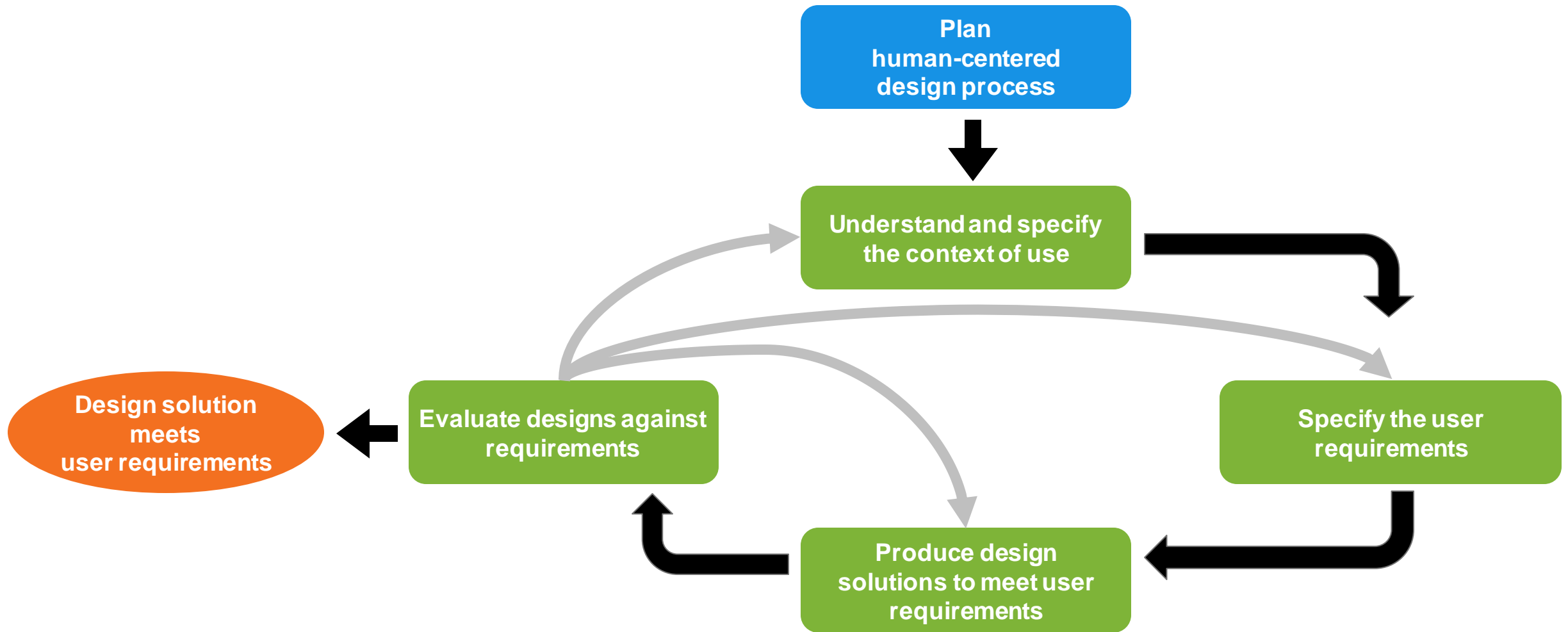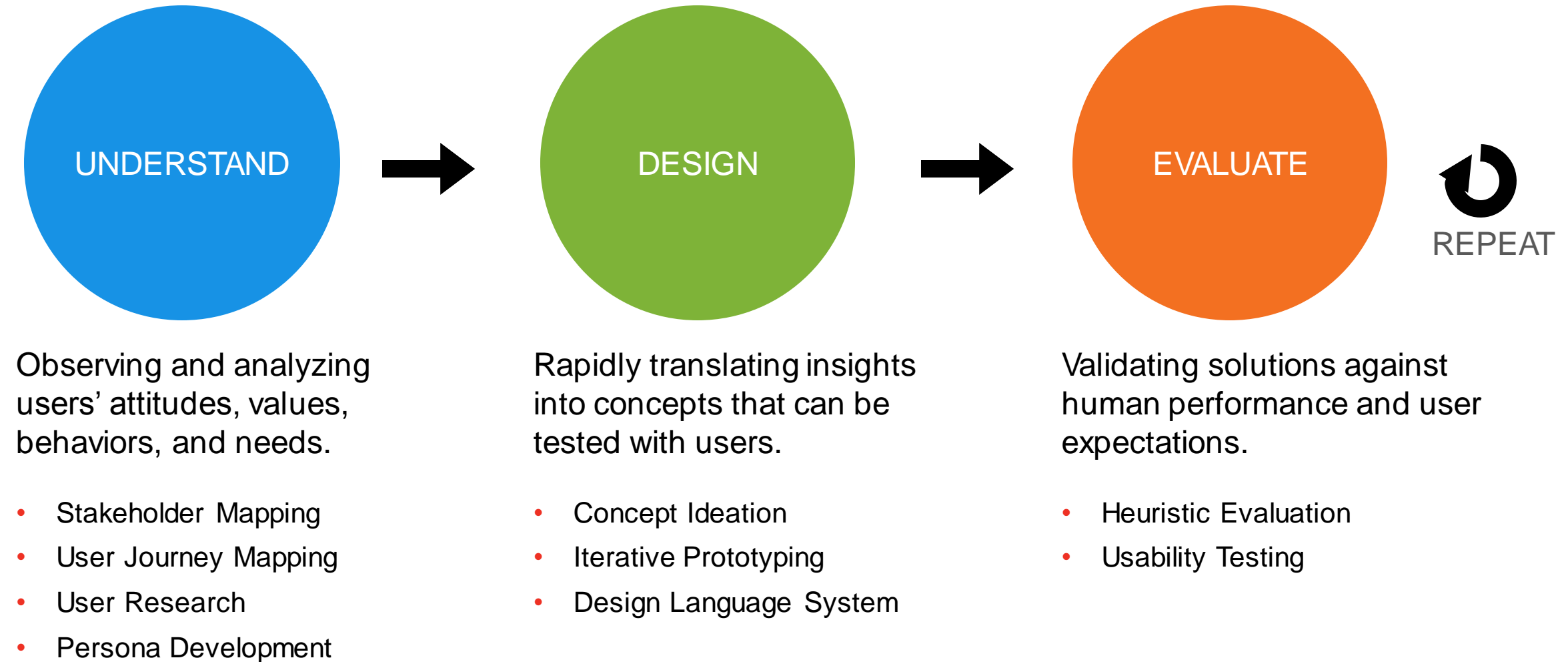# Introduction



- Our HUE process is derived from 10 standard UX methods for research design, and evaluation that we use throughout Honeywell
- We applied our toolbox to standard software Agile and Waterfall development processes

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# User-centered Design Process



ISO 9241-210: Ergonomics of human-system interaction -- Part 210: Human-centered design for interactive systems
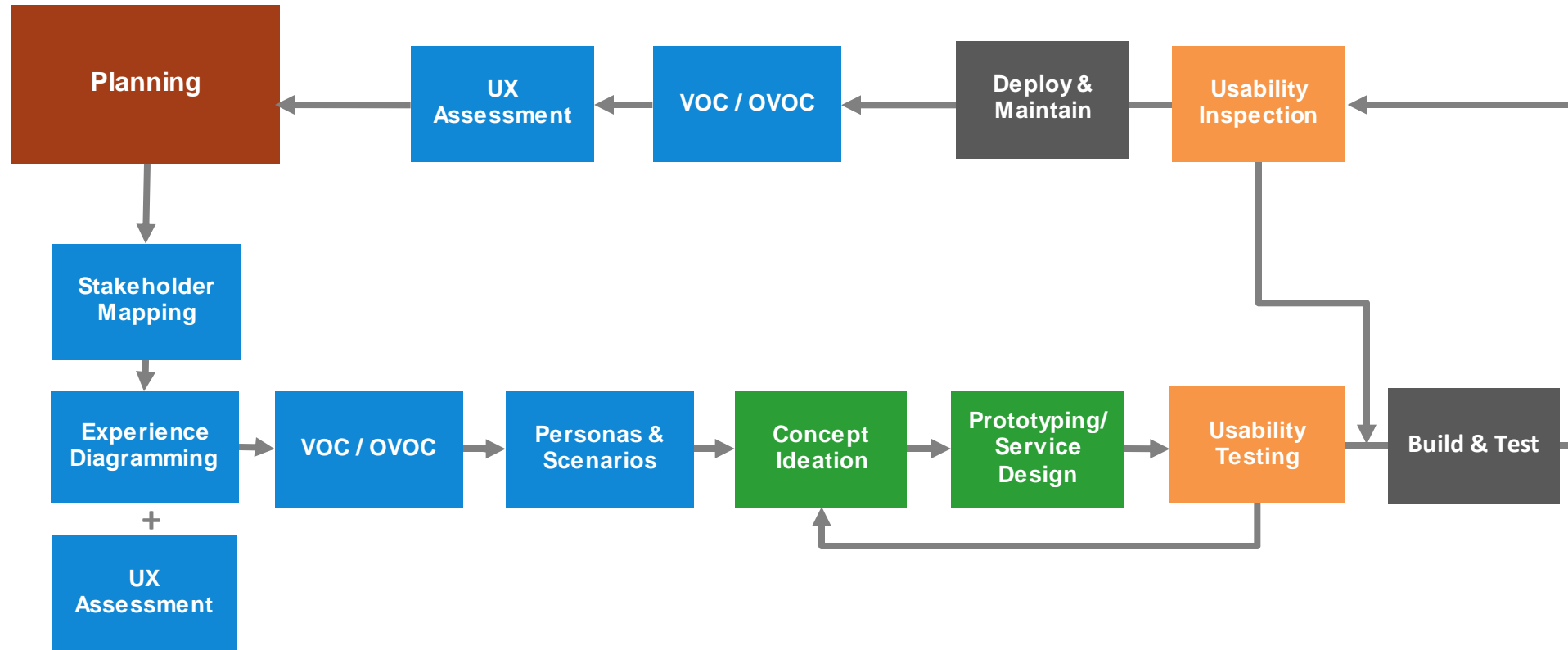
# HUE PROCESS

## UNDERSTAND

Observing and analyzing users' attitudes, values, behaviors, and needs.

- Stakeholder Mapping
- User Journey Mapping
- User Research
- Persona Development

## DESIGN

Rapidly translating insights into concepts that can be tested with users.

- Concept Ideation
- Iterative Prototyping
- Design Language System

## EVALUATE

Validating solutions against human performance and user expectations.

- Heuristic Evaluation
- Usability Testing

REPEAT

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# IT HUE Process Building Blocks

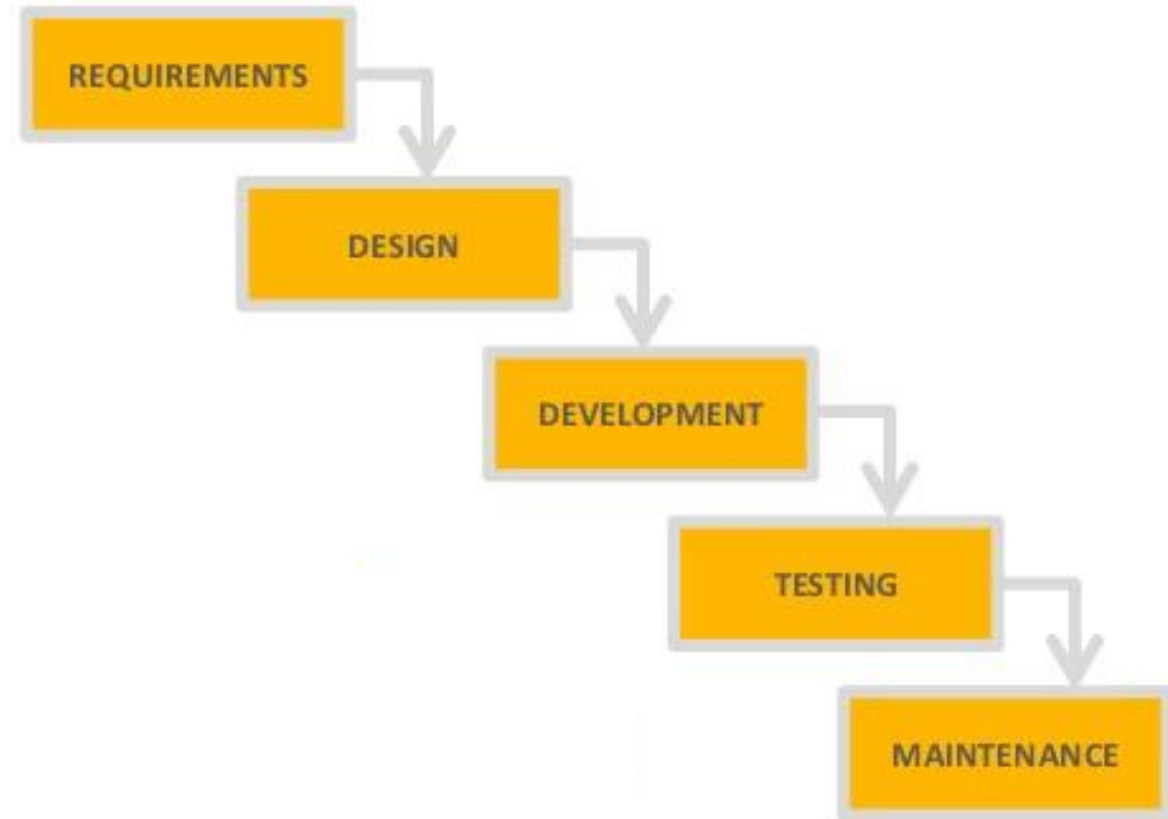| Phases | Blocks | Methods | Output | Roles |
|--------|--------|---------|--------|-------|
| Planning | Planning | Planning scope, resources, timeline | HUE project plan embedded in overall project plan | Project Manager, HUE Lead |
| Understand | Stakeholder Mapping | Bulls-eye diagramming, Affinity diagramming | Prioritized list of stakeholders and their key characteristics | Project team, UX Designer |
| | Experience Diagramming | Journey mapping, Touch-point analysis | End-to-end user flows | Project team, UX Designer |
| | UX Assessment | Usability Testing, Heuristic Evaluation, Competitive Analysis | UX report (incl. "Before" metric) | UX Designer |
| | VOC & OVOC | Surveys, Interviews, Contextual inquiries | Stakeholder characteristics, needs | Project team, UX Designer |
| | Personas & Scenarios | Definition of target users, flows and system abilities | Personas, use cases, requirements | Project team, UX Designer |
| Design | Concept Ideation | Storyboarding, Wireframing | Storyboards, Information Architecture, Wireframes | UX Designer, Visual Designer |
| | Prototyping | Prototyping | Click through mock-ups as live spec, comps, annotated wireframes | UX Designer, Visual Designer |
| Evaluate | Usability Testing | Think Aloud Testing with target users | UX report (incl. "After" SUS) | UX Designer |
| | Usability Inspection | Heuristic Evaluation, Gap Analysis (Design vs Build) | UX report (incl. "After" metric) | UX Designer, Visual Designer |

HUE Roles:
- **HUE Lead**: HUE scoping, coordination, communication, management
- **UX Designer**: User research, UX evaluation, Information Architecture, Interaction Design
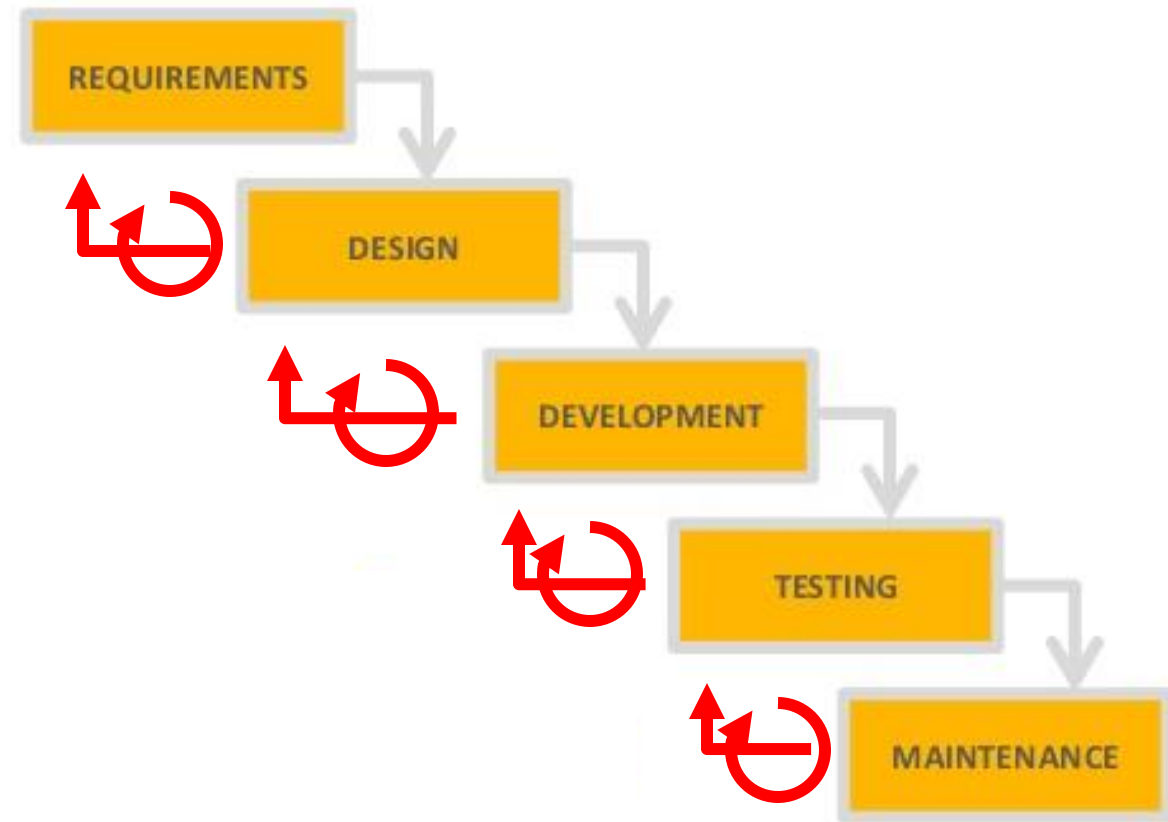- **Visual Designer**: Application of Honeywell Design Language System, Iconography

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# The IT HUE Process

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# Waterfall Process (General)

The regular waterfall software development process that is typical within the industry

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# Iterative Process (still waterfall…)

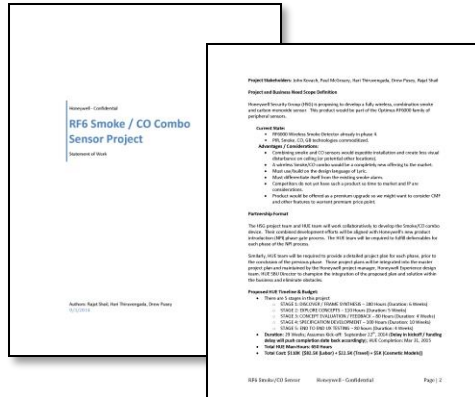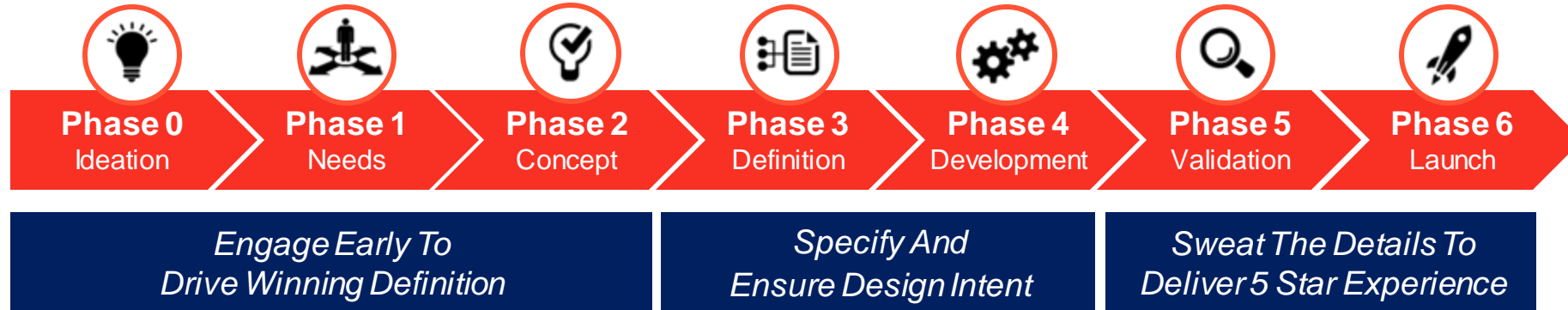The regular waterfall software development process that is typical within the industry

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# HUE PROCESS

- UX Design as a stand-alone is easy



- UX Design as part of a business and in concert with other disciplines is hard

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# A HUE plan is crucial to NPD Execution!

| Phase 0 Ideation | Phase 1 Needs | Phase 2 Concept | Phase 3 Definition | Phase 4 Development | Phase 5 Validation | Phase 6 Launch |

**Engage Early To Drive Winning Definition**

**Specify And Ensure Design Intent**

**Sweat The Details To Deliver 5 Star Experience**
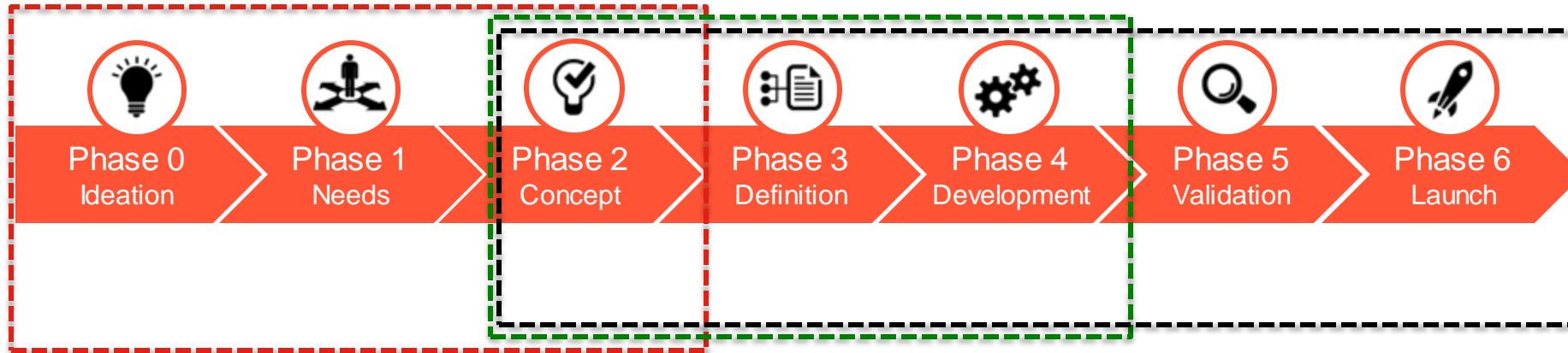
- Resource & plan HUE activities early for success
- Early engagement provides greatest opportunity to differentiate
- User Experience requirements drive Design (user vs. technology-centered)
- Leverage cross functional teams, suppliers and customers

**HUE Work Plan**

| ID | Task | 2014 Q2 | Q3 | Q4 | 2015 Q1 | Q2 | Q3 | Q4 |
|----|------|---------|----|----|---------|----|----|----|
| | **Task** | | | | | | | |
| 2 | **Understand** | | | | | | | |
| 3 | *Pilot (Phase A, Cycle II)* | | | | | | | |
| 5 | *Installation & Maintenance (Controllers) (Phase A, Cycle I)* | | ◊ | | | | | |
| 12 | *Ground Crew (Phase A, Cycle I)* | | ◊ | | | | | |
| 19 | *Ground Controller (Phase A, Cycle I)* | | | ◊ | | | | |
| 26 | **Design - MSN234** | | | | | | | |
| 27 | *Pilot (Phase A, Cycle II)* | ◊ | | | | | | |
| 44 | *Installation & Maintenance (Phase A, Cycle II)* | | ◊ | | | | | |
| 47 | *Ground Crew (Phase A, Cycle I)* | | ◊ | | | | | |
| 50 | *Ground Controller (Phase A, Cycle I)* | | | ◊ | | | | |
| 53 | **Evaluate - MSN234** | | | | | | | |
| 54 | *Pilot (Phase A, Cycle I)* | ◊ | | | | | | |
| 58 | *Pilot (Phase A, Cycle I)* | | | ◊ | | | | |
| 63 | *Installation & Maintenance (Phase A, Cycle I)* | | | ◊ | | | | |
| 68 | *Ground Crew (Phase A, Cycle I)* | | | | ◊ | | | |
| 73 | *Ground Controller (Phase A, Cycle I)* | | | | | ◊ | | |

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# NPD Process



| | | | | | | |
|---|---|---|---|---|---|---|
| Phase 0 Ideation | Phase 1 Needs | Phase 2 Concept | Phase 3 Definition | Phase 4 Development | Phase 5 Validation | Phase 6 Launch |

**UNDERSTAND**

Observing and analyzing users' attitudes, values and behaviors, and needs.
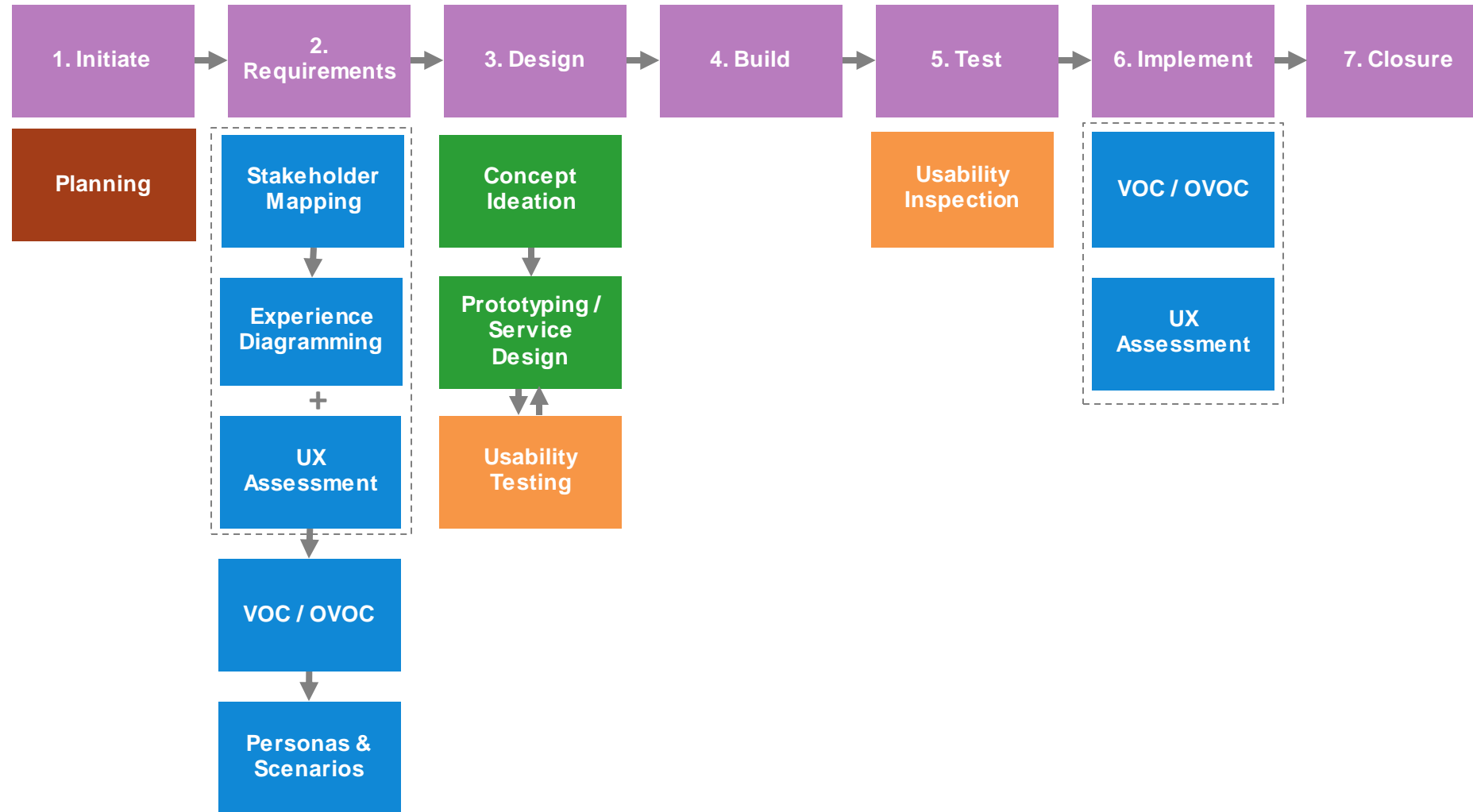
**DESIGN**

Rapidly translating insights into concepts that can be tested with users.

**EVALUATE**

Feedback to align solutions with human performance and user expectations.

- Cost of change grows exponentially over development process
- Garbage in – garbage out
- → Start with HUE as early as possible; UNDERSTAND phase is critical for success

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# IT HUE Process - Waterfall

| 1. Initiate | 2. Requirements | 3. Design | 4. Build | 5. Test | 6. Implement | 7. Closure |
|---|---|---|---|---|---|---|

**Planning**

**Stakeholder Mapping**

↓

**Experience Diagramming**

**+**

**UX Assessment**

↓

**VOC / OVOC**

↓

**Personas & Scenarios**

**Concept Ideation**

↓

**Prototyping / Service Design**

↓

**Usability Testing**
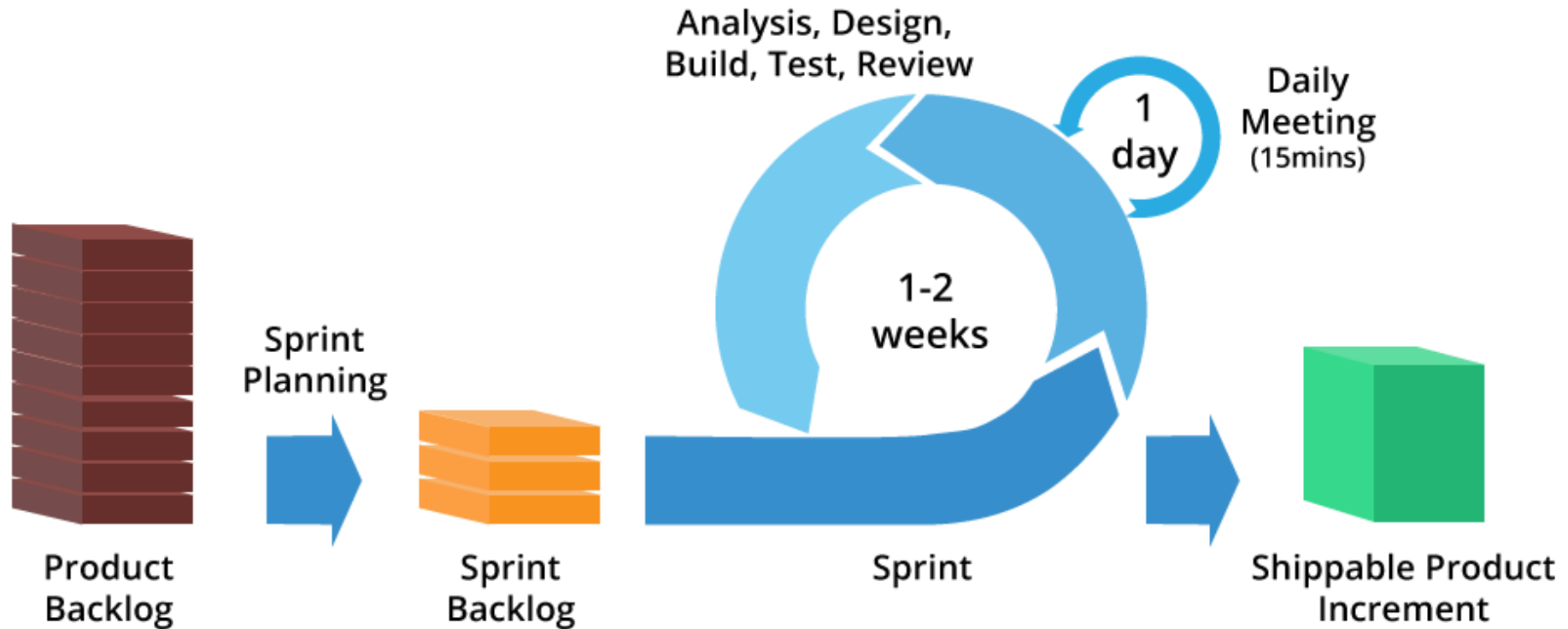
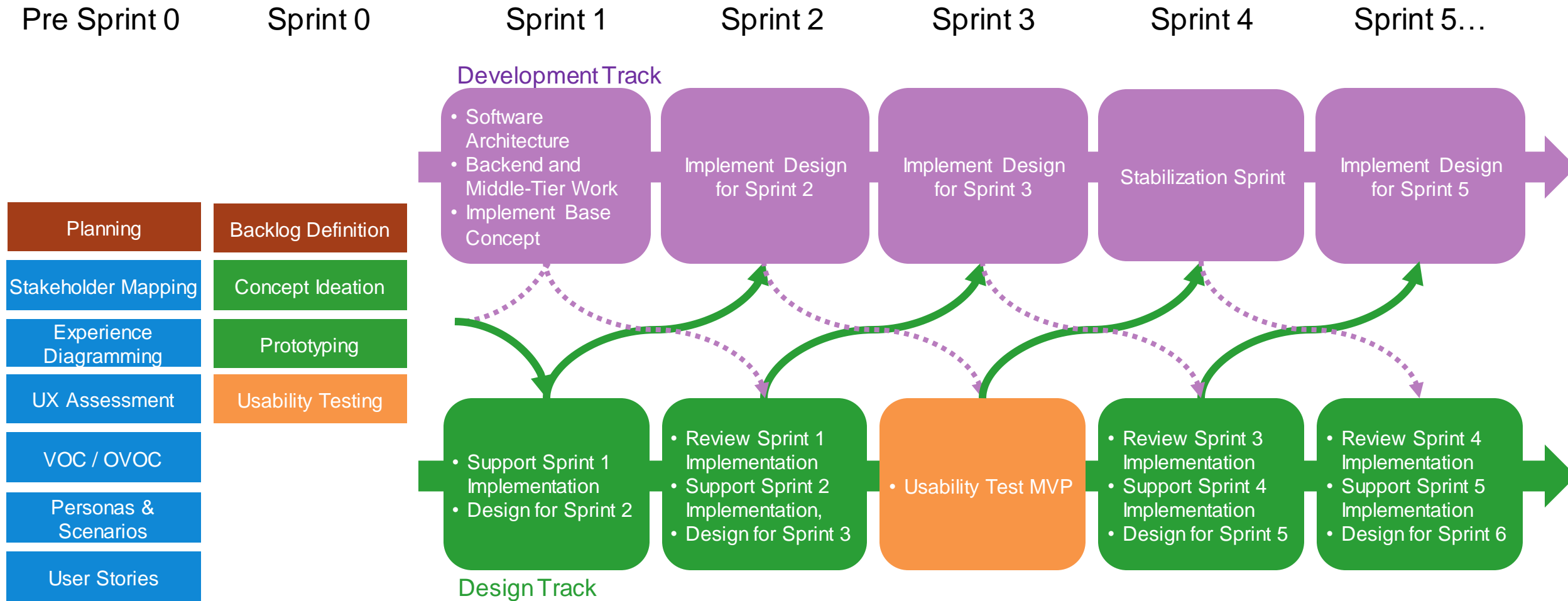**Usability Inspection**

**VOC / OVOC**

**UX Assessment**

⌐ ¬ Steps to be done to move to the next step

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# Agile Process

The Agile software development process that is typical within the industry

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# IT HUE Process - Agile

Pre Sprint 0 | Sprint 0 | Sprint 1 | Sprint 2 | Sprint 3 | Sprint 4 | Sprint 5...

**Development Track**

| Software Architecture • Backend and Middle-Tier Work • Implement Base Concept | Implement Design for Sprint 2 | Implement Design for Sprint 3 | Stabilization Sprint | Implement Design for Sprint 5 |

Planning | Backlog Definition

Stakeholder Mapping | Concept Ideation

Experience Diagramming | Prototyping

UX Assessment | Usability Testing

VOC / OVOC

Personas & Scenarios

User Stories

**Design Track**

- Support Sprint 1 Implementation
- Design for Sprint 2

- Review Sprint 1 Implementation
- Support Sprint 2 Implementation,
- Design for Sprint 3

- Usability Test MVP

- Review Sprint 3 Implementation
- Support Sprint 4 Implementation
- Design for Sprint 5

- Review Sprint 4 Implementation
- Support Sprint 5 Implementation
- Design for Sprint 6

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# SERVICE MENU

## WHAT WE DO

### HUE Strategy & Innovation

- o Design Thinking as a Strategy
- o DLS Creation

### HUE Project Execution

- UNDERSTAND
  - o Journey Mapping
  - o Touchpoint Analysis
  - o Stakeholder Mapping
  - o (Observational) Voice of Customers
  - o Personas
  - o Usage Scenarios/User Stories
- DESIGN
  - o Concept Ideation
  - o Iterative Prototyping
  - o Application of DLS
- EVALUATE
  - o Heuristic Analysis
  - o Usability Testing

### Coaching during solution lifecycle

### Training & Evangelism

## WHAT WE DON'T DO

- Technical & Business requirements definition.
- Front-end implementation, integration and testing.
- Account for HUE in projects that have already started and that passed the planning stage.
- Copy creation and technical documentation.
- Ad-hoc beautification of marketing and communication-related material like newsletters, posters, etc.

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# Capability & Capacity

Currently 17 HUE experts located in Morris Plains and Bangalore

| User Experience | Visual Design |
|---|---|
| • User Research<br>• Information Architecture<br>• Interaction Design<br>• UX Evaluation | • Graphic Design<br>• Iconography<br>• DLS Application |

Tobias Komischke

Bob Bossinger

Sunil Das

Ryan Courter

George Davis

Tejaswini V

Joseph Nearhouse

Satyajit Apte

Prasad Boominathan

Madhu Gupta

Vincent Boyce

Michael Perez

Rajshree Nair

Ganesh Natolana

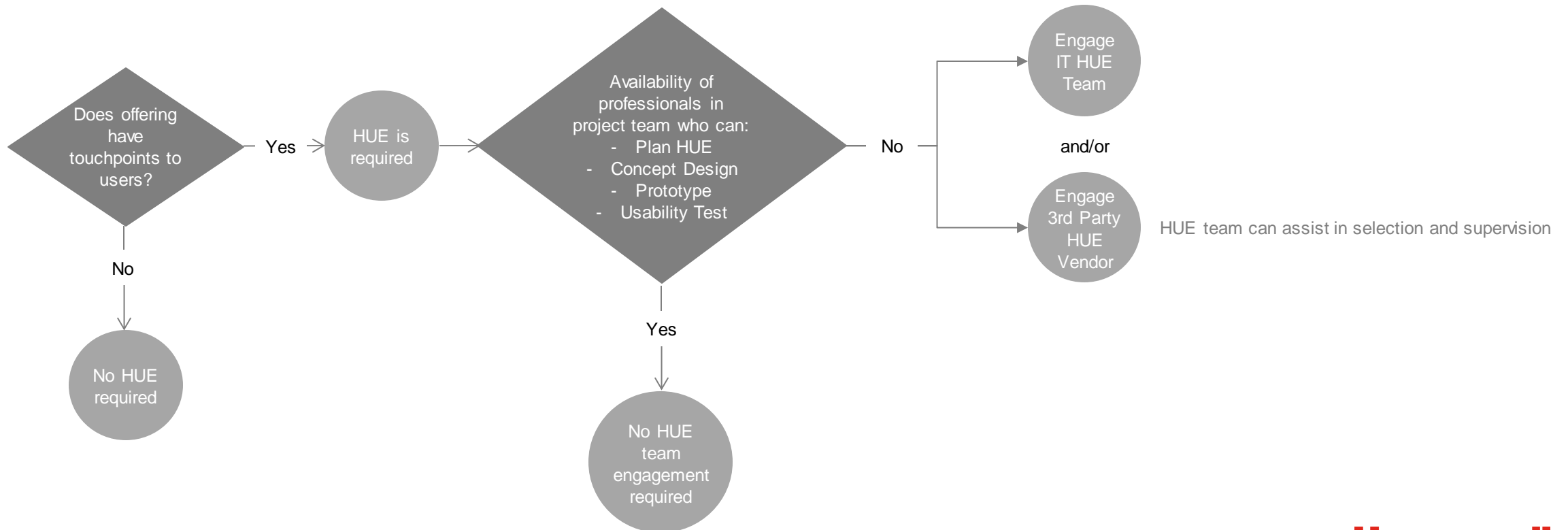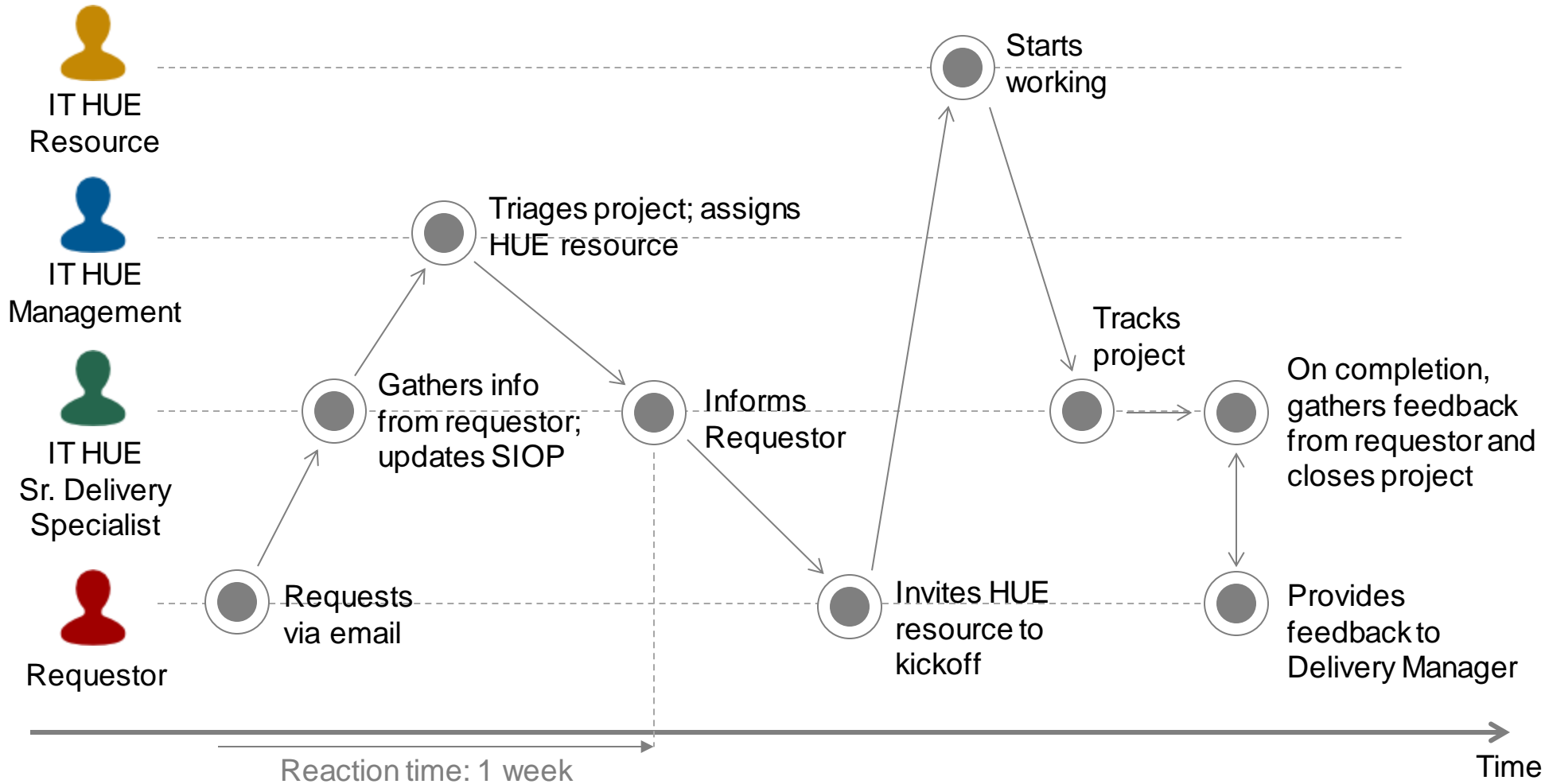David Dungey

Avinash Shrivastava

Niranjan Patil

Stuart Hancox

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# Need to engage HUE Team?

- Many of the HUE activities can be carried out by non-HUE professionals
- The following HUE activities require deeper expertise:
  - Planning (scope, resources, timeline)
  - Concept Design
  - Usability testing
  - Prototyping (wireframes, click-through mockups, DLS-compliant comps)

Does offering have touchpoints to users?

Yes → HUE is required

No → No HUE required

Availability of professionals in project team who can:
- Plan HUE
- Concept Design
- Prototype
- Usability Test

No → Engage IT HUE Team

and/or

Engage 3rd Party HUE Vendor

HUE team can assist in selection and supervision

Yes → No HUE team engagement required

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# IT HUE Engagement Process

**Contacts**

# Quiz

VOCs can be a part of which 2 two NPD phases?

- A. Ideation
- ★ B. Needs
- C. Concept
- D. Definition
- E. Deployment
- ★ F. Validation
- G. Launch

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# Feedback

- Have your expectations been satisfied?

- What did you like?

- What can we do better?

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# The End

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