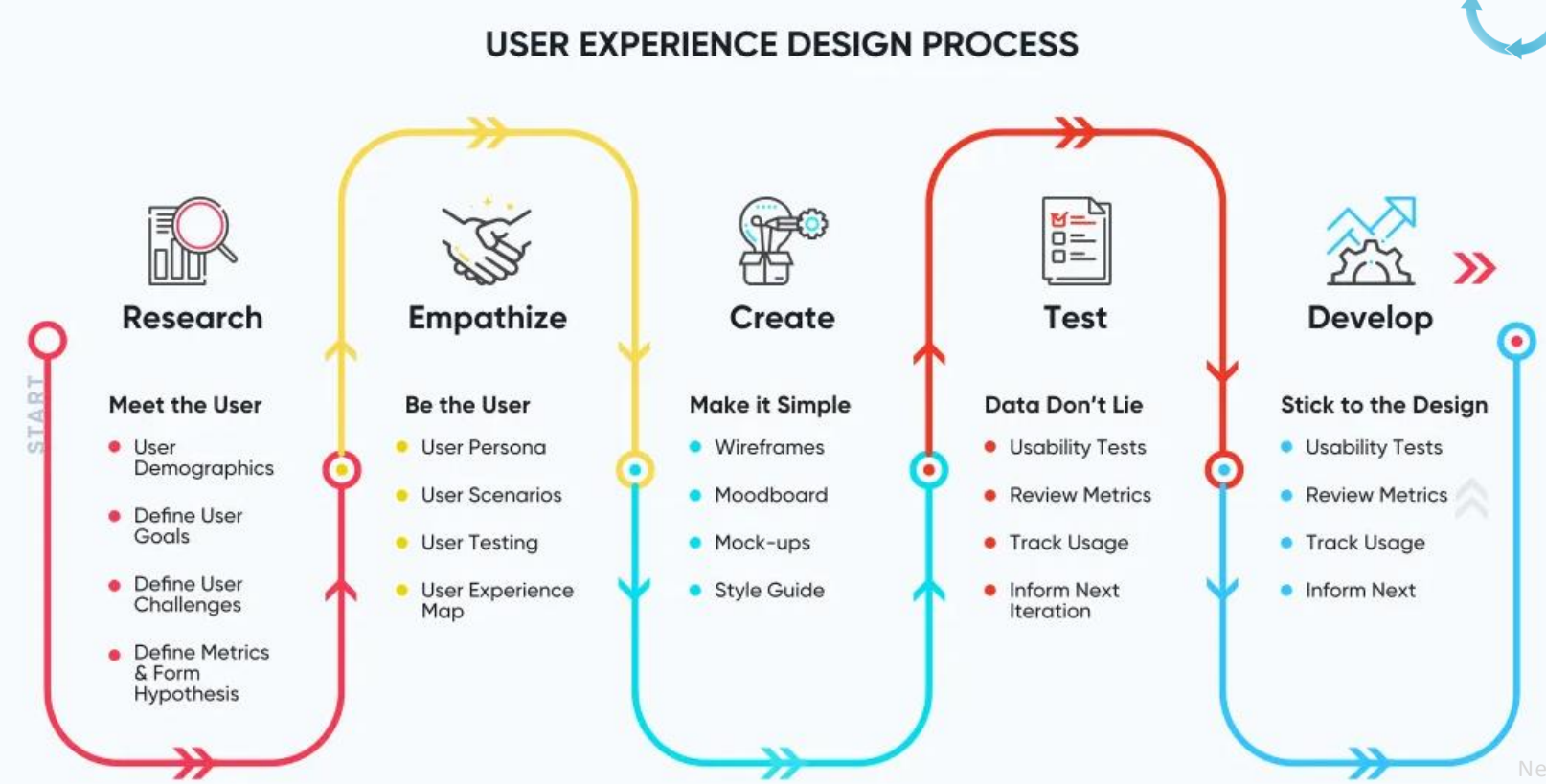
Intro to User Experience

Intro to User Experience

- No one is using the sidewalk because they didn't consider the user's perspective
- Avoid this by getting to know our users and learning about the path they need to take before getting to that final implementation
- It is important that we design around our users' needs and make sure their perspectives are captured in the design
- Design applications that actually fit their needs to allow them to do what they need to do without creating elaborate workarounds

User Experience Design Process

Intro to User Experience – Design Process



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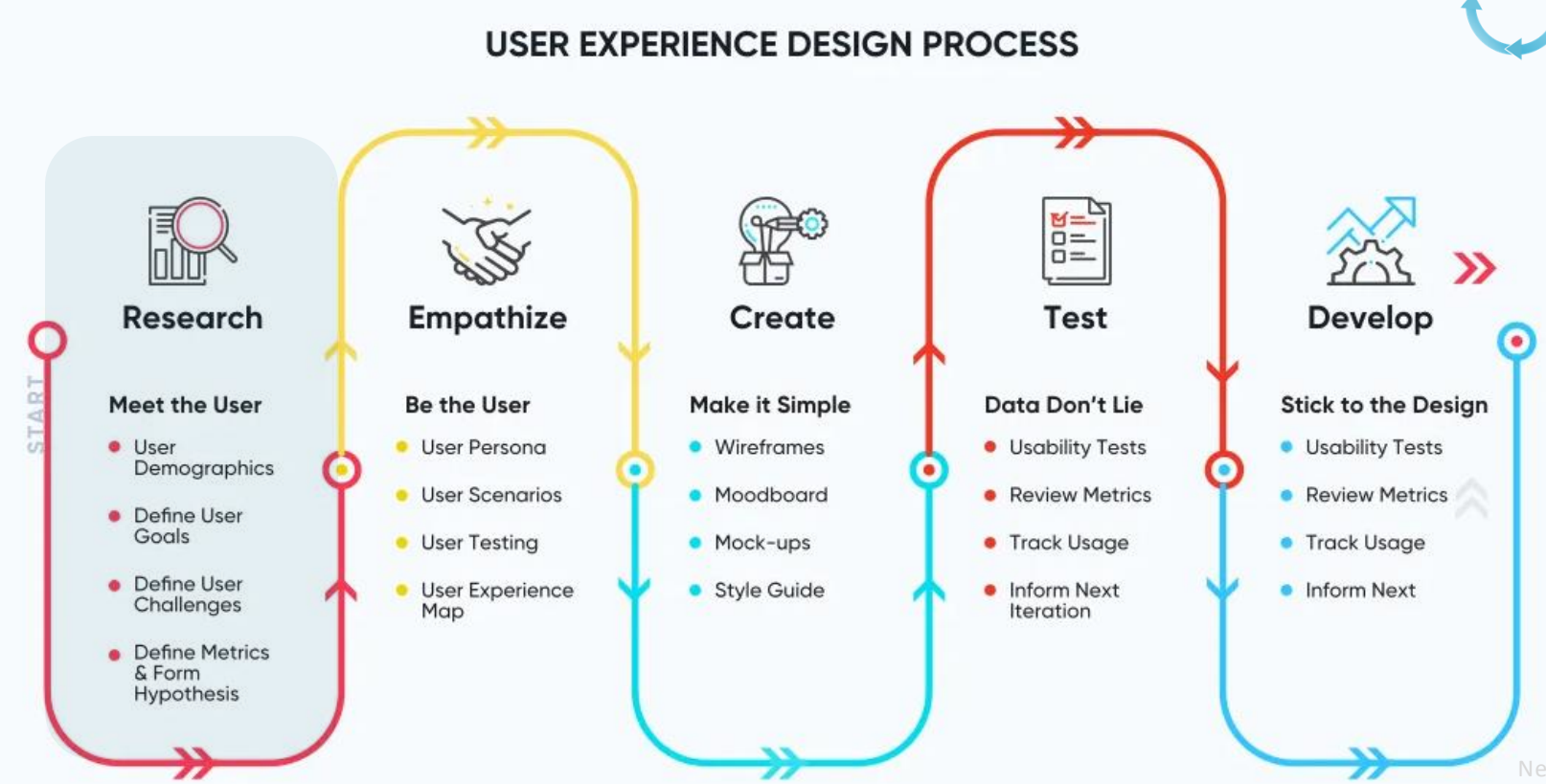

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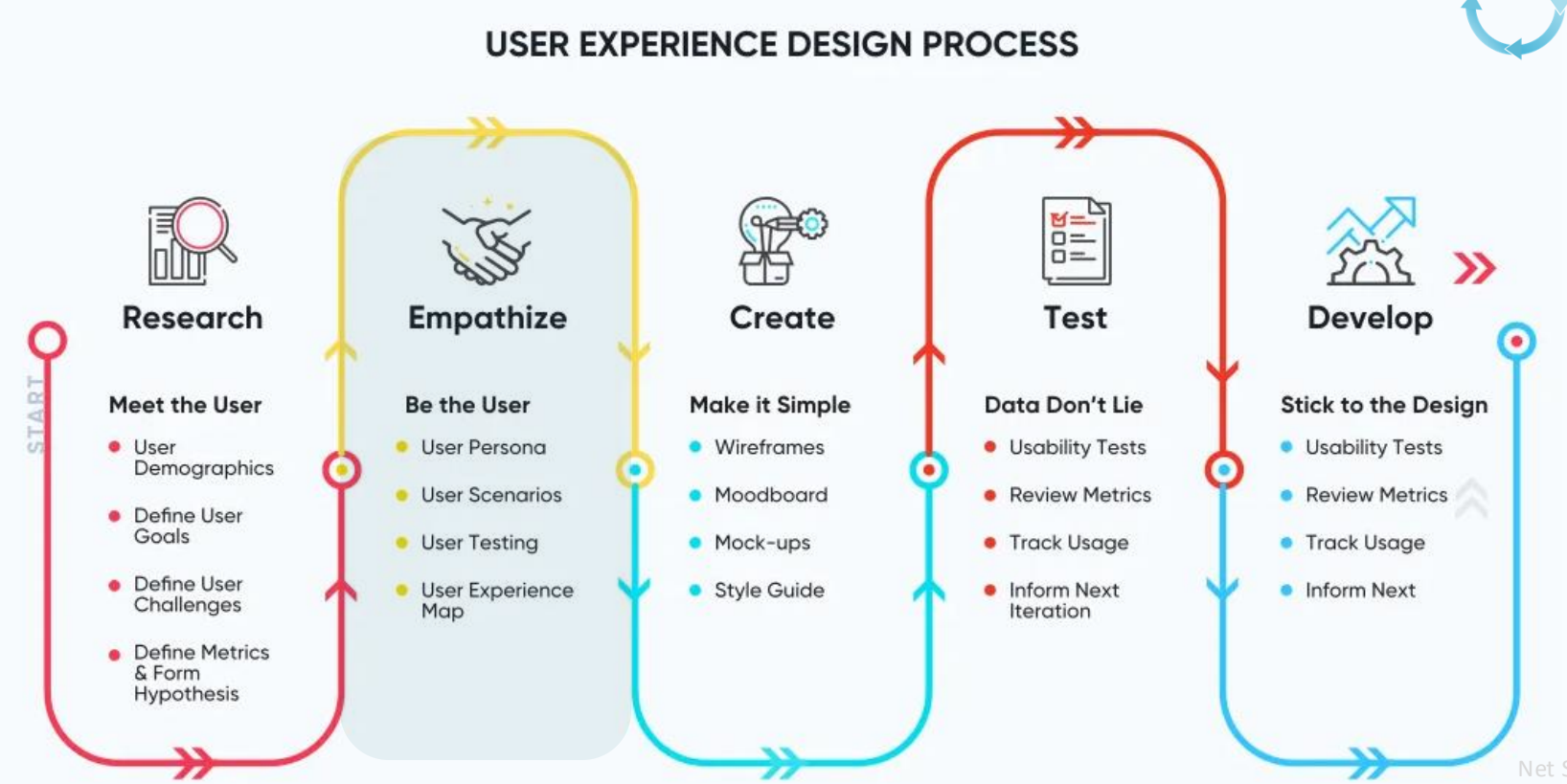

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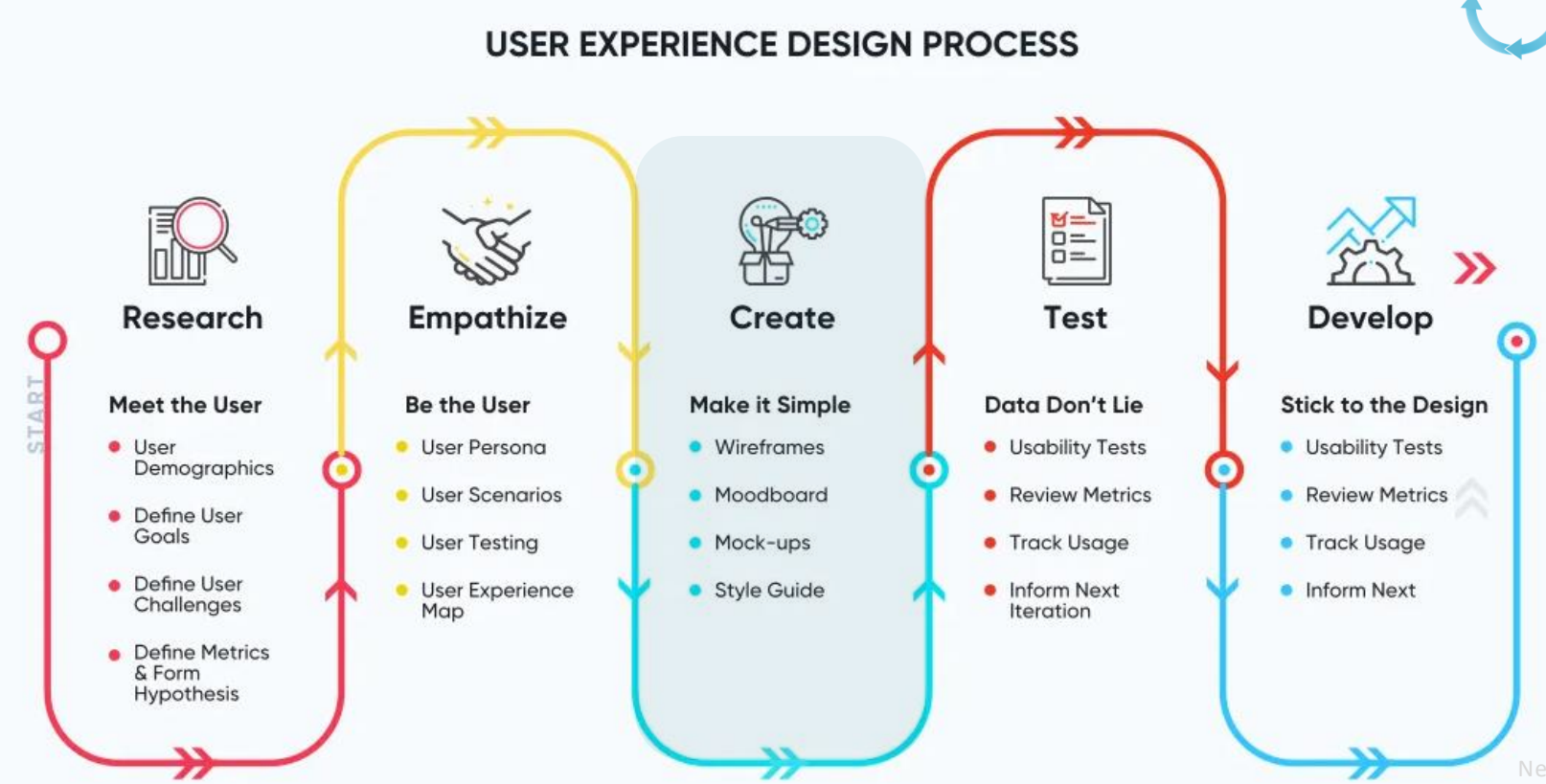

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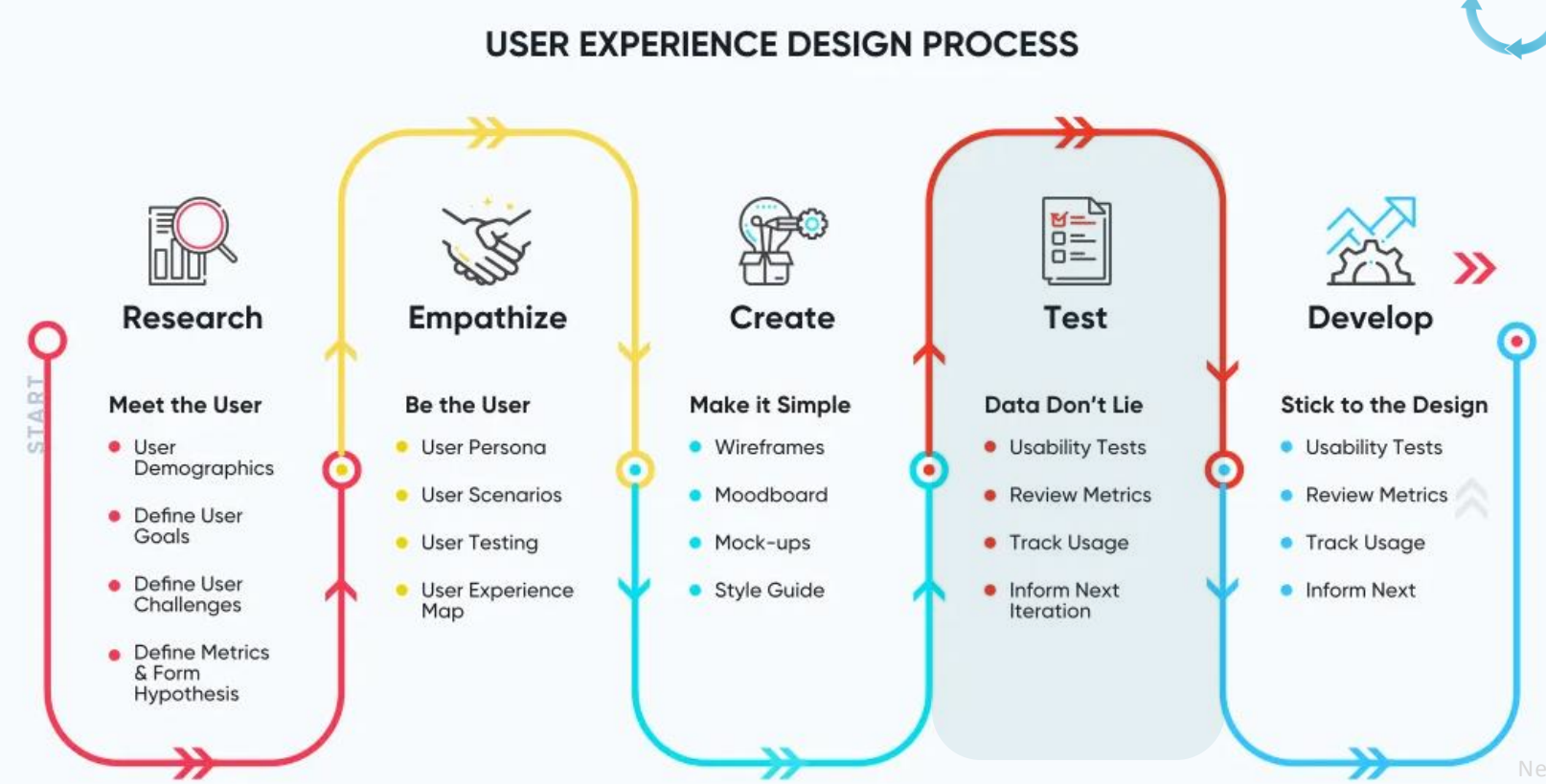

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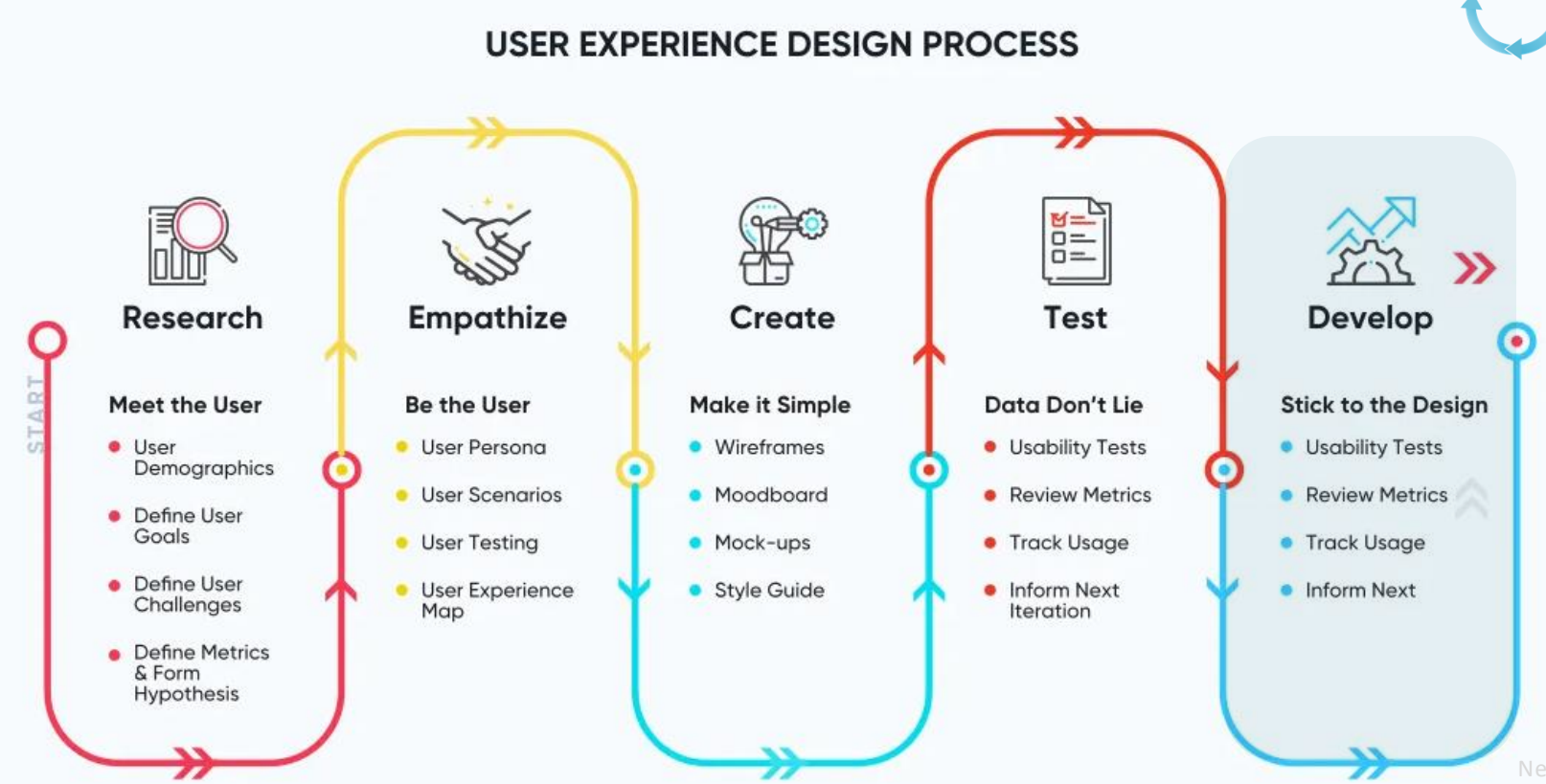
Intro to User Experience – Design Process



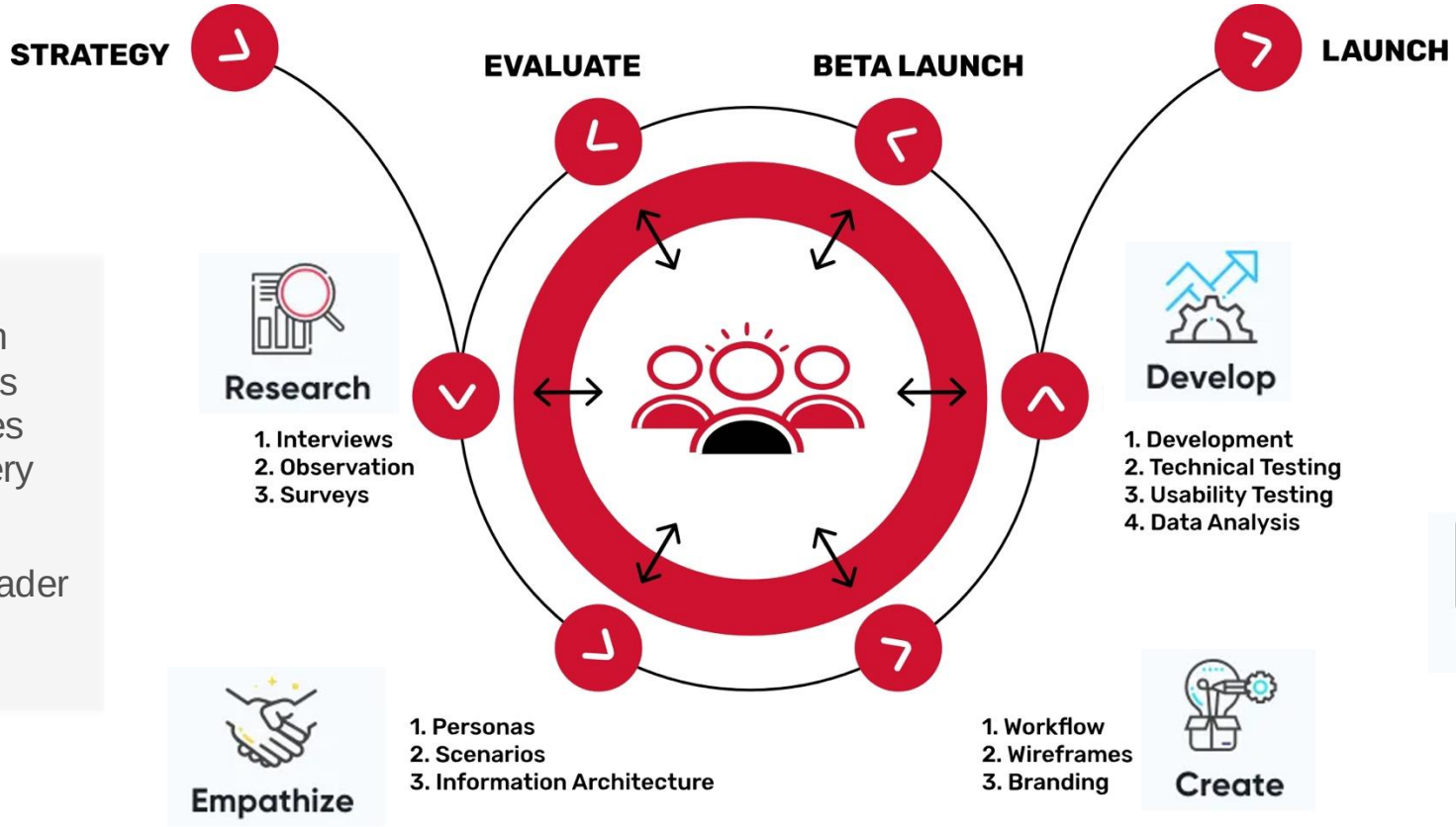
Intro to User Experience – Design Process

Net Solutions

Intro to User Experience – Broader Process

UX design is an iterative process that incorporates research at every step of the way

It informs a broader design process



Think360

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User Research – Methods

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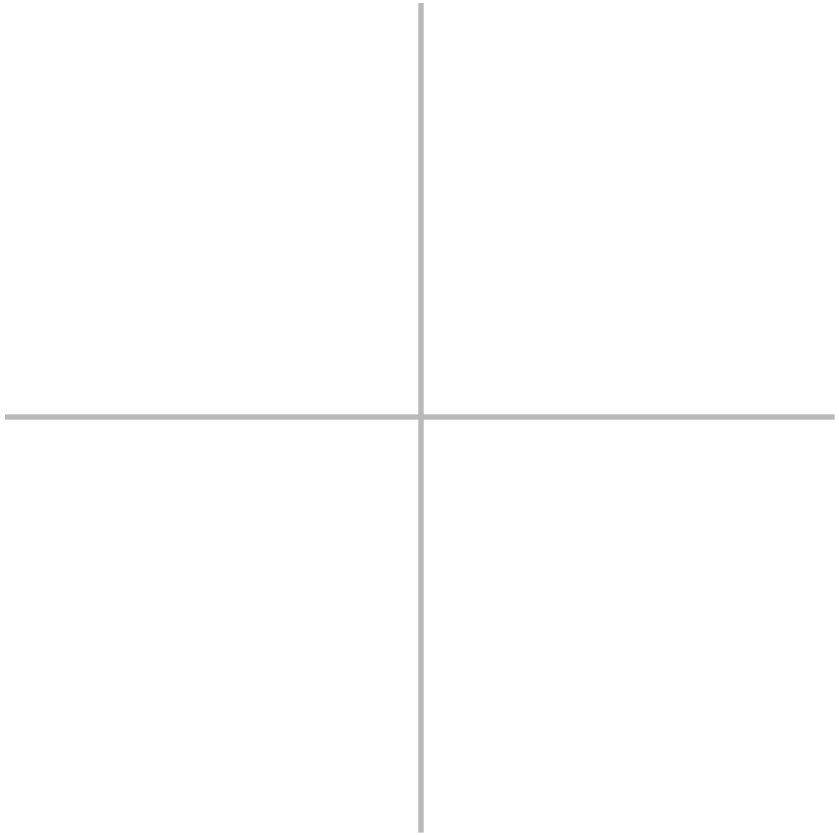
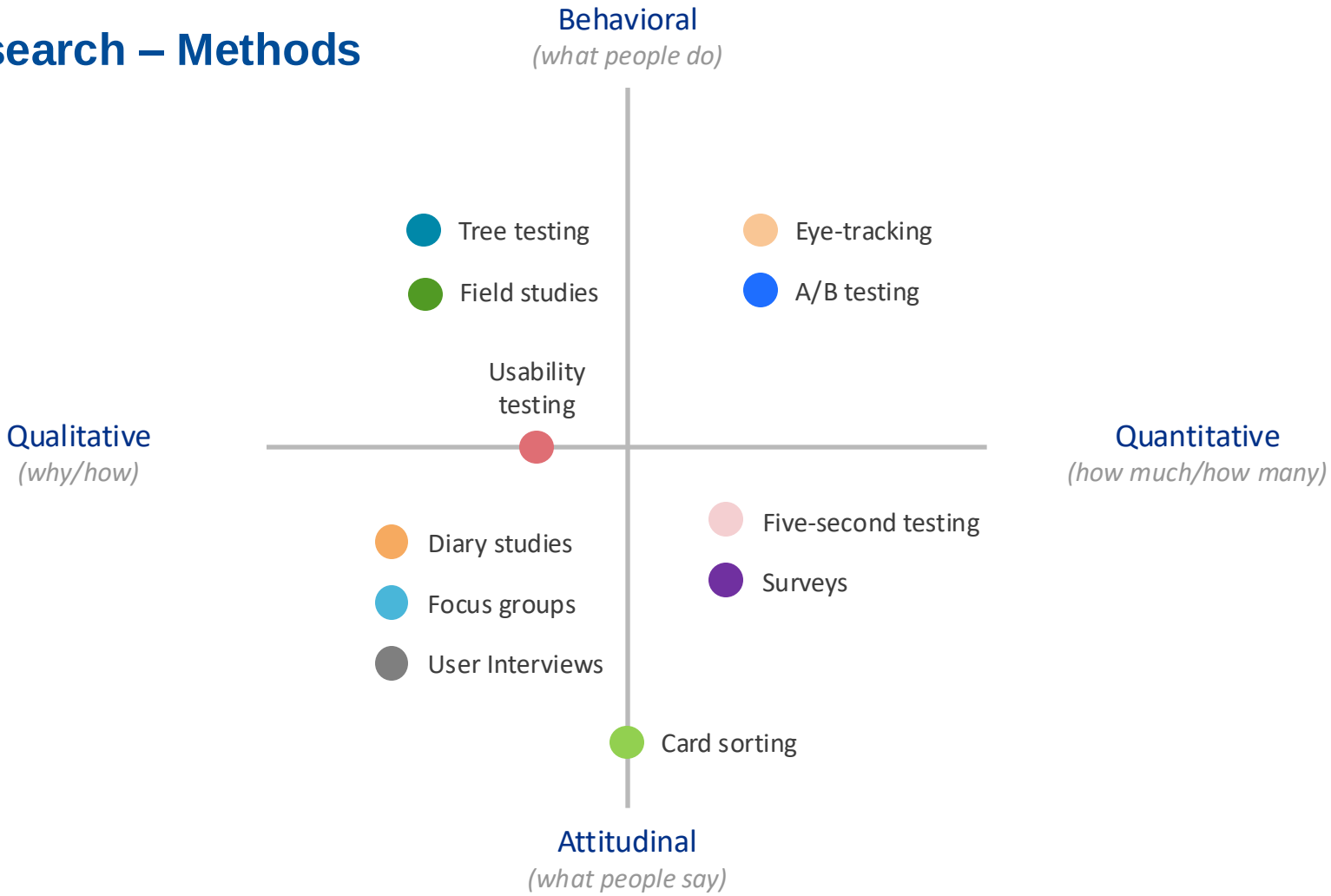


https://maze.co/guides/ux-research/ux-research-methods/

User Research – Methods



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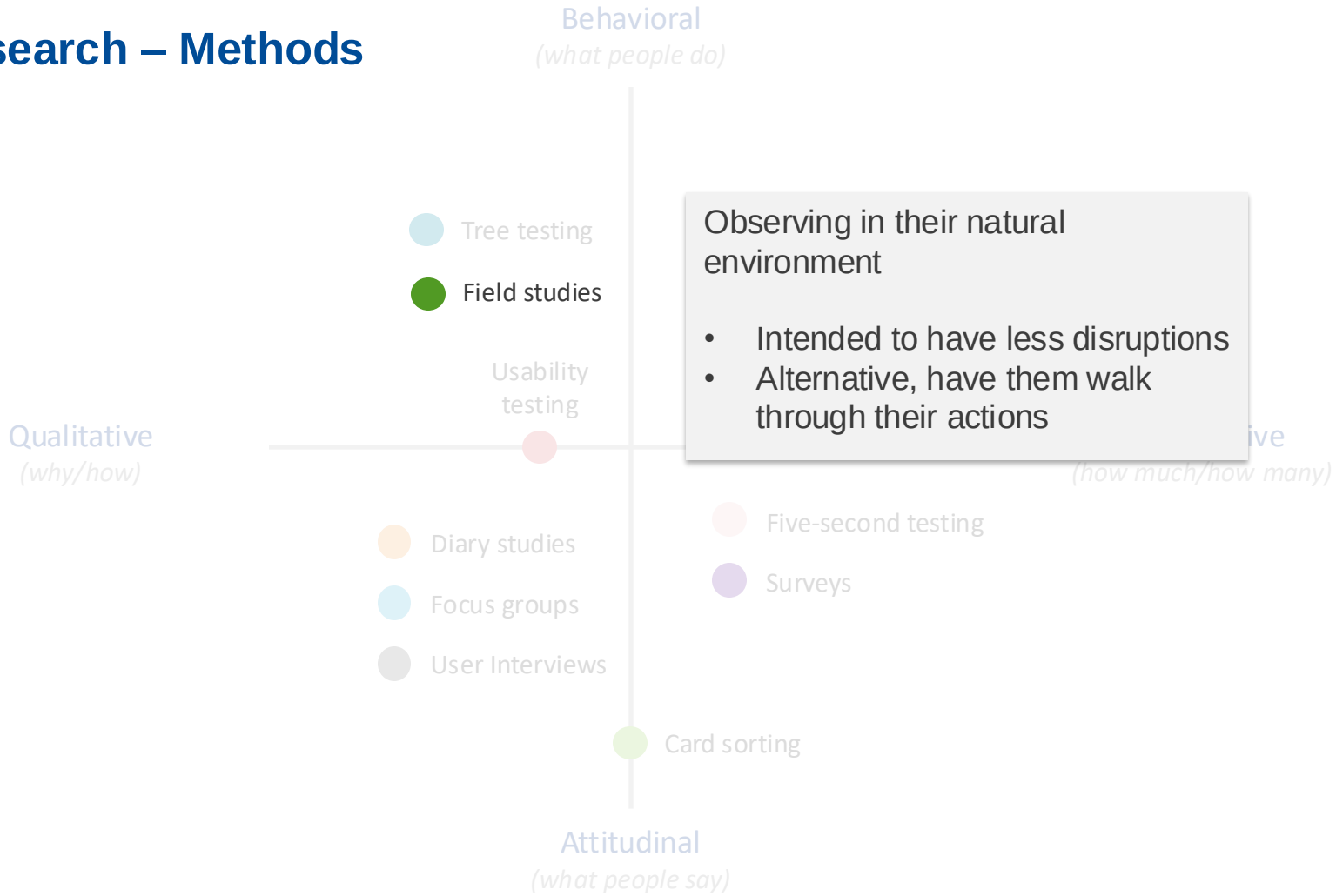
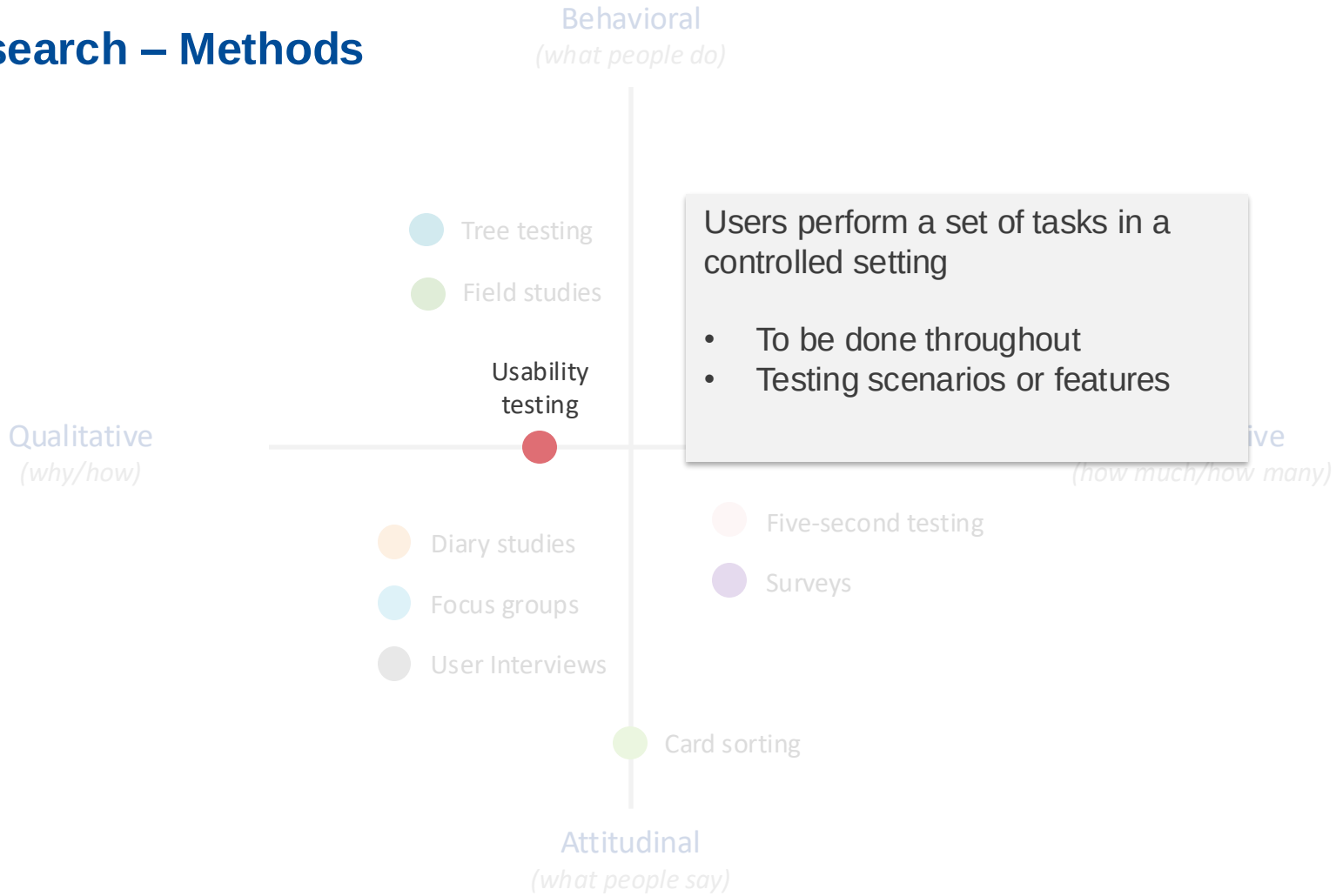


Observing in their natural environment

- Intended to have less disruptions
- Alternative, have them walk through their actions

User Research – Methods



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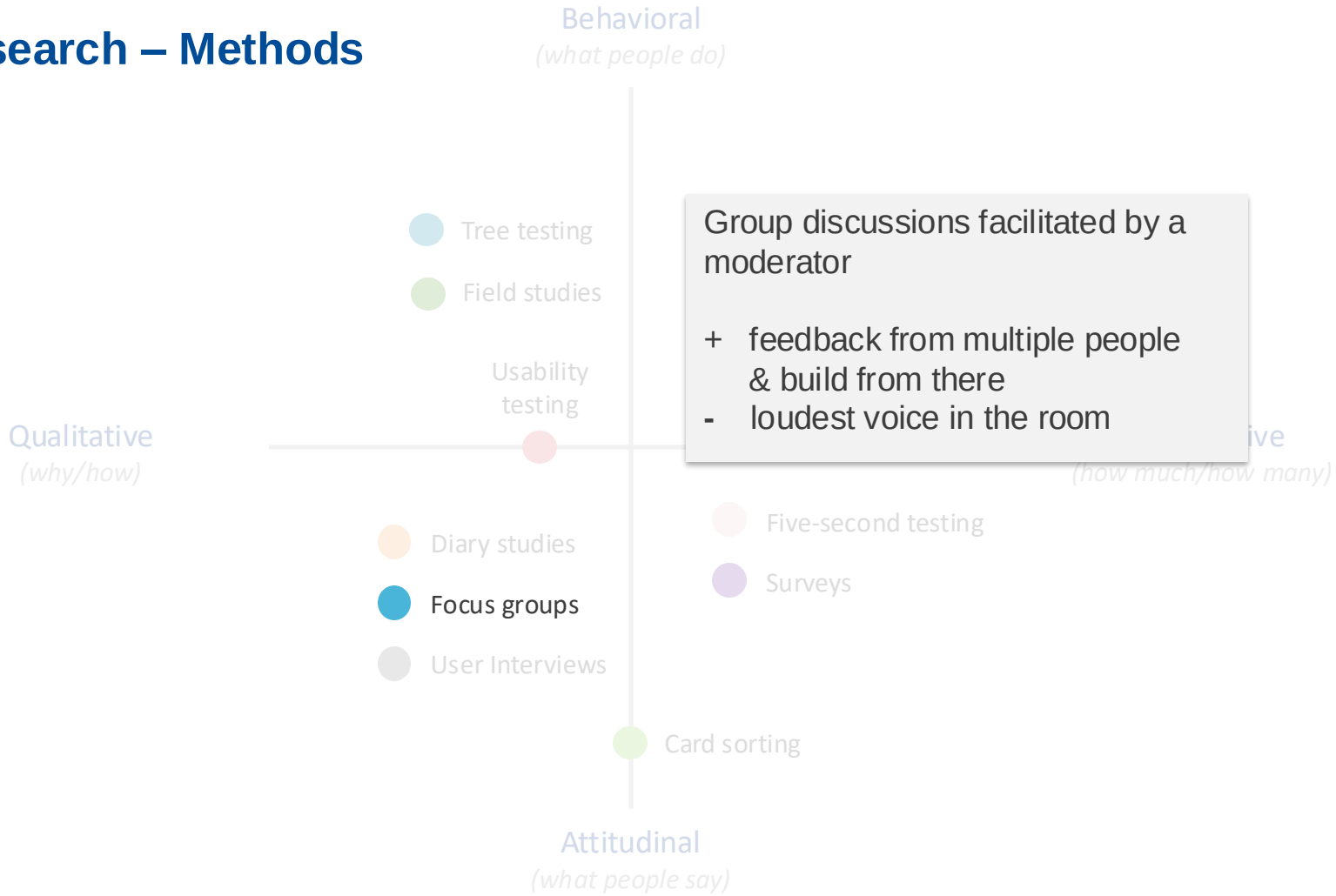
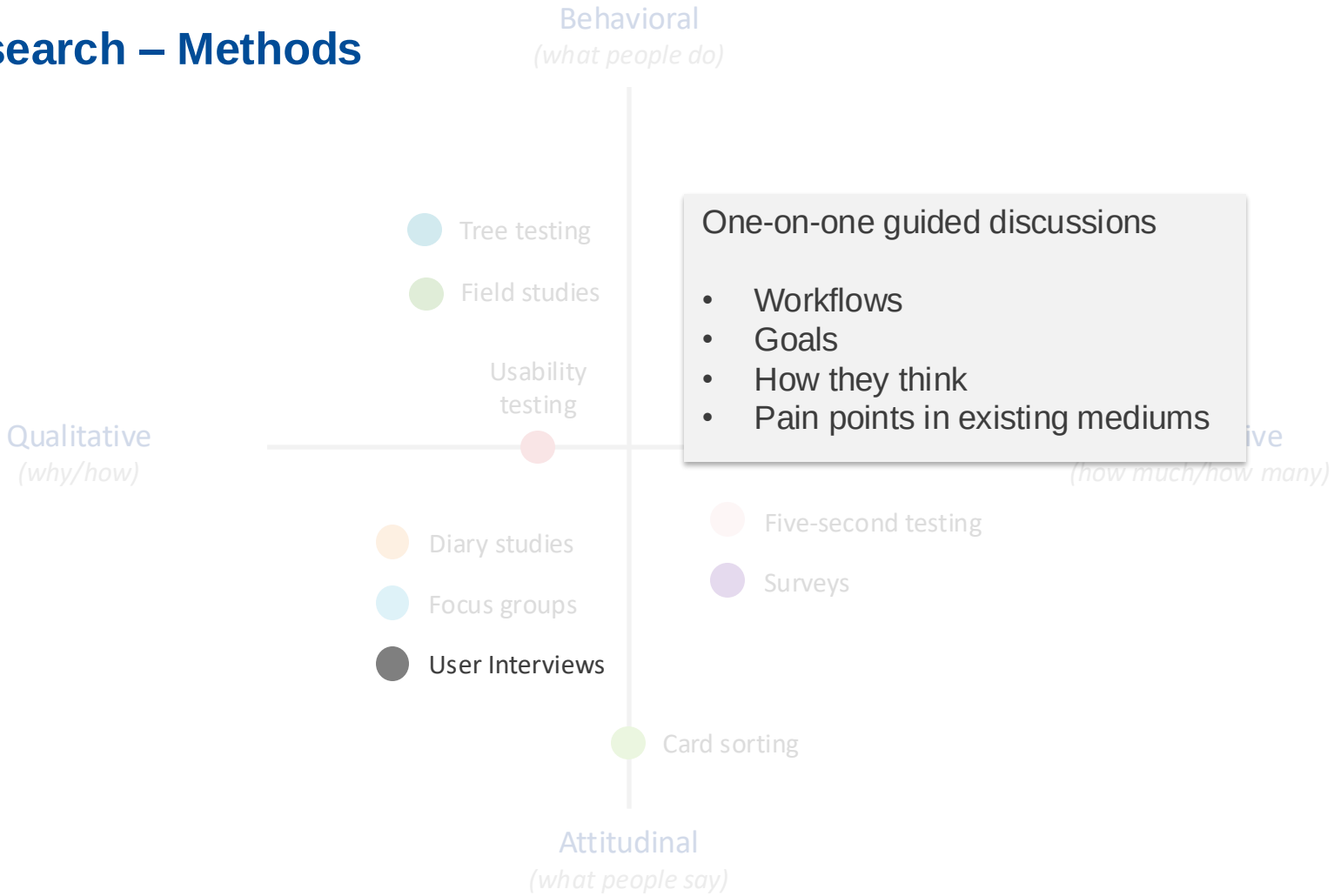


Group discussions facilitated by a moderator

+ feedback from multiple people & build from there
- loudest voice in the room

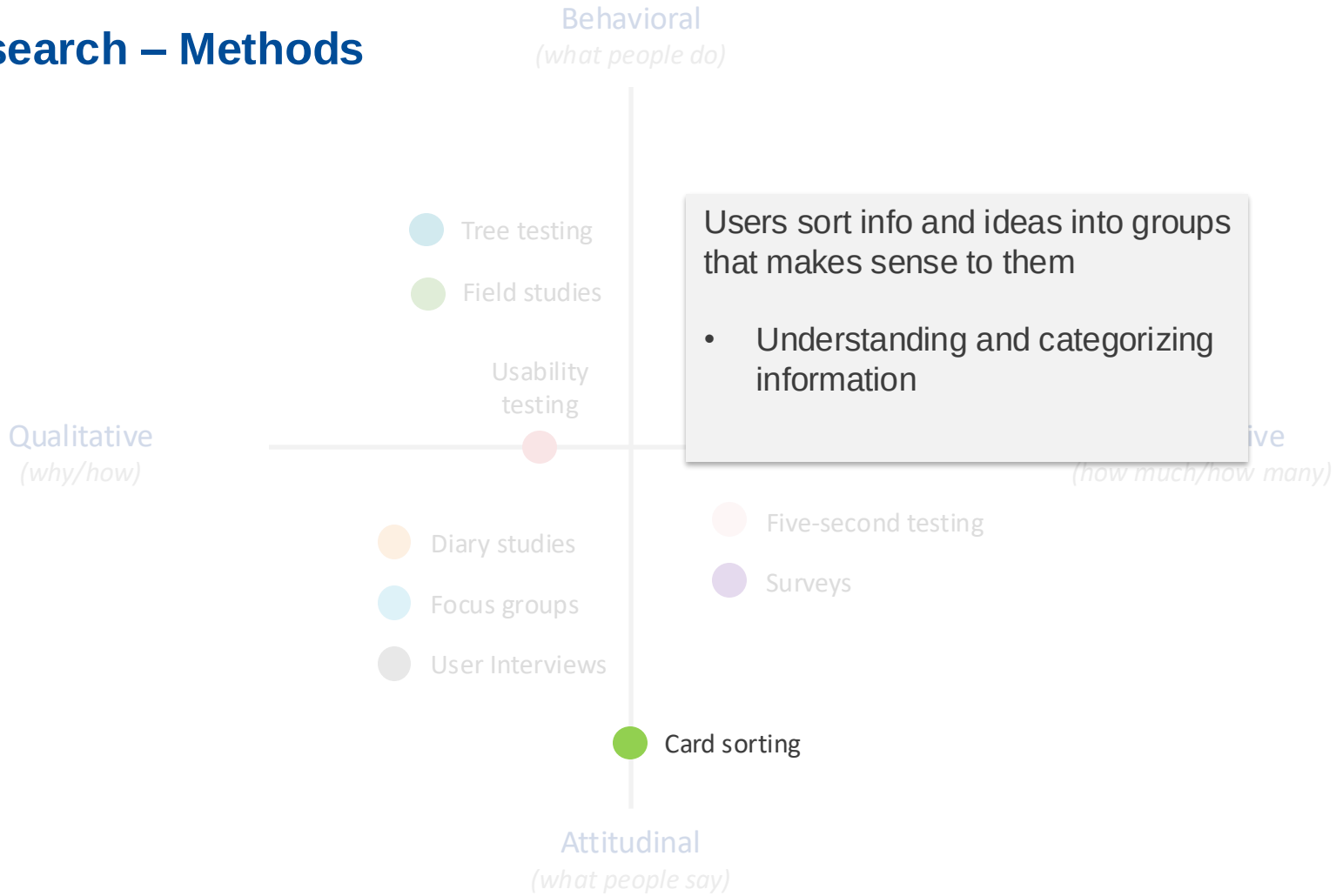
User Research – Methods



One-on-one guided discussions

- Workflows
- Goals
- How they think
- Pain points in existing mediums

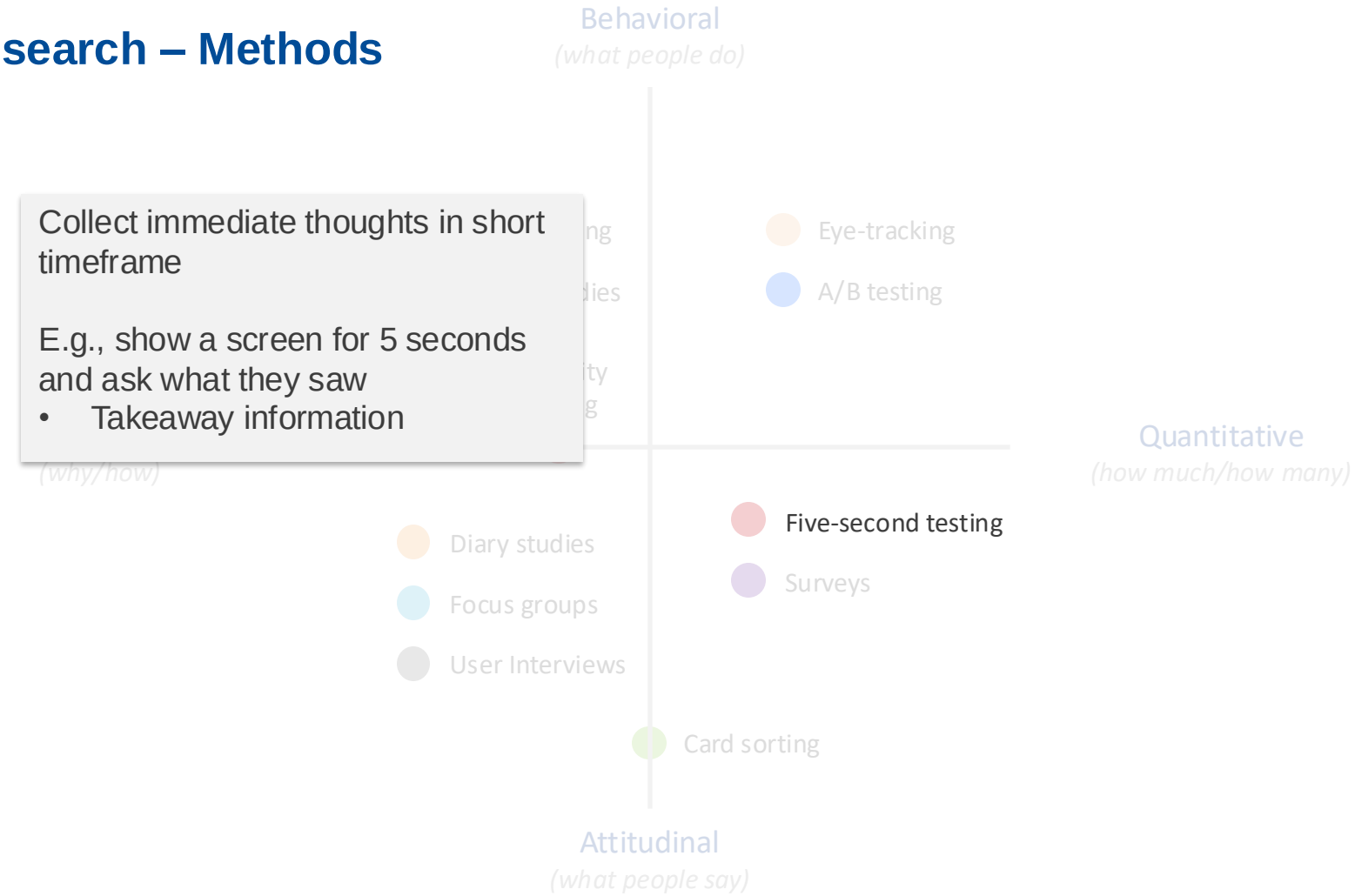
User Research – Methods



Users sort info and ideas into groups that makes sense to them

- Understanding and categorizing information

User Research – Methods

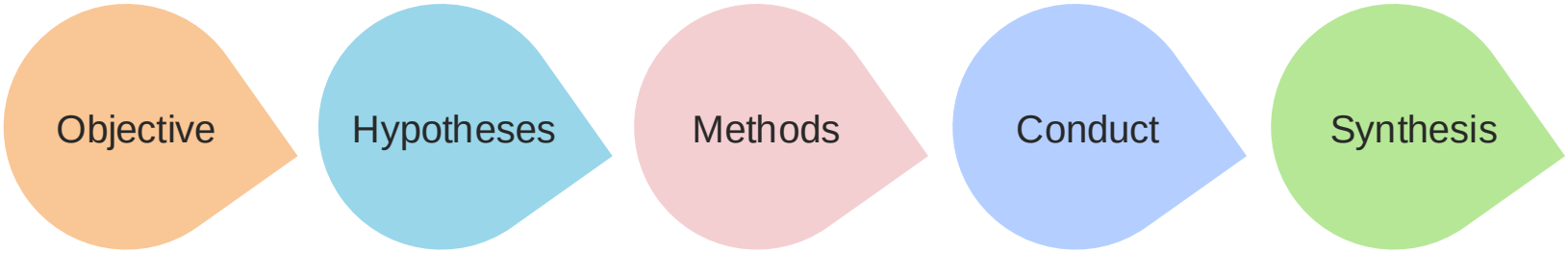


Collect immediate thoughts in short timeframe

E.g., show a screen for 5 seconds and ask what they saw

- Takeaway information

User Research Process



Incorporating User Feedback

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Importance of User Feedback

- Talking to users can break down or validate assumptions
- Learn what is a perceived need vs actual need
  - Example: circle slash

Importance of User Feedback

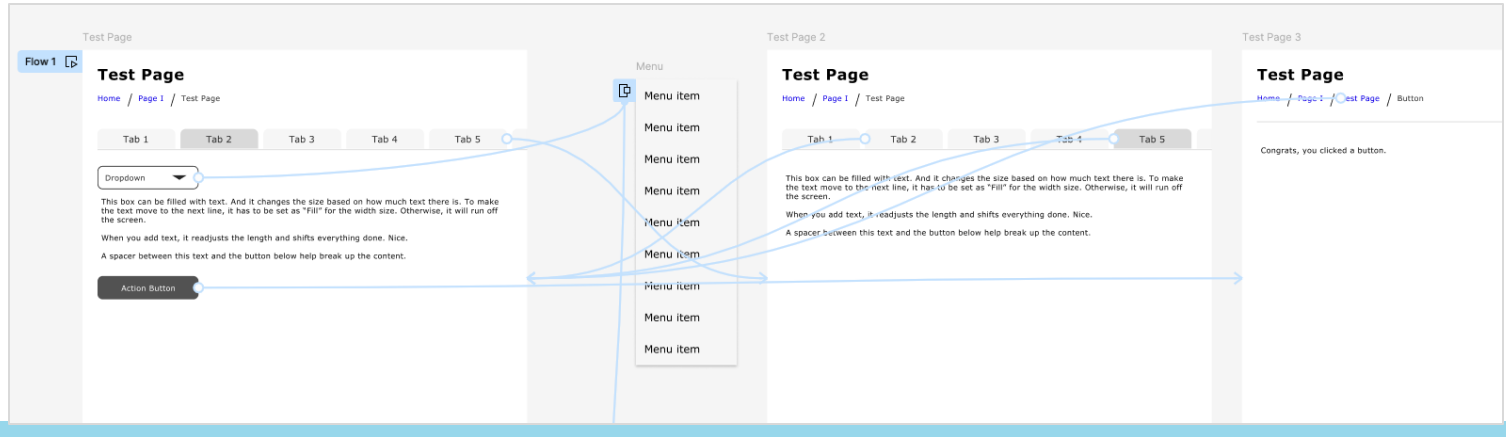
- Receive input throughout development process to help inform decisions
  - Ensure the application fulfills their need and supports their goals
  - Does the design support their workflow? Is it intuitive?
- Focus on the user needs and experience
  - Interactions
  - Feelings
- User input can alleviate challenge of user acceptance

User Feedback with Prototypes & Design

- Ways to get visual feedback
  - Prototypes
    - Early models
    - Static vs functional
  - Designs and built applications (keep testing!)
    - Designs at different stages
    - Applications that have already moved into development
    - Test screens, features, components, labels, etc.

User Feedback with Prototypes & Design

- Rapid prototyping to complement app development
  - Prototypes can get user feedback while developers work on other stories
  - Get feedback on designs quickly without developer spending time fully building out a feature
  - Test out smaller features and functionality
- *Note: a functional prototype can be helpful in developer handoff to help show functionality*



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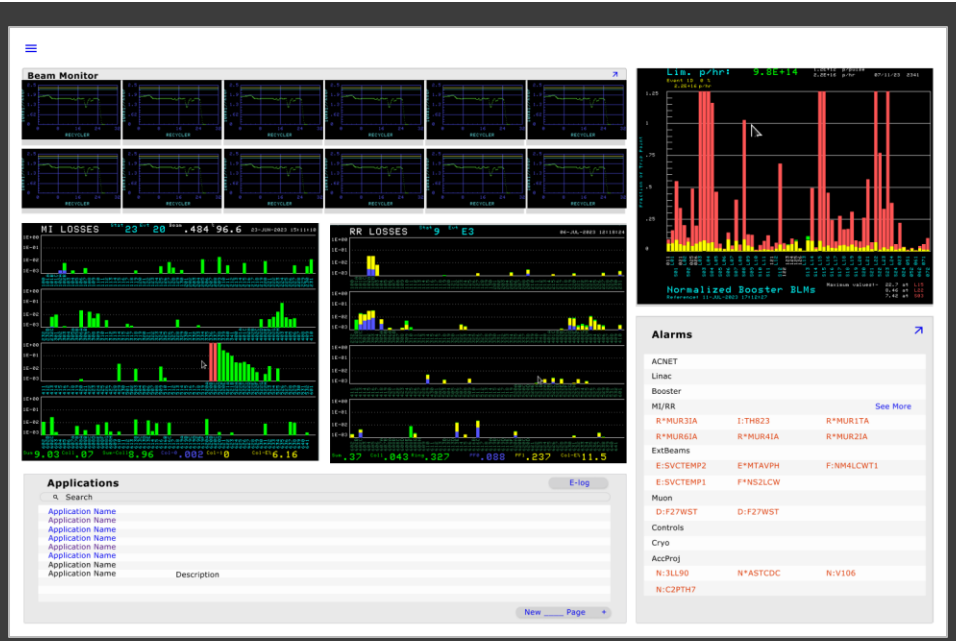
User Feedback with Prototypes & Design

- Show multiple versions



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User Feedback with Prototypes & Design – Case Example

- Parameter Page application
  - Digital status and control

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UX impact

Benefits for the Control System

- The experience of accelerator personnel interacting with the control system sets the tone for the entire accelerator complex
- Improving the interface has the potential to:
  - Create a system with intuitive and predictable visual & functional design
  - Reduce time training on system
  - Free up cognitive space of operators to focus on what they are best at
  - Develop streamlined integration between connected applications
  - Provide structure for current and future operations by creating cohesiveness throughout the entire control system

Potential downfalls if not considered

- Pains in a user's workflow
  - Slowing tasks down
  - Needing to reach out to someone for help
  - Confusion of where to find something
- Negative emotional response
- Resorting to other options/reverting to old applications
- Feature creep and/or lack of necessities
  - Adding things the user doesn't need
  - Leaving out things the user does need
- There are instances where "best practices" can be unhelpful to the user

Ways we can implement

- Decisions informed by users and their interactions
  - Keep UX top of mind
  - Include users in process
- Different methods of user research and testing
- Cognizant of time with users to not overwhelm and discourage; be intentional

Note: It doesn't have to slow down a process

Takeaways

- Implementing user experience processes can ensure a product meets user needs
  - Positive user engagement & user acceptance
  - Support user workflows and goals
  - Confidence, trust, and credibility
- There are many UX research methods available—include your users!
  - Find what fits for where you are in development
  - Usability testing and feedback throughout can go a long way
- User research eliminates building off assumptions

Thank you! Questions?

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