

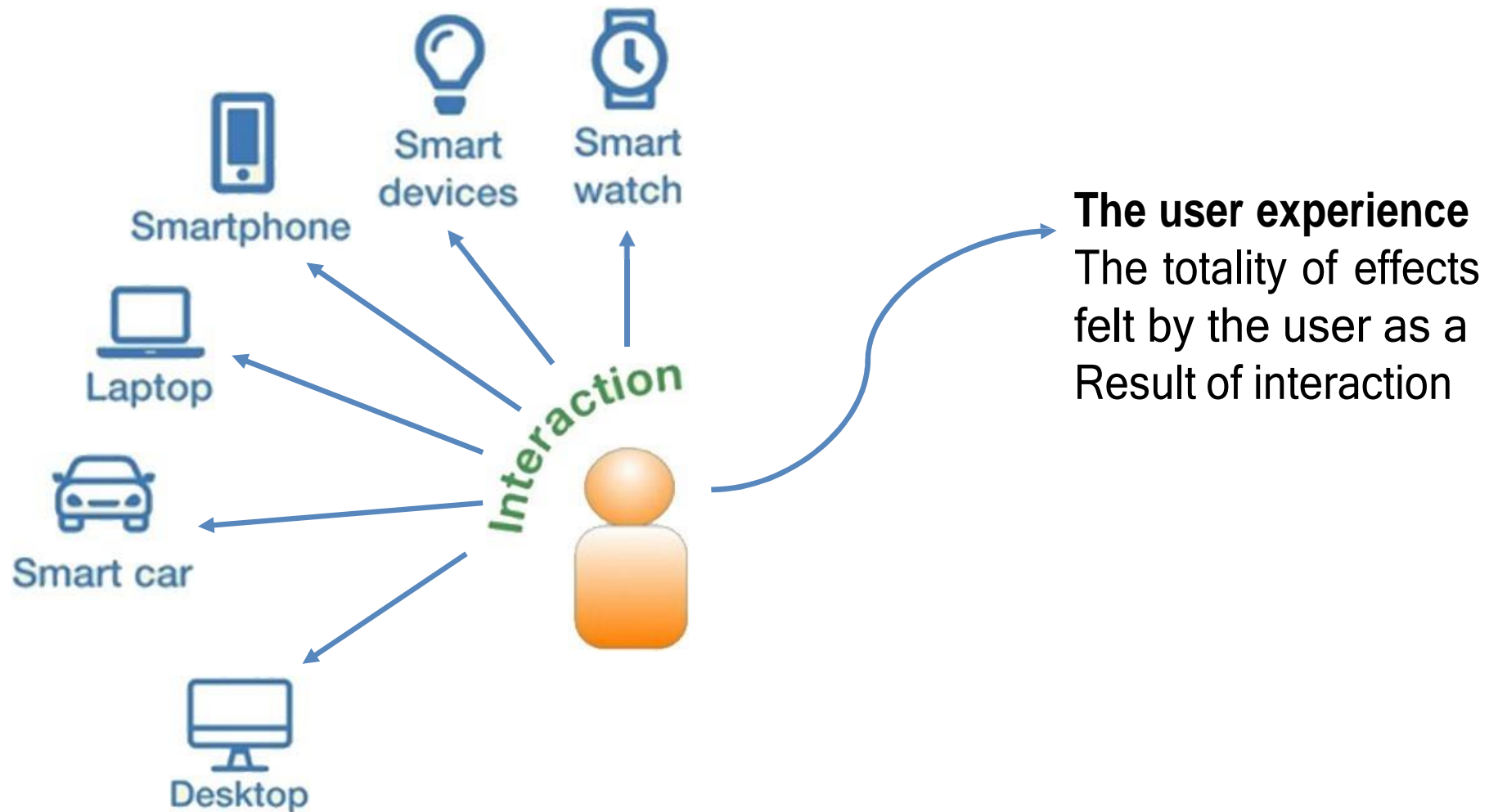
AGILE DEVELOPMENT AND UI/UX DESIGN

SUBJECT CODE: 3171610

UNIT - 3

UX AND UX DESIGN

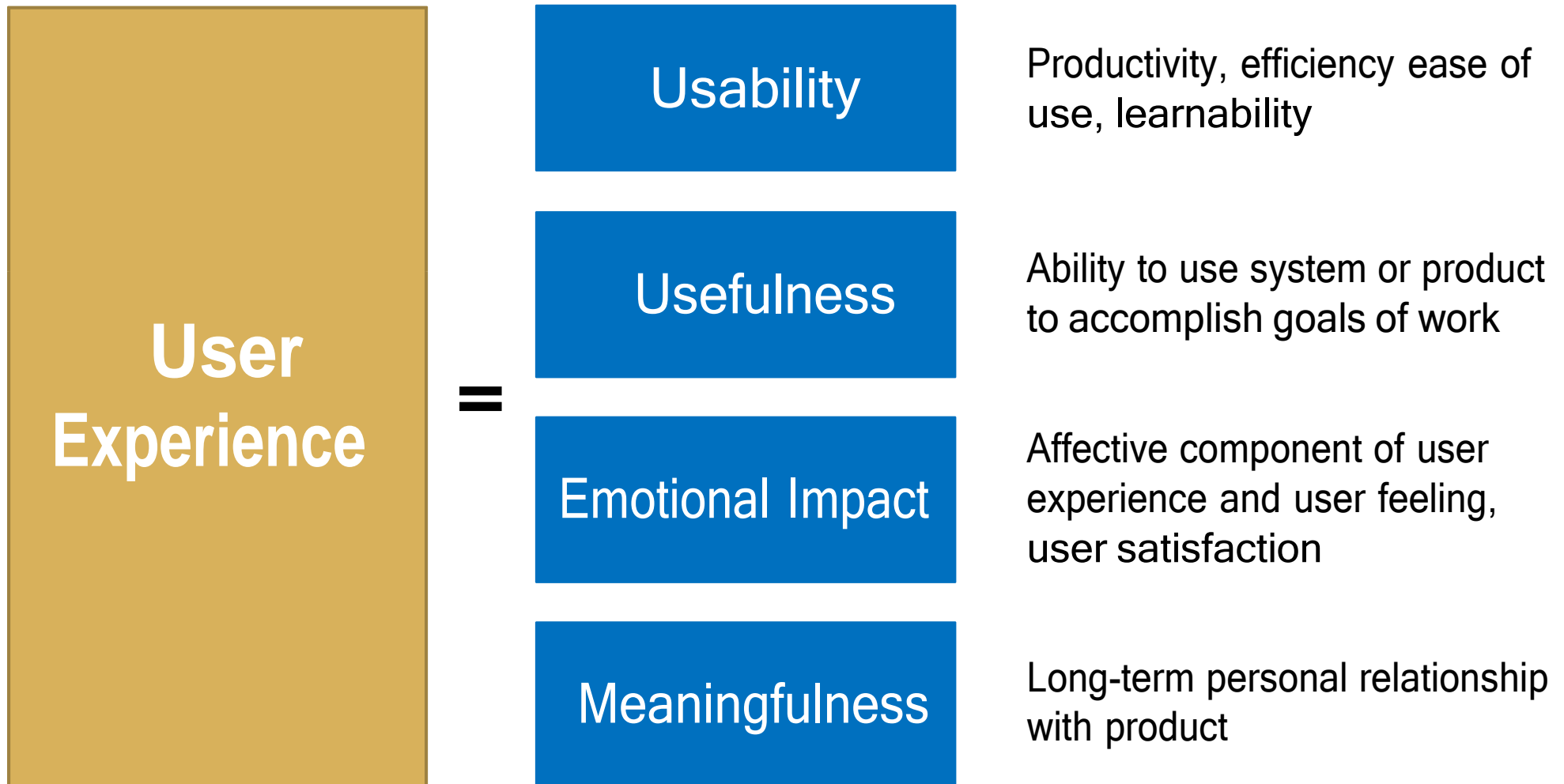
Expanding concept of Interaction



What Is User Experience?

- “experience is a very dynamic, complex, and subjective phenomenon” depending heavily on context of the associated activity.
- User experience is the totality of the effects felt by the user before, during, and after interaction with a product or system in an ecology.
- As UX designers, is to design that interaction to create a user experience that is productive, fulfilling, satisfying, and even joyful.

The Components of UX



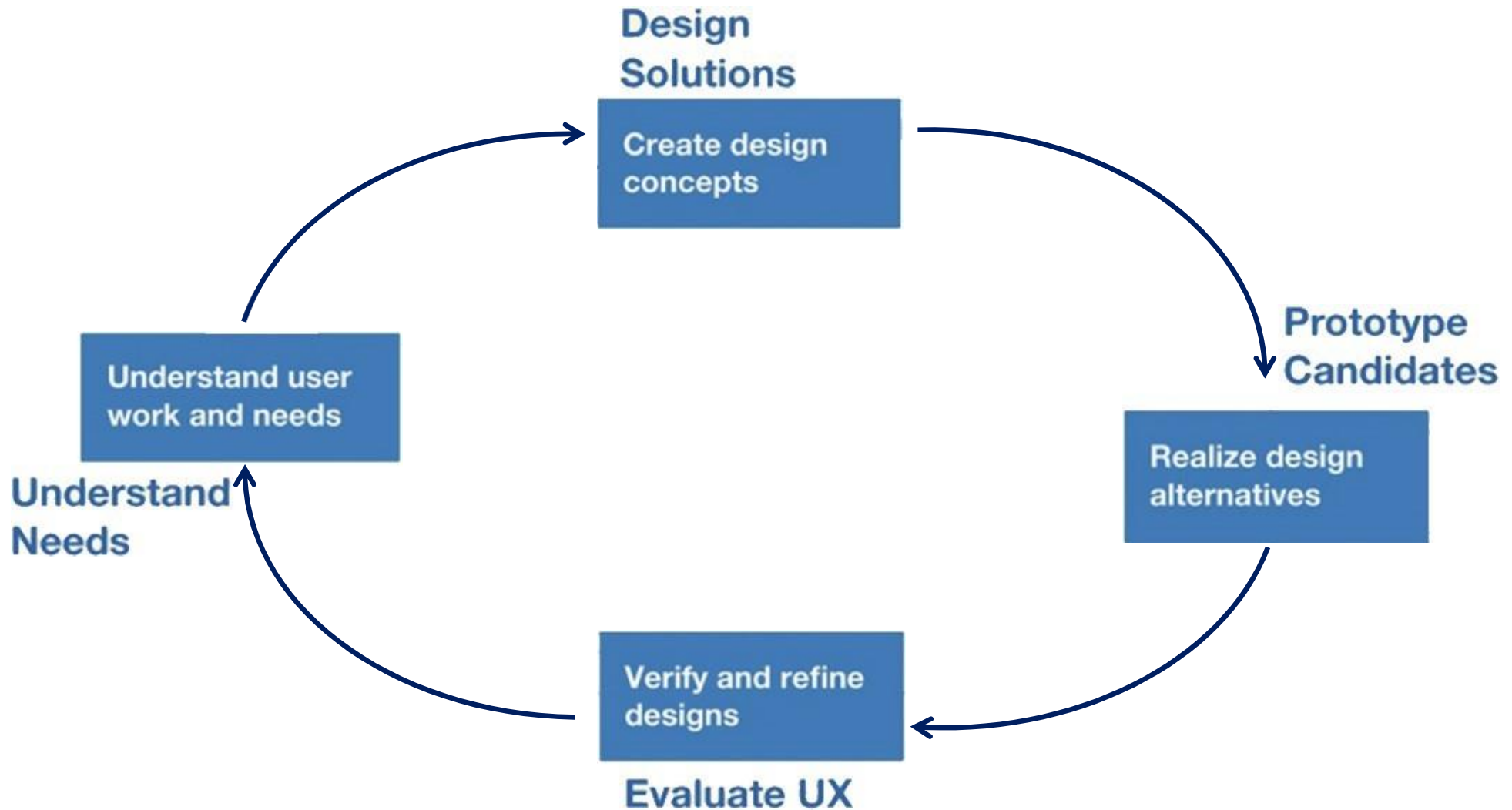
What Do You Get by Having a Process?

- Process is a guiding structure.
- Process offers reliability and consistency.
- Process provides scaffolding for learning.
- Process provides a shared conception of what you are doing.

Lifecycle

- ❑ is a structured framework consisting of a series of stages and corresponding that characterize the course of evolution of, in this context, the full evolution of an interaction design or a complete system or product
- ❑ UX Lifecycle Activities
 - ❑ Understand Needs (of users).
 - ❑ Design Solutions.
 - ❑ Prototype Candidates (for promising designs).
 - ❑ Evaluate UX

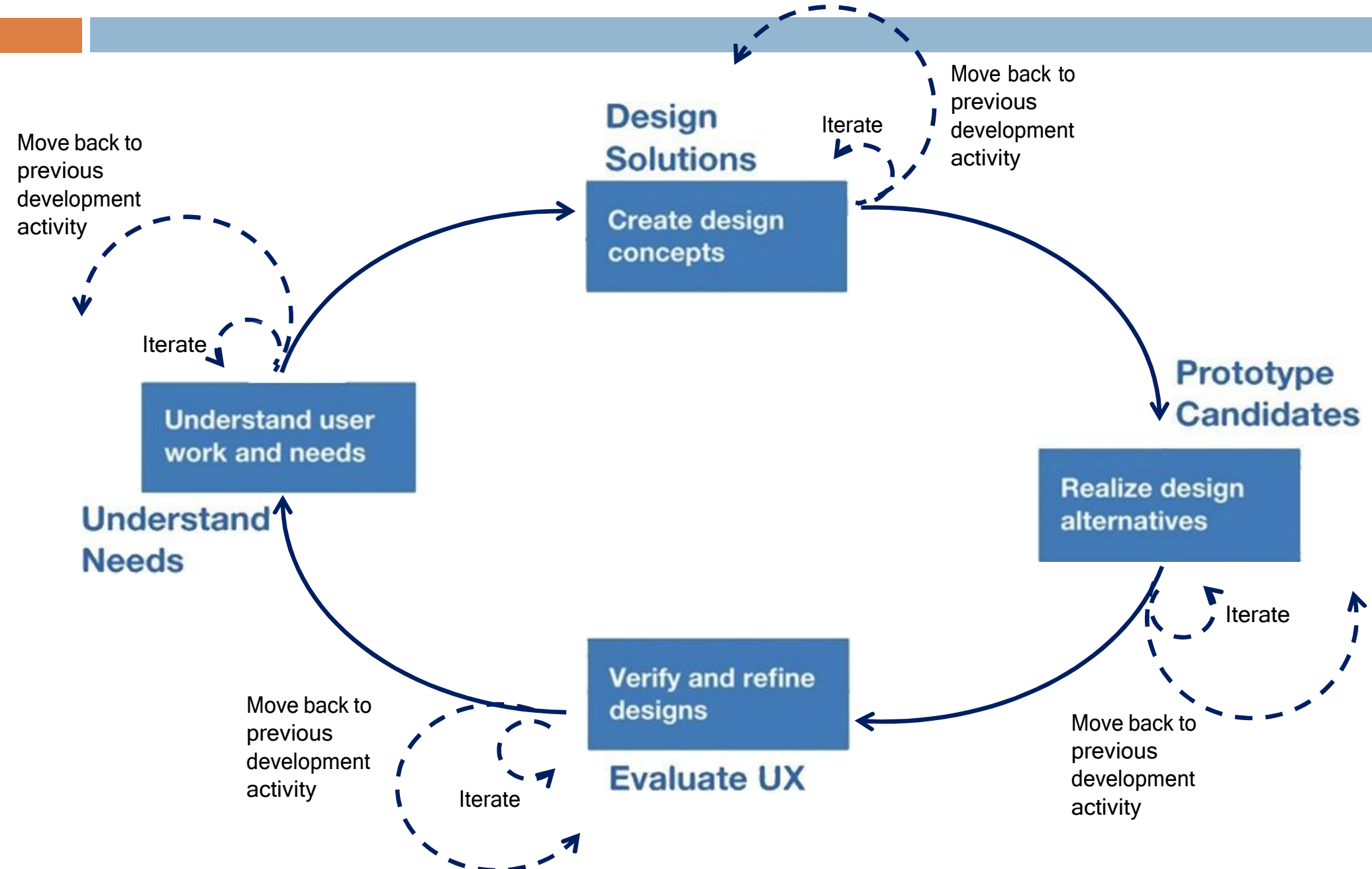
UX Design Lifecycle Process



The Wheel: A Model of the UX Lifecycle

- Expand this abstract cycle a bit to include feedback and iteration, we get a kind of UX lifecycle template of figure, which, as an analogy, we call “**the Wheel**”. This is because it goes around in circles, and with each rotation it brings you closer to your destination.
- This basic picture is the blueprint for the process common to almost any kind of design; it applies whether the design scope is just a small piece (chunk) of a product/system or the whole system.

The Wheel: A Model of the UX Lifecycle



Lifecycle Sub activities & UX Techniques

- Lifecycle sub activities are the things you do during a single lifecycle activity.
 - Data elicitation.
 - Data analysis.
 - Data modeling.
 - Requirements extraction
- UX technique is a specific detailed practice you can use to perform a step within an activity, sub activity, or method.
 - User interviews.
 - Observation of users at work

The fundamental UX Lifecycle Activities

- In this topic, we look more in depth at the individual UX design lifecycle activities and sub activities
- The four basic UX lifecycle activities:
 - **Understand Needs**, to understand users, work practice, usage, the subject-matter domain, and, ultimately, needs for the design.
 - **Design Solutions**, to create designs as solutions.
 - **Prototype Candidates** (of promising solutions) to realize and envision promising design candidates.
 - **Evaluate UX**, to verify and refine designs with respect to the user experience they afford.

The Understand Needs

- The Understand Needs lifecycle activity is used to understand the business domain, users, work practice, usage, and the overall subject-matter domain. The most popular method is some variation of usage research and the most rigorous version includes these sub activities
 - **Data elicitation** : Interview and observe users at work and gather data about work practice, users, usage, and needs.
 - **Data analysis**: Distill and organize usage research data.

The Understand Needs

- **Data modeling:** Create representations of user characteristics, information flow, tasks, and work environments (for collaboration, sharing, archival, rehearsal, immersion).
- **Requirements extraction:** Codify needs and requirements and sub activities,

The Understand Needs

Life cycle activity

Understand needs

Method

Usage Research

Sub-activities

Elicit Usage information

Method

Observe and interview
users

Technique

Manual note-taking



The Design Solutions

- Design Solutions is perhaps the most important lifecycle activity and the one with the broadest purview. Typical sub activities of this activity change dramatically over time as the project and the product evolve and mature through these basic “stages”
 - **Generative design**: Ideation and sketching to create design ideas ,low-fidelity prototyping , and critiquing for design exploration.

The Design Solutions

- **Conceptual design:** Creating mental models, system models, storyboards, low fidelity prototypes of conceptual design candidates.
- **Intermediate design:** Developing ecological, interaction, emotional design plans for most promising candidates (Chapters 16, 17, and 18), creating illustrated scenarios, wireframes, medium fidelity mockups of design forerunners, and identifying design tradeoffs to compare design candidates.
- **Design production:** Specifying detailed design plans for implementation of the emerging design choice

The Design Solutions

Design Creation

Ideation and Sketching, innovation, low-fidelity prototyping



Matching user mental model to system model

Conceptual Design



Intermediate Design

Information architecture, screen layout, navigation, medium-fidelity prototyping



Design Production

Detail design, Visual comps, style guides, annotated wireframe prototyping

The Prototype Candidates

- Prototyping is a full-fledged lifecycle activity to realize and envision promising design candidates. The main sub activity is to create representations of design to required fidelity in the form of:
 - Paper prototypes.
 - Wireframes and wireflows.
 - Click-through wireframe prototypes.
 - Physical prototypes.

The Evaluate

- This activity is about verifying and refining the UX design to ensure we are getting the design right. Subactivities and possible alternative methods for the Evaluate UX activity to assess, verify, and refine designs might include:
 - **Collect evaluation data:** Evaluate designs with empirical or analytic methods to simulate or understand actual usage and produce evaluation data.
 - **Analyze evaluation data** (for identifying critical incidents, root causes).
 - **Propose redesign solutions.**
 - **Report results.**

UX Design Techniques as Life Skills

- **Observation:** Observation is the practice of witnessing an ongoing activity with the objective of understanding underlying phenomenon
- **Abstraction:** Abstraction is the practice of removing detail irrelevant to a given objective.
- **Note Taking:** Note taking is the practice of efficiently capturing descriptions of observations
- **Data/Idea Organization:** Data organization is the practice of sorting data by category to make raw data understandable

UX Design Techniques as Life Skills

- **Modeling:** Modeling is the practice of representing complex and abstract phenomenon along particular dimensions to simplify and aid understanding.
- **Storytelling:** Storytelling is the practice of using narrative to explain aspects of a phenomenon or design with the objective of immersing the audience in the phenomenon.
- **Immersion:** Immersion is a form of deep thought and analysis of the problem at hand-to “live” within the context of a problem and to make connections among the different aspects of it

UX Design Techniques as Life Skills

- **Brainstorming:** Brainstorming is the practice of interactive group discussion for exploring different ideas, problems, and solutions
- **Sketching and Drawing:** Sketching in UX is the practice of drawing simple pictures and diagrams depicting the essence of problems and solutions.
- **Framing and Reframing:** Framing and reframing comprise the practice of posing a problem within a particular perspective.

UX Design Techniques as Life Skills

- **Reasoning and Deduction:** Reasoning and deduction is a long-standing practice of applying logic to process observed facts, fit them together, and arrive at a logical conclusion.
- **Prototyping and Envisioning:** Prototyping is the practice of producing or building a model or mockup of a design that can be manipulated and used at some level to manifest or simulate a user experience, which can be evaluated.

UX Design Techniques as Life Skills

- **Critical Thinking:** Critical thinking is the practice of “objective analysis of facts to form a judgment. The subject is complex, and there are several different definitions which generally include the rational, skeptical, unbiased analysis or evaluation of factual evidence.”
- **Iteration:** Iteration is the practice of repeating a cycle of analysis, design, prototyping, and evaluation to refine an understanding of a concept or to improve a design as a problem solution.

Methods, and Techniques

- Whenever you need to design for a lifecycle activity, you will have a set of methods and techniques to choose from.
- For example, suppose you need to choose a method to carry out the *Understand Needs lifecycle activity*. As an example, one of the most popular of such methods is called *usage research*, a method for interviewing and observing real users to understand their work activity

Methods, and Techniques

- Early method and technique choices constrain later ones. Earlier choices of methods and techniques can constrain later choices by suggesting, eliminating, or dictating appropriate methods and techniques for subsequent choices.
- For example, methods and techniques used for data analysis in a given situation will depend on what kind of data you have, and how the data were collected

Rigor in a UX Method or Process

- What Is Rigor?
 - The rigor of a UX design lifecycle activity, method, or technique is determined by the degree of formality, thoroughness, precision, and accuracy with which you perform all the steps.
 - It is also about how meticulously you maintain and document completeness and purity of data-especially usage research and UX evaluation data-collected.

Rigor in a UX Method or Process

- **Completeness.** Completeness entails thoroughness of methods, which means covering every step in full. Completeness also applies to the usage research and evaluation data. This attention to detail helps designers touch all the bases and fill in all the blanks so that no functions or features are forgotten.
- **Purity.** Purity means being as accurate as possible in your data; in particular, it involves not allowing new spurious “data” to creep in. For example, for high data purity, designer insights or conjectures should be tagged with metadata, identifying and distinguishing them from actual user input

Complexity as an Influence on the Need for Rigor

□ Interaction complexity

- is about the intricacy or elaborateness of user actions, including the difficulty of cognitive actions, necessary to accomplish tasks with the system
- Low interaction complexity usually corresponds to systems that support smaller tasks that are generally easy to do, such as ordering flowers from a website.
- High interaction complexity is usually associated with larger and more difficult tasks, often requiring special skills or training, such as manipulating a color image with Adobe Photoshop

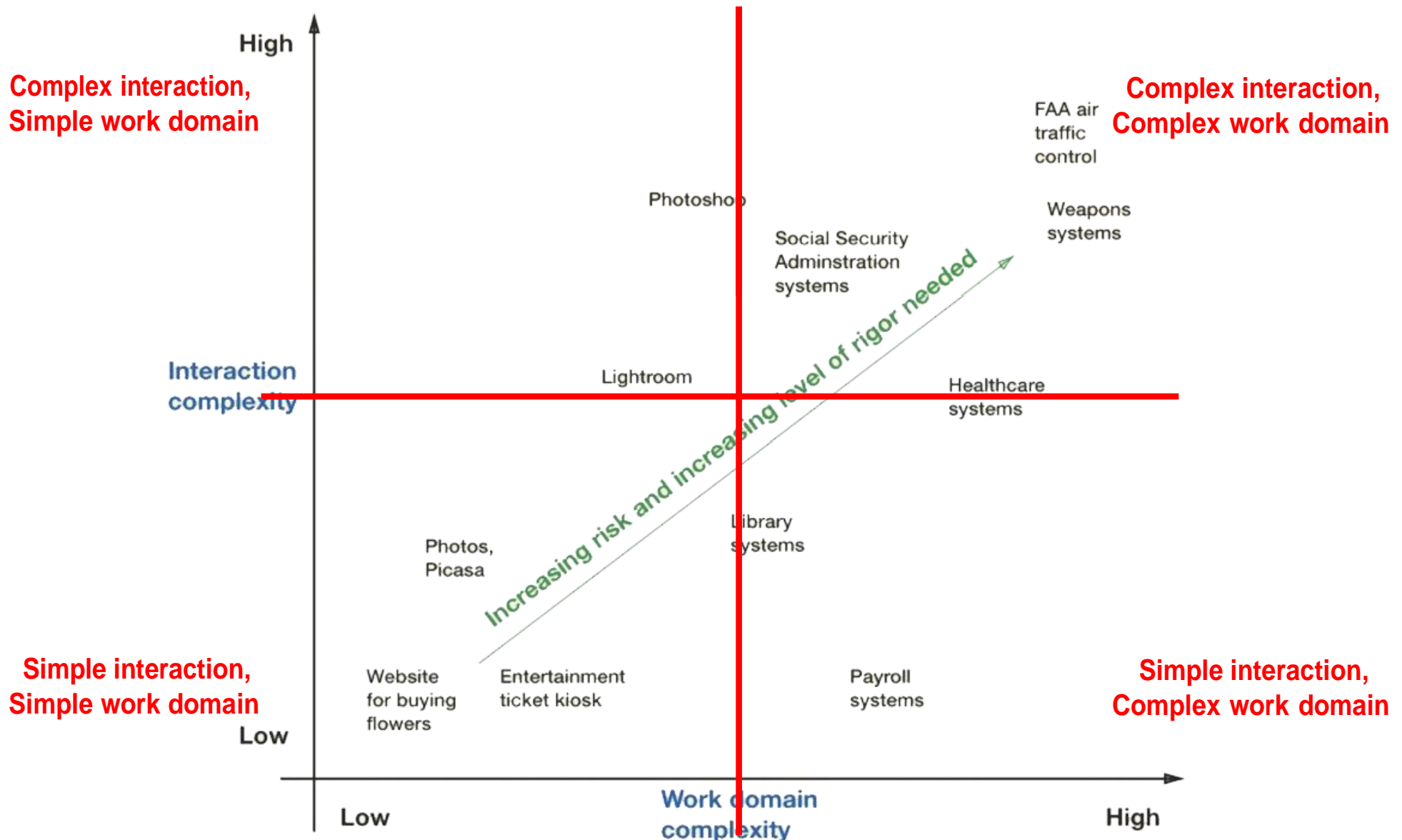
Complexity as an Influence on the Need for Rigor

- Domain complexity
 - which is about the degree of intricacy and the technical, or possibly esoteric, nature of the corresponding field of work. Convolved and elaborate mechanisms for how parts of the system work and communicate within the ecology of the system contribute to domain complexity.
 - Low work-domain complexity means that the way the system works within its ecology is relatively simple.

Complexity as an Influence on the Need for Rigor

- User work in domain-complex systems is often mediated and collaborative, with numerous “hand offs” in a complicated workflow containing multiple dependencies and communication channels, along with compliance rules, regulations, and exceptions in the way work cases are handled.
- Examples of high work-domain complexity include systems for geological fault analysis for earthquake prediction, global weather forecasting, and complete healthcare systems.

Complexity as an Influence on the Need for Rigor



Scope of Delivery

- Our use of the term “scope” refers to how the target system or product is “chunked” in each iteration or sprint for delivery for agile implementation.
 - In a large scope, chunks are composed of multiple features or even large portions of the system.
 - In a small scope, synonymous with agility, chunks are usually comprised of one feature at a time.

Scope of Delivery

- Large scope: Design the whole house first and build it all before delivering it to the client including Electrification, Plumbing, Interior walls.
- Small scope: Design one room (for example, the kitchen) first, build it, and deliver it to the client, and follow up with another room, say the living room, and so on, in a series of “increments” until the whole house is completed.

Challenges in Building Systems

- Change Happens During a Project
 - Evolution of project requirements and parameters
 - Requirements (statement of system needs).
 - Product concept, vision.
 - System architecture.
 - Design ideas.
 - Available technology
 - External changes
 - Technology available at the time.
 - Client's directions and focus (possibly due to shifting organizational goals or market factors)

Challenges in Building Systems

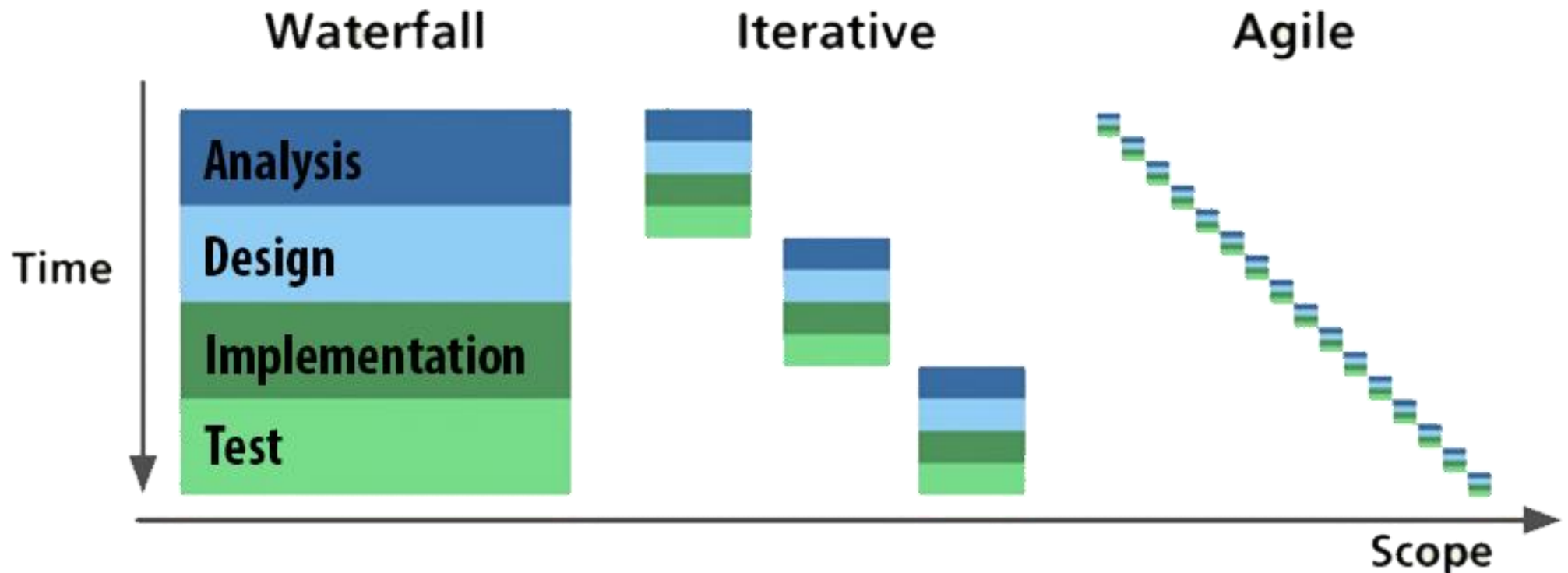
- Two Views of These Changes
 - Reality
 - Designer's understanding of these changes
- The Gap Between Views
- Responding to Change
- Closing the Gap
- True Usage is the Only Ascertainer of Requirements

Challenges in Building Systems

- Communicating Feedback About Requirements
 - Communication problems on the user's side
 - Are not necessarily knowledgeable about technology and the overall system.
 - Might have trouble formulating problems in their own minds (e.g., inability to abstract from problem instance details).
 - Might lack the ability to articulate feedback about requirements.
 - Might give feedback based on what they think they want.
 - Have biases about certain aspects of the system.

Embracing an Agile Lifecycle Process

- An agile lifecycle process (UX or SE) is small-scope approach in which all lifecycle activities are performed for one feature of the product or system and then the lifecycle is repeated for the next feature.



The Funnel Model of Agile UX

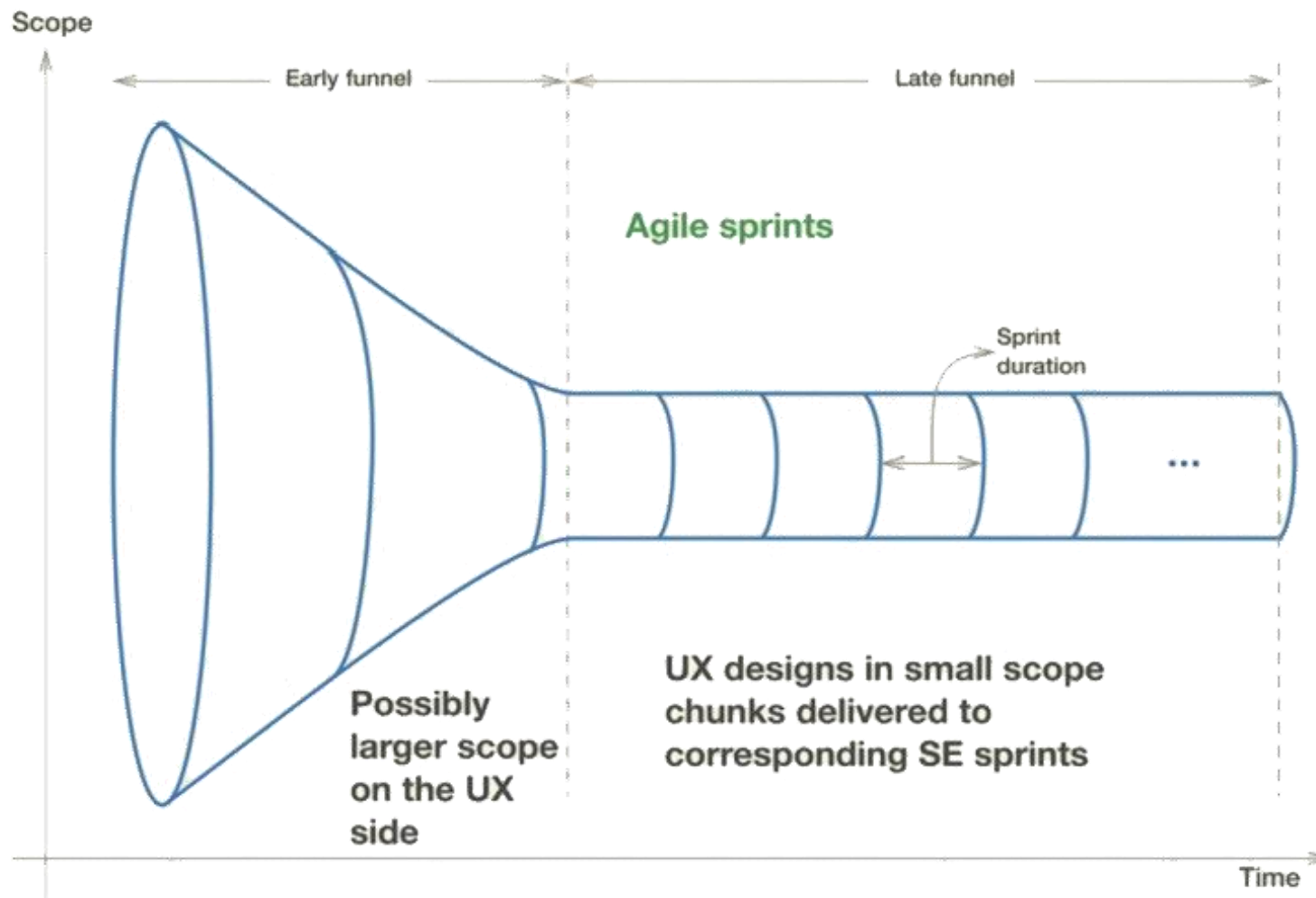
- The funnel model of agile UX, a way of envisioning UX design activities before syncing with agile SE sprints (*for overall conceptual design in the early funnel*) and after syncing with SE (*for individual feature design in the late funnel*).
- **Why a New Model Was Needed?**
 - Being agile was interpreted as going fast.
 - Following agile SE flow in sprints suffers from a fundamental mismatch with UX concerns.

The Funnel Model of Agile UX

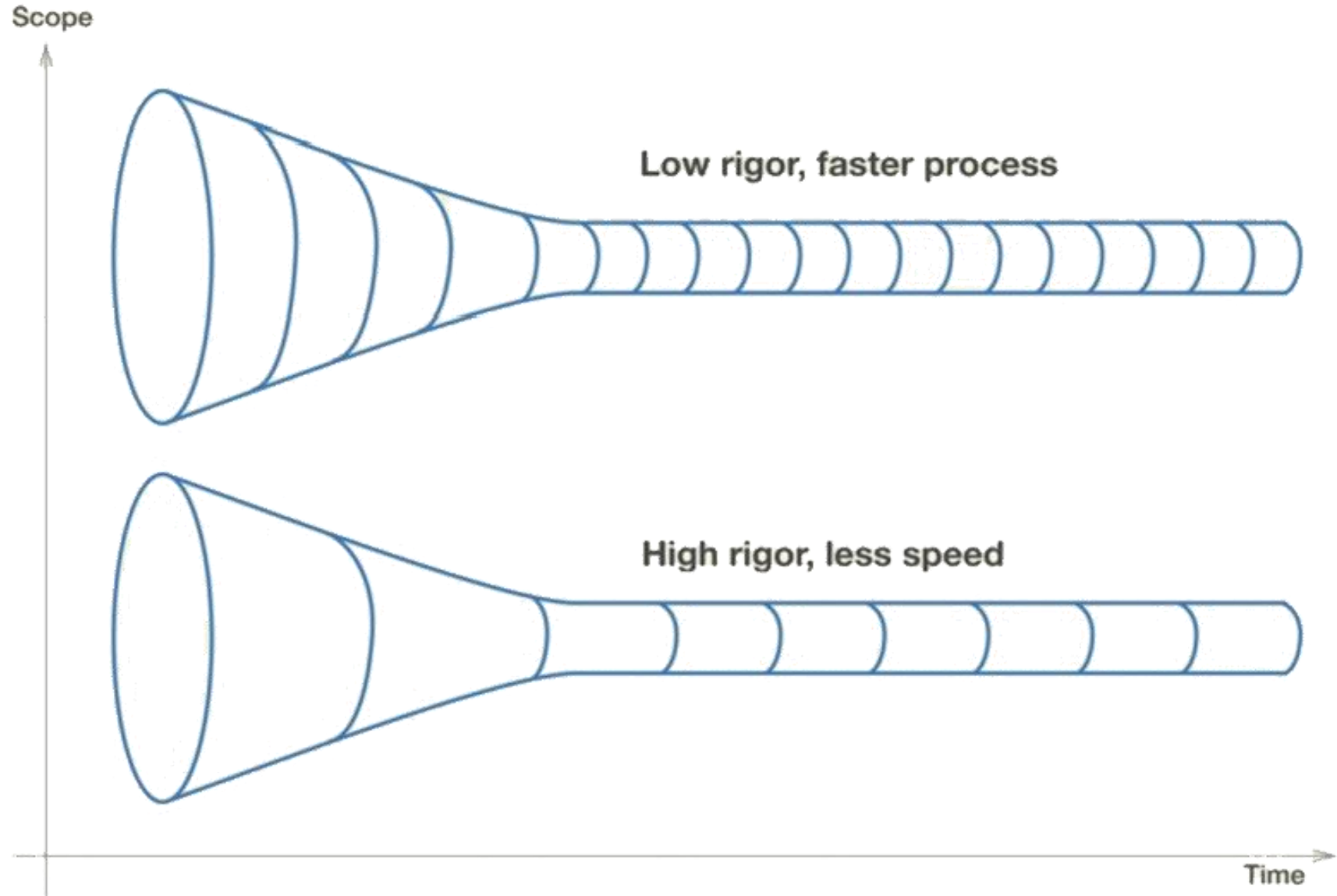
- Speed kills: Rapidness and agility are not the same
- The single biggest problem: UX was expected to follow the agile SE flow completely

The Funnel Model of Agile UX

□ Introducing the Funnel Model of Agile UX

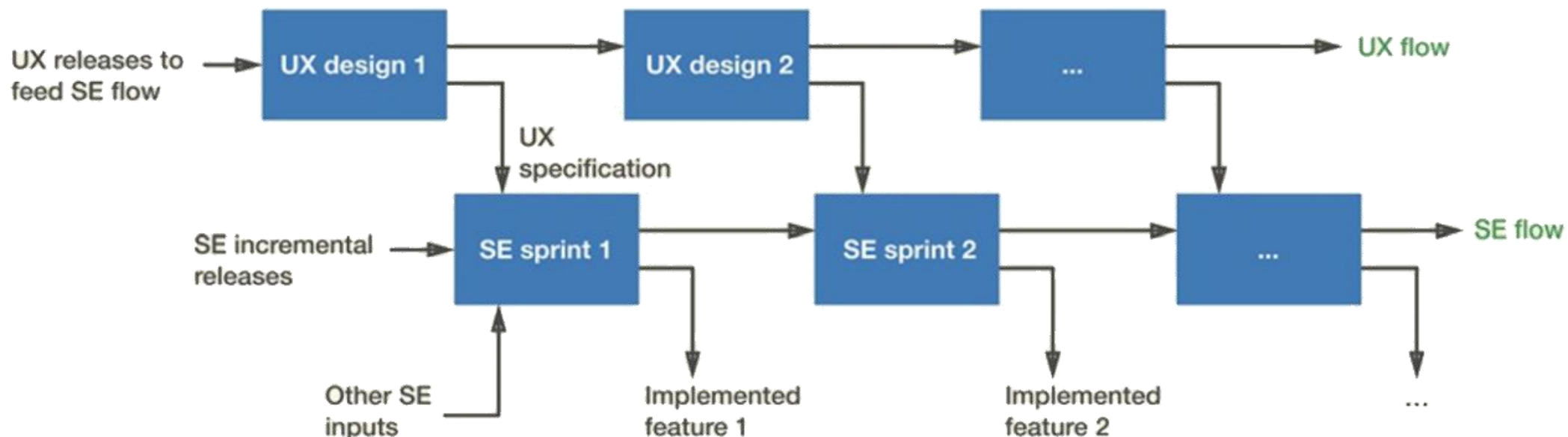


The Funnel Model of Agile UX

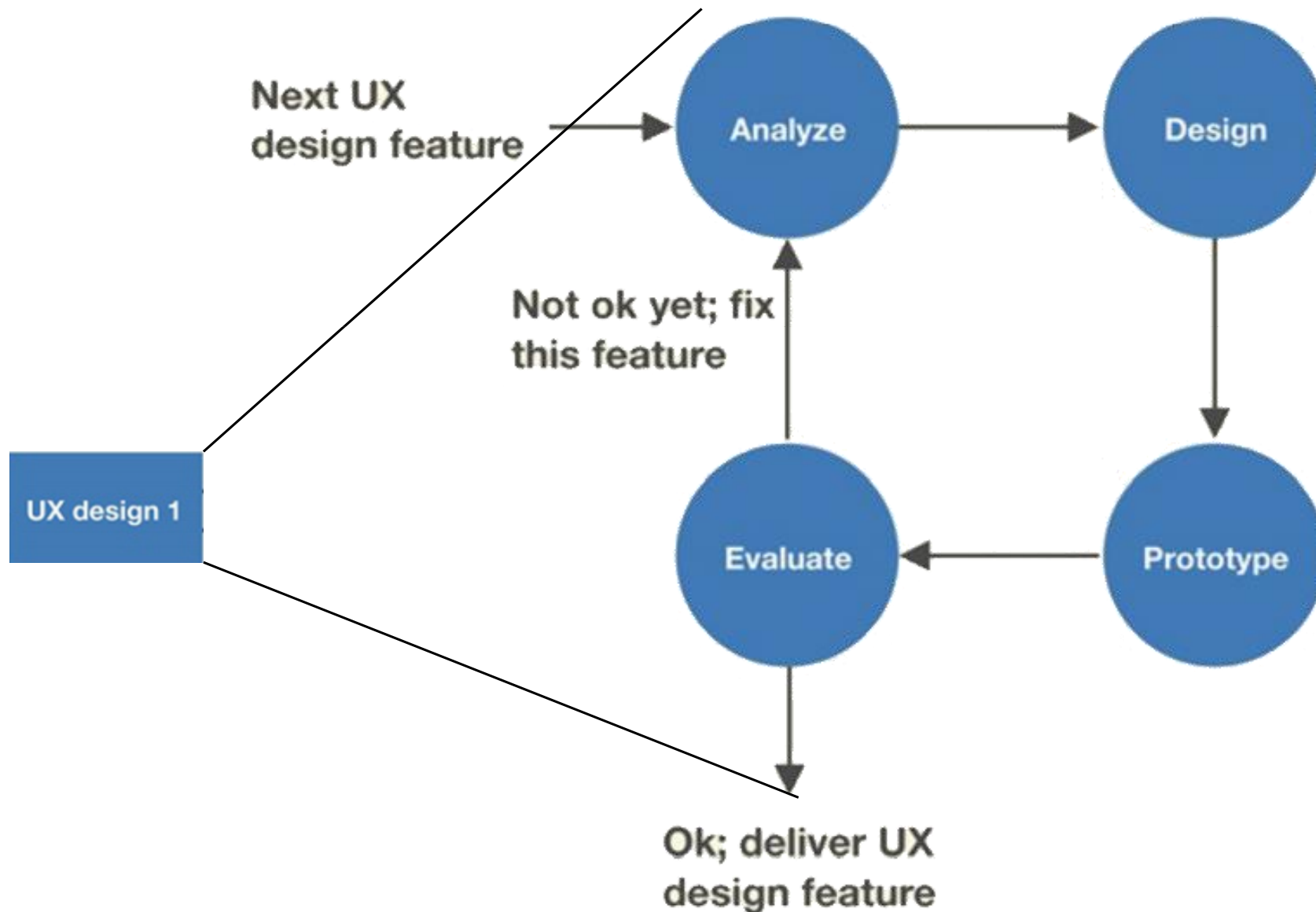


Syncing agile UX with agile SE sprints

- The UX team provides a design chunk, which the SE team implements along with its design of the corresponding functionality in a sequence of sprints. Once agile SE gets into the rhythm of going through sprints to produce implementations of chunk as features, the idea of agile UX is to sync with agile SE by providing UX design for each feature in turn,



Mini agile UX lifecycle process within a sprint.





Do you have any
QUESTIONS?