UX Design

Prof. Jincy Kuriakose, Dept. of IT, GEC Idukki
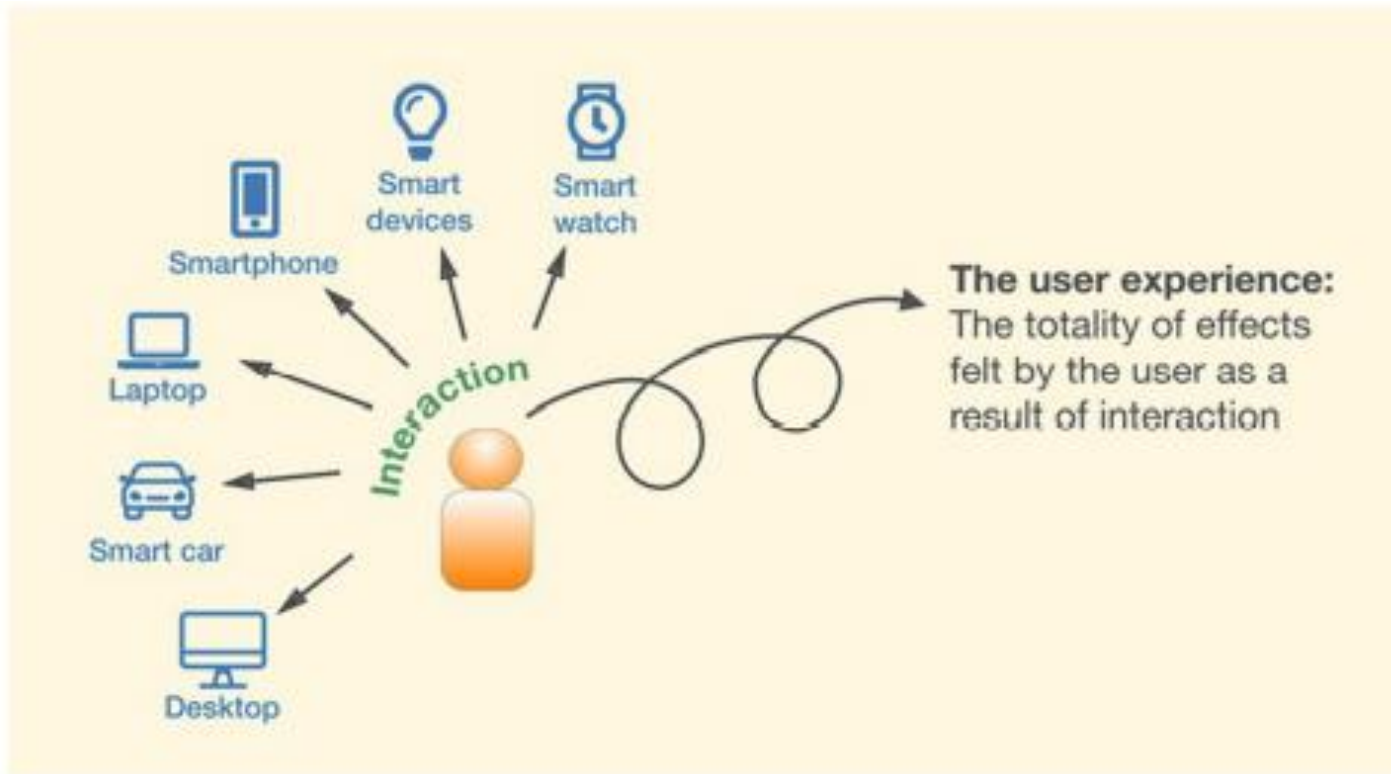
Definition of UX

- 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

- Job of UX designers is to design that interaction to create a user experience that is productive, fulfilling, satisfying, and even joyful.

- Key characteristics of a user experience reflected in the definition above are:
    1. It is a result of interaction, whether direct or indirect.
    2. It is about the totality of the effects.
    3. It is felt internally by a user.
    4. It includes usage context and ecology

Interaction, direct or indirect

- Interaction between a human and a designed artifact can be direct (e.g., operating on a device and getting feedback) or indirect (e.g., feeling the effect of seeing and thinking about an artifact).

Totality of effects

- That totality of effects of interaction includes:
    1. The influence of usability, usefulness, and emotional impact during physical interaction.
    2. The full unfolding of effects over time

- As an example of effects felt over time, consider a potential user researching a product or system, seeing advertising and reviews, and anticipating ownership.
- Once the product is bought, the effects include product packaging and the "out of the box" experience; seeing, touching, and thinking about the product; admiring the product, using it, and retaining and savoring (or not) the pleasure of usage.
- the user experience can include the individual's feeling about the company that produced the product or system and its reputation and branding, as well as the pride of ownership and how the product has acquired meaning in the user's lifestyle

User experience is felt internally by the user

- Clearly, it is the user who has the experience. Therefore, user experiences from interaction under the same conditions can vary across individual users.

Context and ecology are crucial to user experience

- An ecology is the complete usage context including all parts of the world the user comes in contact with related to the interaction.

- The user can be part of multiple ecologies (e.g., work versus home). Within an ecology, there could be multiple specific usage contexts (e.g., stressful work conditions or pleasurable play conditions). And each such context affects the user experience

THE COMPONENTS OF UX

1. Usability.
2. Usefulness
3. Emotional impact
4. Meaningfulness.
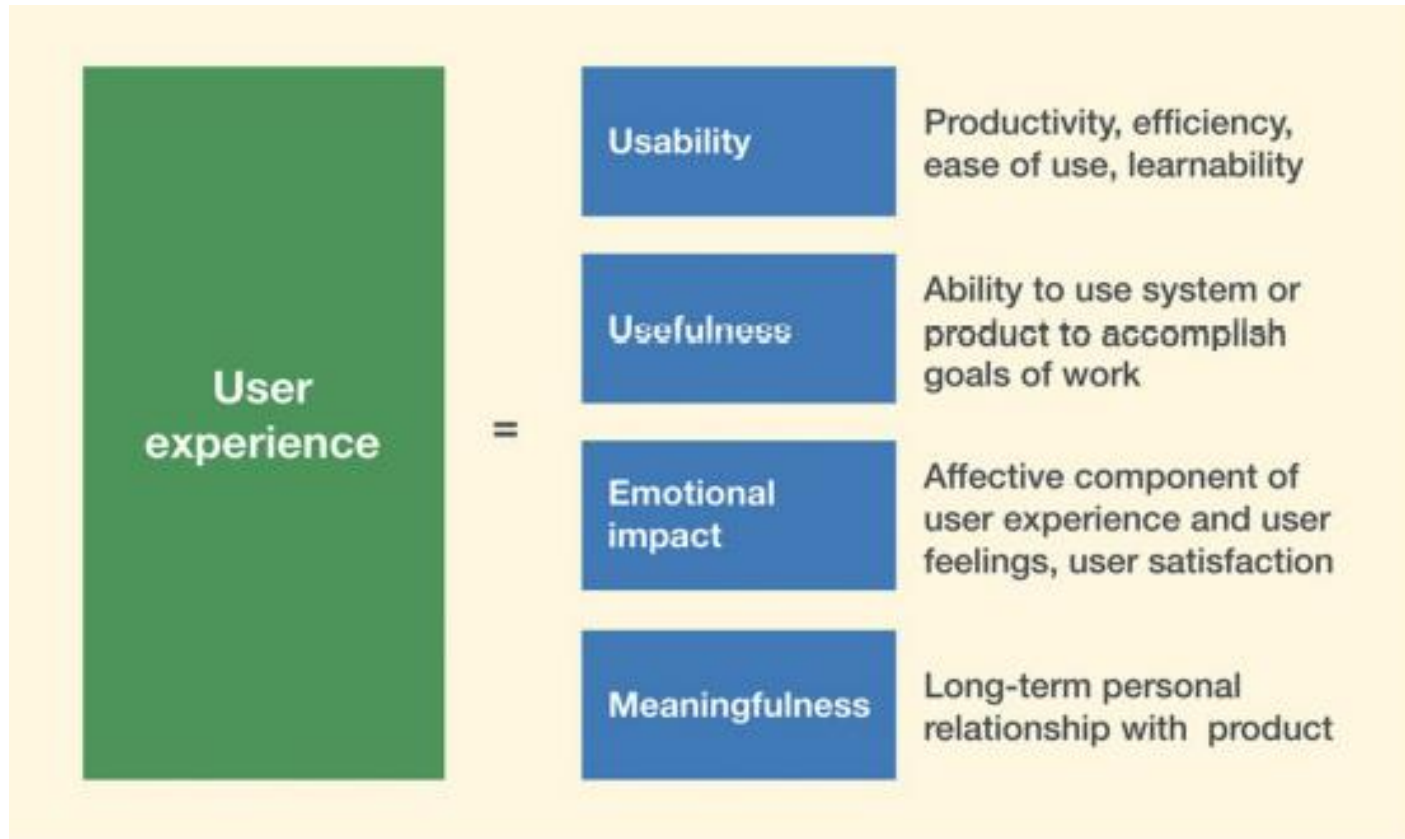
Usability

- Ease of use
- User performance and productivity
- Efficiency
- Error avoidance
- Learnability
- Retainability (ease of remembering)

- As the field has focused on more glamorous parts of the user experience, sometimes the foundational component, usability, has been forgotten.

- the so-called flat design style popular these days looks and feels visually attractive but lacks an important affordance that reveals which elements on the screen are clickable and which are not.

Usefulness

- Usefulness is utility
- Usefulness is about the power and functionality of the backend software that gives you the ability to get work (or play) done. It's the real underlying reason for a product or system

Emotional Satisfaction

- Emotional impact can be experienced in many ways, including
- how users feel emotionally about an interaction including user satisfaction.

o Joy of usage

o Pleasure

o Excitement

o Fun

o Curiosity.

o Aesthetics

o Novelty.

o Surprise

o Delight

o Play

Emotional Satisfaction

o Exploration

o Coolness

o Appeal

o A sense of identity

o Happiness

o Enthusiasm

o Enticement

o Engagement

o Pride of ownership

o Affinity, attractiveness, identifying with a product

o "Wow" in UX design.

Fig. 1-3
A beautiful mountain bike just waiting for you to ride it.

Fig. 1-4
The true mountain bike
experience.

Meaningfulness

- While usability, and often even emotional impact, is usually about a single usage occurrence, meaningfulness is about how a product or artifact becomes meaningful in the life of a user

- A personal relationship that develops and endures over time between human users and a product that has become a part of the user's lifestyle

WHAT UX IS NOT

- Not Dummy Proofing or User Friendliness
  - Usability and UX are not dummy proofing or idiot proofing
  - Users are not looking for amiability; they need an efficient, effective, safe, and maybe aesthetic and fun tool that helps them reach their goals.
- Not Just About Dressing Things Up in a Pretty Skin
  - Design is the fundamental soul of a man-made creation that ends up expressing itself in successive outer layers of the product or service –Steve
  - Kolko : "Design doesn't just make things beautiful, it makes them work"
  - UX design as a "spread-on" layer -after the product is developed, you can spread this nice thin layer of UX all over the top of it
- Not Just a Diagnostic View
  - usually at the end of the project, at which time they were expected to perform "usability testing." This led many to think of "doing usability" as equivalent to usability testing

Example: The Black & Decker Snakelight

KINDS OF INTERACTION AND UX

- Not all interaction is for a particular task between a user and a GUI for something like adding an item to a calendar

- Some interactions continue through lots of different states in time and space and through different environments.

- different kinds of interaction that we can correlate with different kinds of user experiences.

1. Localized interaction.

2. Activity-based interaction.

3. System-spanning interaction

Localized interaction

- Localized interaction is localized with respect to both time and system.

- It is simple interaction with a single "product," one device in the user's ecology surrounding the user.

- It's task-oriented, bounded, and limited, and it occurs in a very short time within one interaction environment and with one single goal

- using your laptop to check your email or using an ATM to make a withdrawal of cash.

- Therefore, design is focused on interaction.

Activity-Based Interaction

- Norman introduced activity-based design as a way to describe interactions that go beyond simple tasks.

- An activity is one or more task thread(s), a set of (or possibly sequences of) multiple, overlapping, and related tasks.

- It can involve:

1. Interaction with one device to do a set of related tasks.

2. Interaction across devices in the user's ecology.

Interaction with one device to do a set of related tasks.

- Interaction with one device to do a set of related tasks.
- searching for a compact digital camera online. You might follow links to reviews, decide on one, and put it in the "cart" and then follow links to other, similar products. You can also follow other links to accessories you might want (e.g., SD memory card, camera case, wrist strap, USB cable for downloading), and so on.
- Even though this involves multiple different tasks, users think of it as doing one activity.
- Norman describes "mobile phones that combine appointment books, diaries, and calendars, note-taking facilities, text messaging, and cameras" as devices to support communication activities.
- This one single device integrates several tasks:

System-Spanning Interaction

- Interaction across devices in the user's ecology.
- System-spanning interaction is a kind of activity-based interaction, often involving multiple parties in multiple work/play roles, multiple devices, and multiple locations

- Example: Power Lines Are Down Here is an example of a transaction with a relatively simple goal of getting electric power service restored to a user who finds the power is out in his house
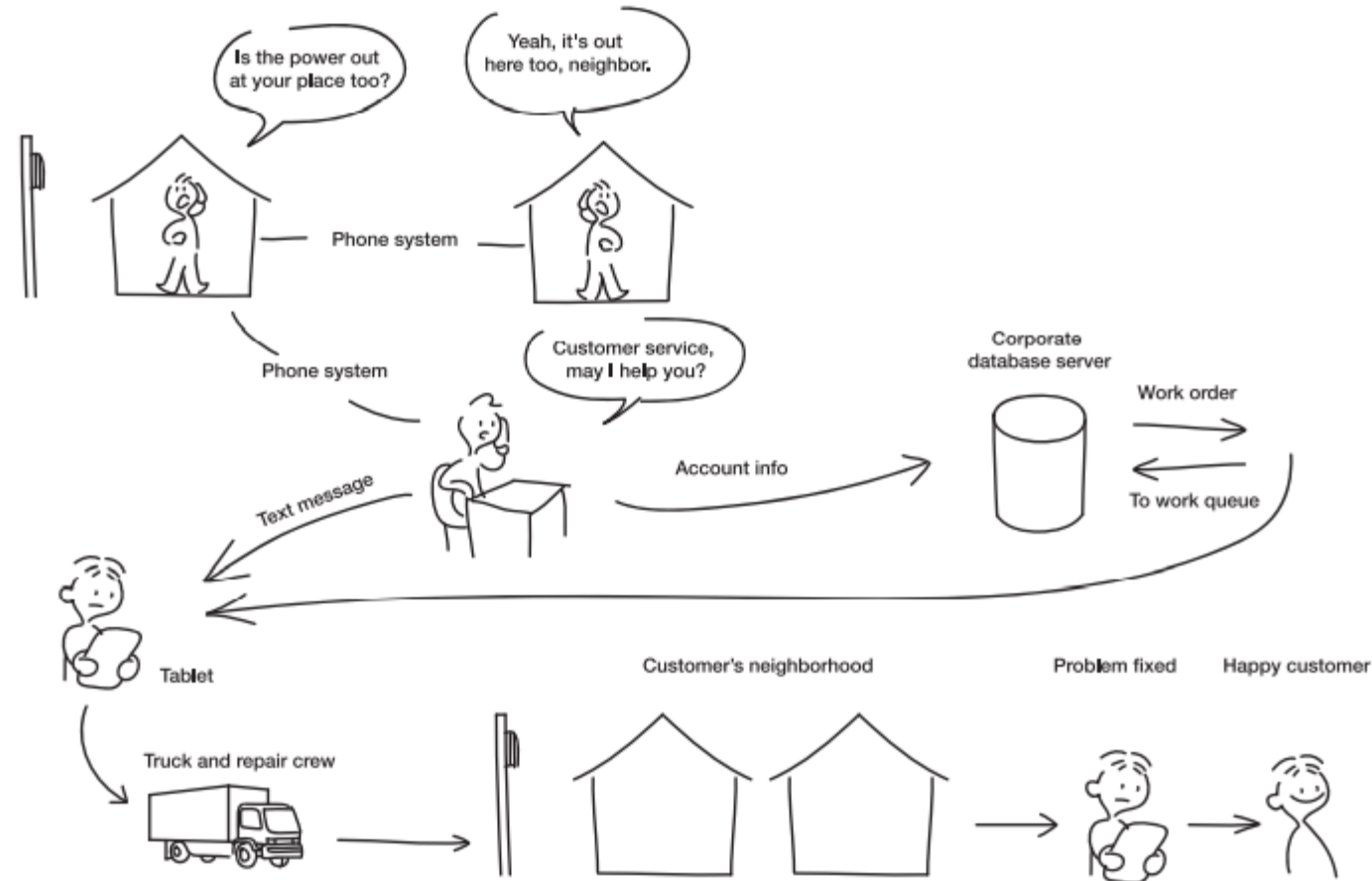

Fig. 1-6
System-spanning activity to fix downed power lines (adapted from Muller et al. (1993a)).

Prof. Jincy Kuriakose, Dept. of IT, GEC Idukki

- you can see an ecology involved in one user activity that includes the user as customer, the power company, its customer service, customer accounts, the power company's central database, a work order queue, a work order, power company field technicians, and the power lines. The ecology of this activity also includes the telephone system, the neighbor on his phone, a text message, the technician's portable tablet, the technician's crew, and a fleet of power company trucks

The Dagstuhl Framework of Interaction and UX

- Participants in the Dagstuhl seminar have modeled the kinds of UX in terms of the scope of time.

- Starting with the earliest, they feature:

1. Before usage: Anticipated UX.

2. During usage: Momentary UX, one-off encounters.

3. After usage: Episodic UX, now and then periods of usage interspersed with nonusage.

4. Over time: Cumulative UX, views of a system as a whole after having used it for a while

- These different kinds of UX, depending on time spans, overlap and confirm our definition of the totality of effects
- Anticipated UX includes feelings engendered by researching a product, reading reviews, and so on.
- Their momentary, episodic, and cumulative UX intersect in various ways with our localized, activity-based, system-spanning, and long-term interaction.
- Their cumulative UX placed importance on user opinions of systems that they use frequently, such as a laptop, desktop PC, an operating system, or a word processor.
- Our long-term interaction overlaps and extends beyond their cumulative UX.
- If the cumulative UX is positive, we call it meaningfulness

- UX design, usually represented as a prototype.
- These designs will be realized in software by developers, software engineers, and programmers, using a corresponding software engineering lifecycle

What Do You Get by Having a Process?

- Process is a guiding structure.
    - helps both novices and experts deal with the complex details of a project.
    - systematic approach
- Process offers reliability and consistency
    - offers a way to use basically the same approach from project to project and from one team member to another
- Process provides scaffolding for learning.
    - provides a fabric on which you can build a knowledge base of what you have learned, applying organizational memory from similar previous efforts to incorporate lessons learned in the past
- Process provides a shared conception of what you are doing.
    - A documented process lets everyone know how a product or system (software plus UX) is being developed.

THE BASIC PROCESS COMPONENTS FOR UX

- UX Design Lifecycle
- UX Lifecycle Activities
- UX Design Lifecycle Process
- The Wheel: A Model of the UX Lifecycle
- Lifecycle Subactivities
- UX Methods
- UX Techniques

UX Design Lifecycle

- It's a cycle of the life of a UX design, from inception to deployment and beyond.

UX Lifecycle Activities

• Lifecycle activities are the high-level things you do during a lifecycle

o Understand Needs (of users)

o Design Solutions

o Prototype Candidates (for promising designs)

o Evaluate UX

UX Design Lifecycle Process

- A UX lifecycle process is a representation of how you put the lifecycle activities together in a sequence over time and how the lifecycle activities connected in the flow of the process, usually represented in the form of a flow chart diagram
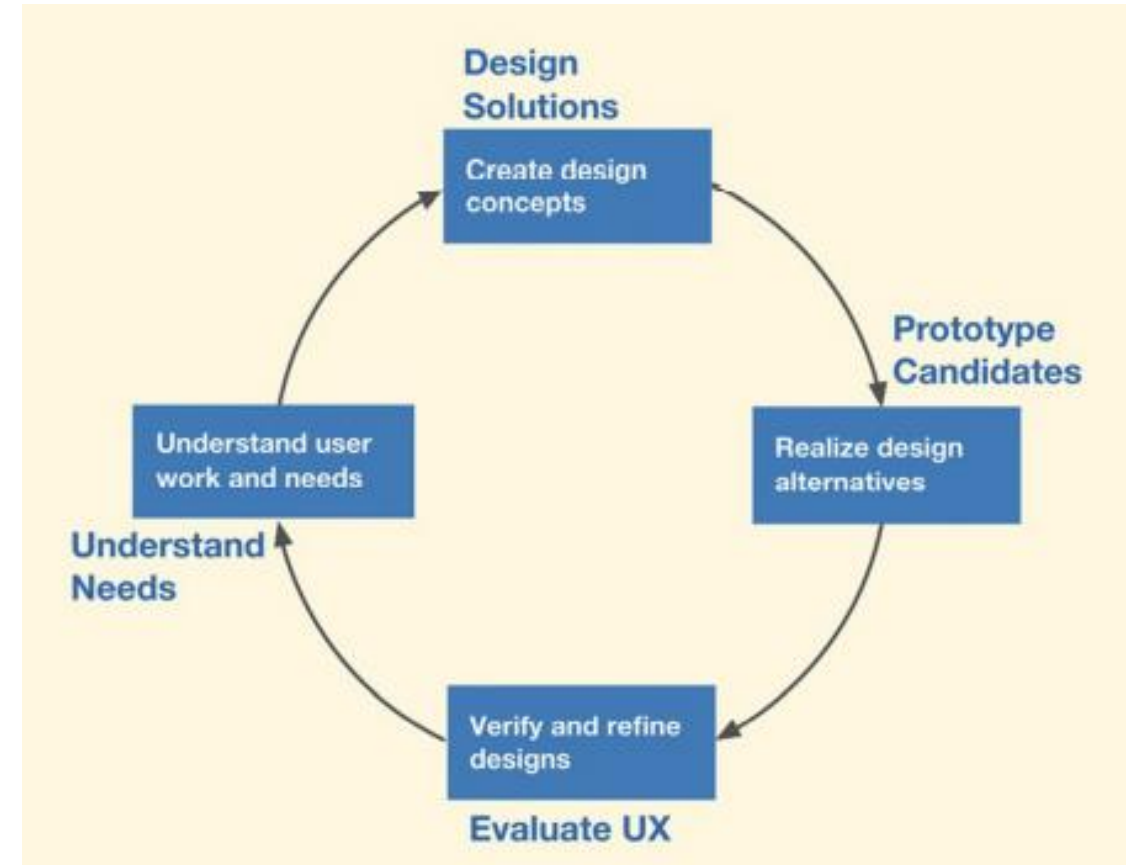
The Wheel: A Model of the UX Lifecycle

- If we expand this abstract cycle a bit to include feedback and iteration, we get a kind of UX lifecycle template, which we call "the Wheel."

- it goes around in circles, and with each rotation it brings you closer to your destination.
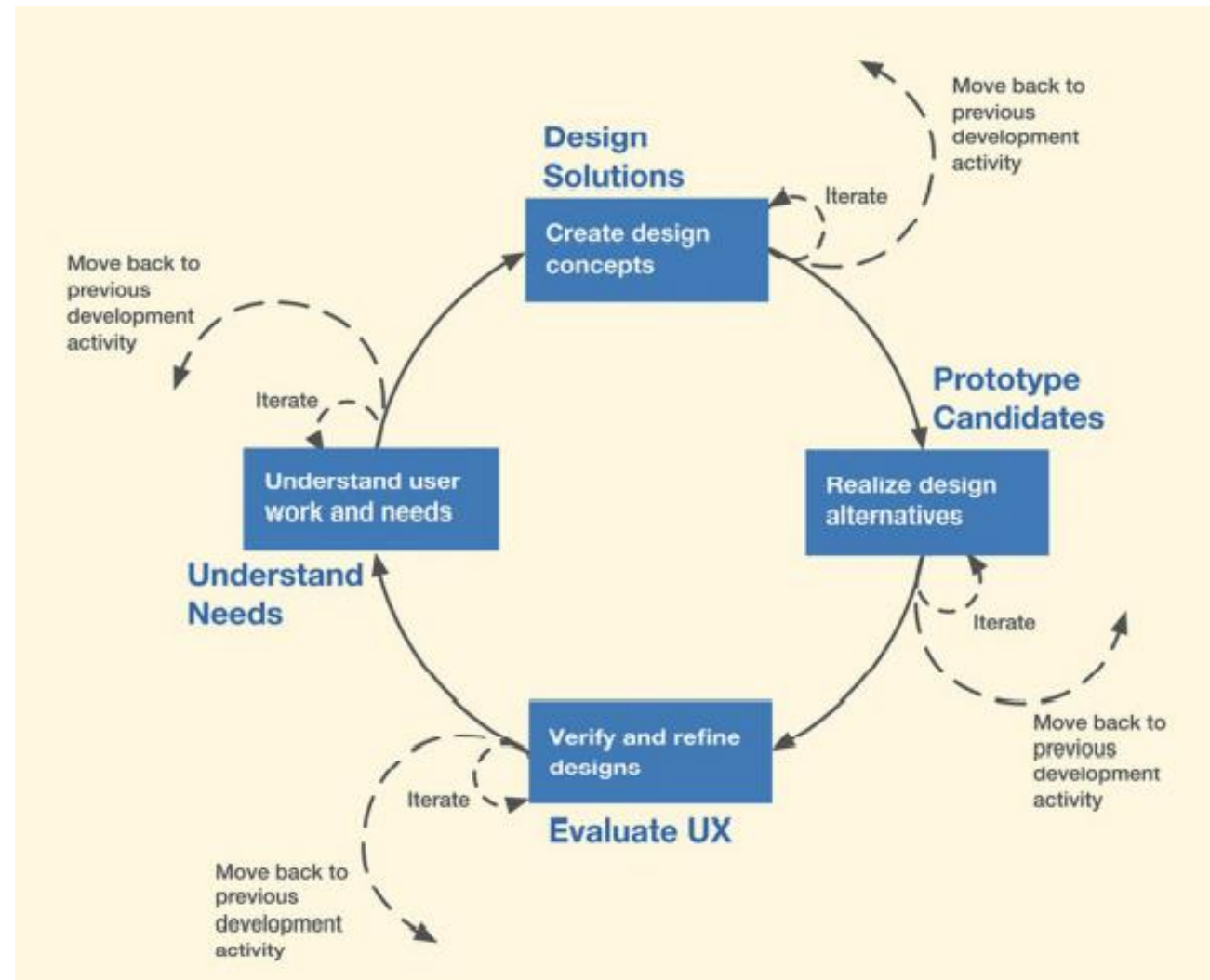
Lifecycle Subactivities

- Lifecycle subactivities are the things you do during a single lifecycle activity

- Example: subactivities for the Understand Needs lifecycle activity include

▪ Data elicitation

▪ Data analysis

▪ Data modelling

▪ Requirements extraction.

UX Methods

- a method is a way one can carry out the whole or part of a given lifecycle activity or subactivity.

- An example of a method for the Understand Needs lifecycle activity is Usage Research

UX Techniques

- a UX technique is a specific detailed practice you can use to perform a step within an activity, subactivity, or method

- Examples of UX techniques for the data elicitation activity within the usage research UX method are

▪ User interviews

▪ Observation of users at work

A Hierarchy of Terms

- Process, or UX lifecycle process.
- UX lifecycle activities and subactivities.
- UX methods.
- UX techniques

Informal hierarchy of process, methods, and techniques with simple examples

Lifecycle process	Traditional waterfall process (Section 4.2)
Lifecycle activity	Understand Needs (Part 2)
Subactivity	Elicit usage information (Chapter 7), analyze usage information (Chapter 8), model system or product usage (Chapter 9), codify needs (Chapter 10)
Method	Usage research, surveys, and competitive analyses (for elicit information subactivity); usage research analysis (for analyze information subactivity); flow, sequence, task models (for model usage subactivity); formal requirements (for codify needs subactivity)
Technique	Interviews, observations, affinity diagramming, etc.

- Waterfall life cycle - One of the earliest formal software engineering lifecycle processes; an ordered linear sequence of lifecycle activities, each of which flowed into the next like a set of cascading tiers of a waterfall.

THE FUNDAMENTAL 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 UX Lifecycle Activity

- 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

The Understand Needs UX Lifecycle Activity

- 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.

- Data modeling : Create representations of user characteristics, information flow, tasks, and work environments

- Requirements extraction: Codify needs and requirements.

- The data elicitation subactivity of the Understand Needs lifecycle activity.
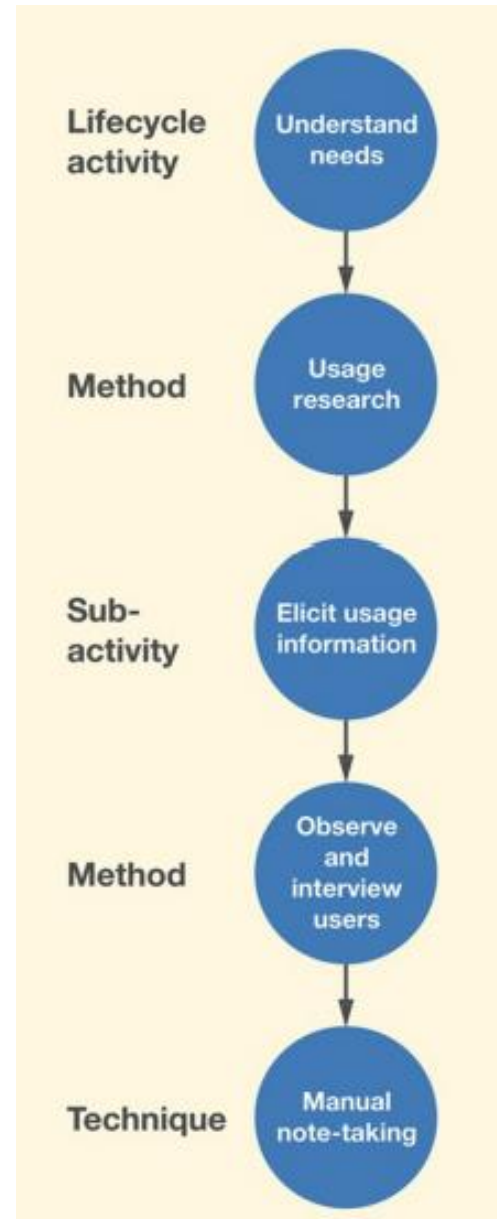
The Design Solutions UX Lifecycle Activity

- Generative design: Ideation and sketching to create design ideas , low-fidelity prototyping, and critiquing for design exploration

- 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, 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
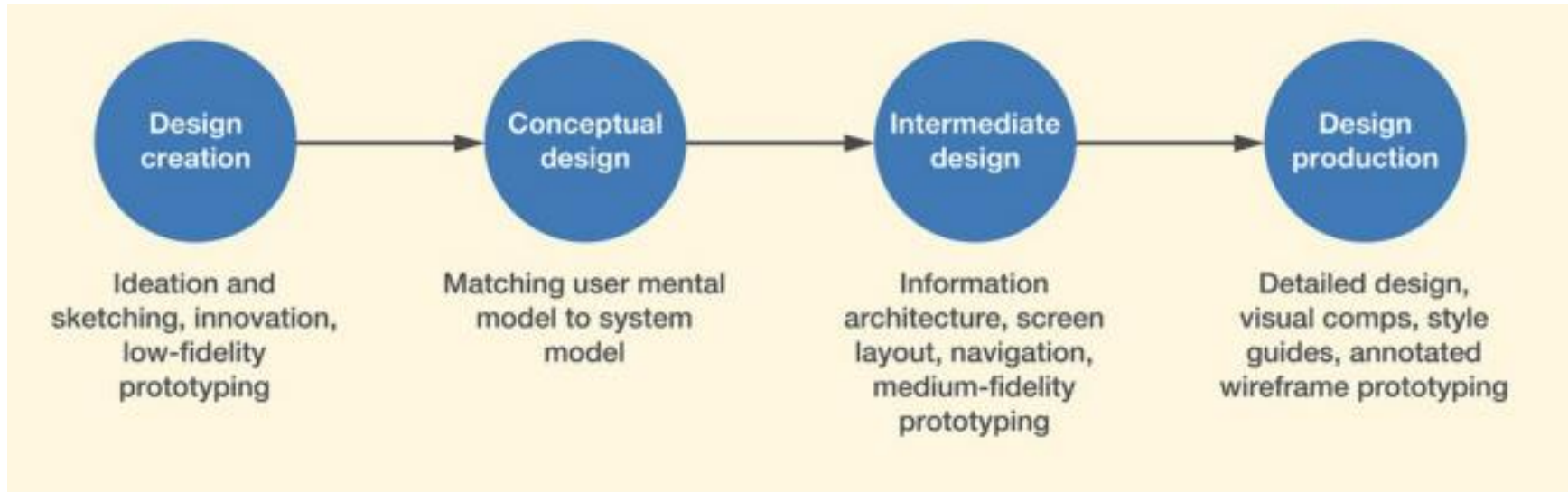
Design creation

Ideation and sketching, innovation, low-fidelity prototyping

Conceptual design

Matching user mental model to system model

Intermediate design

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

Design production

Detailed design, visual comps, style guides, annotated wireframe prototyping

Fig. 2-4
Typical Design Solutions subactivities.

The Prototype Candidates UX Lifecycle Activi

- prototyping is a full-fledged lifecycle activity to realize and envision promising design candidates.

- The main subactivity is to create representations of design to required fidelity in the form of:
    - Paper prototypes.
    - Wireframes and wireflows.
    - Click-through wireframe prototypes.
    - Physical prototypes.

- Prototypes are made at many different levels of fidelity,
  - including low fidelity (especially paper prototypes such as printouts of static wireframes, for design exploration and early design reviews),
  - medium fidelity (such as click-through wireframe prototypes), and
  - high fidelity (programmed functional prototypes), and
  - "visual comps" for pixel-perfect look and feel.

The Evaluate UX Lifecycle Activity

- 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.

- Methods abound for doing the activities and subactivities of UX evaluation. From lightweight and rapid to thorough and laborious, from full empirical studies to quick and dirty inspections, depending on the design situation

- Inspection-An analytical evaluation method in which a UX expert evaluates an interaction design by looking at it or trying it out, sometimes in the context of a set of abstracted design guidelines. Expert evaluators are both participant surrogates and observers, asking themselves questions about what would cause users problems and giving an expert opinion predicting UX problems

UX DESIGN TECHNIQUES AS LIFE SKILLS

- Observation
- Abstraction
- Note taking
- Data organization
- Modeling
- Storytelling
- Immersion

- Brainstorming
- Sketching
- Framing and Reframing
- Reasoning and Deduction
- Prototyping and Envisioning
- Critical Thinking
- Iteration

Observation

- Observation is the practice of witnessing an ongoing activity with the objective of understanding underlying phenomenon.

- Things to look for include exceptions, surprises, generalities, patterns, workflows, sequencing, what works and what doesn't, problems and barriers, and how people react to problems (or if they do).

- Observation provides the inputs for reasoning and deduction, but the ability to observe effectively can be elusive.

Abstraction

- Abstraction is the practice of removing detail irrelevant to a given objective.

- The result is a clearer picture of what is important without the distraction of extraneous matter.

- Abstraction also entails the ability to generalize from an example.

- You have to be able to comprehend and extract the essence of a particular observed incident or phenomenon as an instance of a more general case or principle

- User A: I would like to have a fan in the kitchen to clear any cooking smells.

- User B: I like to open my windows to the study and let in fresh air.

- User C: I do a lot of gluing in my workshop and need to have large windows and doors so the chemical smells don't overwhelm me.

- All these specific instances can be abstracted under a generic idea of ventilation for the house that will lead to a design that solves all the individual problems in the list

Note taking

- Note taking is the practice of efficiently capturing descriptions of observations.

- It includes a set of techniques for qualitative data collection.

- Techniques for note taking include making hand written notes, typing notes on a laptop, recording the essence on audio, or recording on video.

- To be efficient, you must apply abstraction during note taking to capture the essential points while keeping the verbiage to a minimum.

- Notes can include sketches and/or models, analogies, or any other descriptive mechanism, bringing additional techniques into the mix.

Data organization

- Data organization is the practice of sorting data by category to make raw data understandable.

- Techniques for data organization include:

▪ Card sorting.

▪ Affinity diagrams.

▪ Mind-mapping: "A mind map is a diagram used to visually organize information. A mind map is often created around a single concept, drawn as an image in the center of a blank landscape page, to which associated representations of ideas such as images, words and parts of words are added. Major ideas are connected directly to the central concept, and other ideas branch out from those."

▪ Concept mapping: "A concept map or conceptual diagram is a diagram that depicts suggested relationships between concepts. It is a graphical tool that instructional designers, engineers, technical writers, and others use to organize and structure knowledge."

Modeling

- practice of representing complex and abstract phenomenon along particular dimensions to simplify and aid understanding.

- way to explain or categorize aspects of the problem space.

- specific kind of abstraction, usually to identify and represent objects, relationships, actions, operations, variables, and dependencies.

- Modeling is a way to organize and present information for deeper understanding.

- It's a way to draw generalizations and relationships from raw data.

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.

- Storytelling is a technique often used in the field of advertising.

- It can be more compelling to tell stories of people who use a product and who get pleasure and/or utility from it in their lives, than just to list advantages of the product.

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.

- Immersion is about surrounding yourself in your UX work area with the artifacts of creative design (posters, notes, sketches, photos, diagrams, quotations, goal statements) as in a war room.

- You close yourself off from outside distractions and everything you see acts as a kind of cognitive scaffolding and a catalyst that helps spawn design ideas

Brainstorming

- Brainstorming is the practice of interactive group discussion for exploring different ideas, problems, and solutions:
- Must be done as a group activity. Each person's inputs and discussion stimulates, triggers thoughts, and inspires the others.
- Is a major skill in the Design Solutions lifecycle activity to highlight different perspectives and generate different framings of a phenomenon or a problem.
- Can be used in the Evaluate UX lifecycle activity to create solutions to identified UX problems.
- Can be used in any situation where the problem is open ended. For example, who are potential users of this system? Where can we find participants for evaluation?

Sketching

- Sketching in UX is the practice of drawing simple pictures and diagrams depicting the essence of problems and solutions.

- It is a way to externalize analysis and exploration of objects, their relationships, and an emerging understanding of the problems and solutions.

- it is not about art or aesthetics. It's about communication of ideas

- A sketch is a kind of prototype. It uses an abstract representation, highlighting the salient features to aid visualization.

Framing and reframing

- Framing and reframing comprise the practice of posing a problem within a particular perspective.

- Framing builds a perspective that structures the problem and highlights the aspects you will explore.

- A framing is a pattern or a particular theme from which we view everything as we are in the process of finding solutions.

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.

- The observations are the predicates of the logic and the conclusions are deductions.

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

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."

- Critical thinking is the essential core of UX evaluation for testing, reviewing, diagnosing, verifying, or validating a candidate design solution.

- This kind of evaluation requires skills for observation, abstraction, data collection, note taking, and reasoning and deduction, plus the ability to make judgements, rankings, and ratings.

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.

- When used in UX design or as life skills, these techniques are usually combined within methods.

- For example, a police detective must combine skills to solve crimes, including observation, note taking, storytelling, immersion, brainstorming, sketching, framing, and reasoning and deduction

CHOOSING UX PROCESSES, METHODS, AND TECHNIQUES

The UX Lifecycle Process Choice

- The UX lifecycle process choice is made at the highest level.
- The way things have worked out in the world has had a large influence on that choice.
- The software engineering (SE) world has adopted an agile lifecycle process almost universally
- an agile UX process is one in which you manage change during the process by delivering UX designs in small chunks.

- Agile Lifecycle Process A small-scope lifecycle process (UX or SE) 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.

- An agile process is driven by needs formulated as user stories of capabilities instead of abstract system requirements

- and is characterized by small and fast deliveries of releases to get early usage-based feedback

The Idea of Appropriating Methods and Technique

- **Design situations: Dependencies that govern lifecycle activity, method, and technique choices**

- describe a design situation as the circumstances under which a design method will be applied and appropriated

- "Design situation" includes the target product or system and the project and all of its context, including the type of product or system, the client, the users, the market, the subject-matter domain and its complexity plus the designer's familiarity with it, and the project team and their capabilities, skills, and experience.

Choosing 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.

Mapping project parameters to lifecycle activity, method, and technique choices

Prof. Jincy Kuriakose, Dept. of IT, GEC Idukki
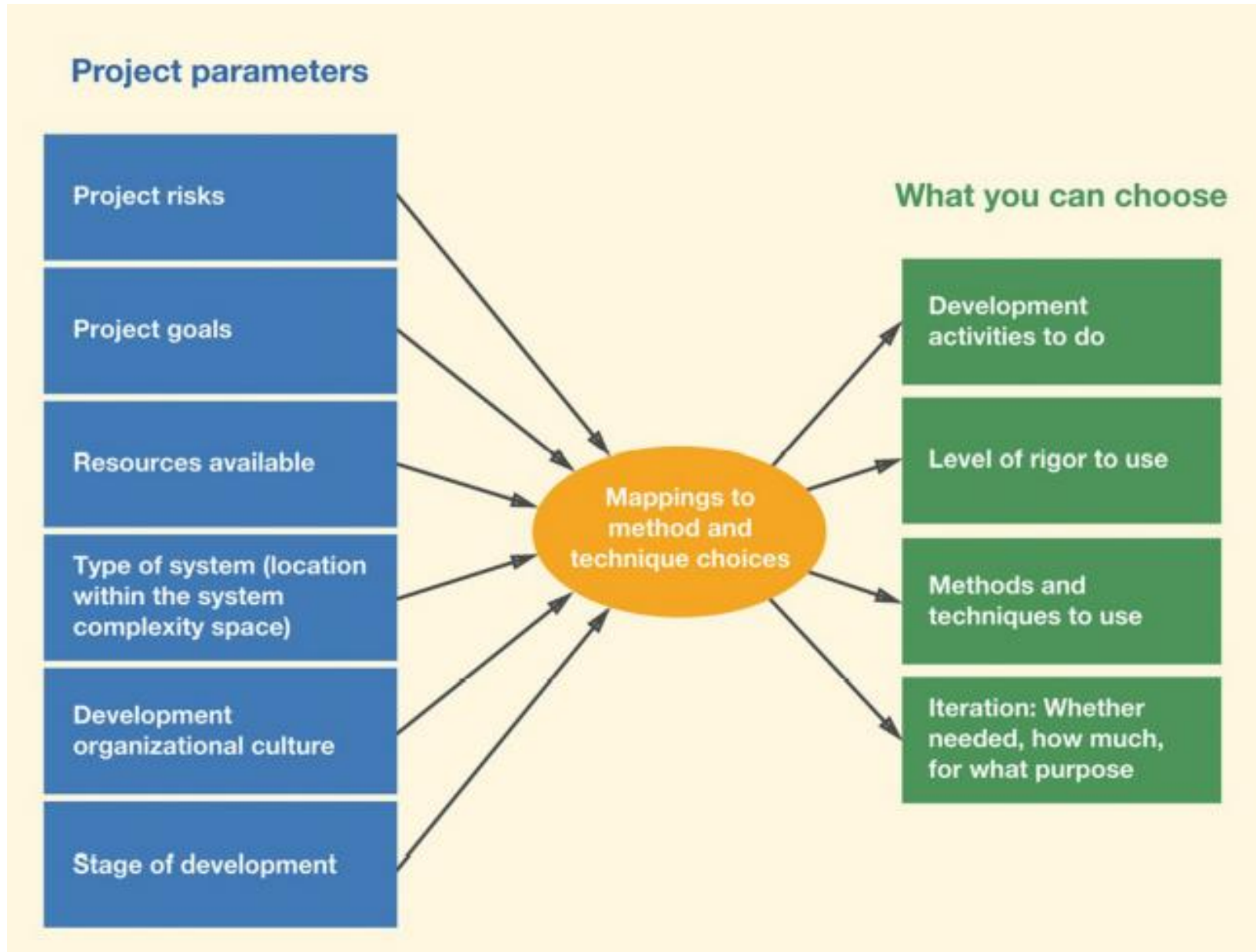
6D UX PROCESS

6D Process

- It is a structured set of activities that the designer needs to follow during the process of design.

- The Steps in the 6D process help identify user needs, their expectations and their pain points and thereby come up with solutions that fit their needs.

- These facts helps us create a product which gives the best experience to the user.

- The 6D model is distributed in three major spaces -

- 1- Design Strategy Space

- 2- Design solution space

- 3- Design delivery space

- **<u>Design Strategy Space</u>**

- The design strategy space dwells into the strategy of the digital product and helps to determine the **what, how and why of the product.**

- The design strategy phase helps in d**efining the exact problem** for which the digital product and strategy may be the solution.

- The design strategy helps **to define the usefulness and effectiveness, the constraints** that the design strategy may have like technology and business and the end goal that the product aims to achieve.

- **Design Solution Space**

- The design solution space aims to promote the strategy decided in the earlier phase through defining the exact solution that will work for the design problem

- **Design Delivery Space**

- The design delivery space helps in implementing the design solution through visual design.

- The design delivery takes into consideration the different technology platforms the solutions needs to be created on, the different resolution and screen sizes for the digital product.

Discover

- Discover the design problem and the scope of the digital product that needs to be solved through design.
- To incorporate business goals and technology constraints in the design problem.
- **Includes-**
- Blueprint Analysis
- Stakeholder Interview
- Metric Analysis
- User Research
- Competitive Analysis

Define

- Define the design problem using mental models.
- Define the context of the user.
- **Includes-**
- User Profile
- User Persona
- User Need
- User Scenario
- Task Analysis
- Story Board

Dream

- Create design differentiators that can be used as a user retention strategy.
- Enable solutions like gamification and features that create return users
- **Includes-**
- Ideation Workshops
- Customer Journey Map
- Design Thinking

Design

- Create the interaction design of the digital product
- Create efficiencies in the digital processes
- Create usefulness, effectiveness and learnability of the digital product
- Digital product to have characteristics of simplicity and remember the ability
- **Includes-**
- Prototype
- Information Architecture
- Wireframes

Develop

- Create visual designs that are clear, concise and consistent.
- Each call to action, content and screens of the digital product to be user-friendly and legible.
- **Includes-**
- Sketches
- Content Mapping
- Visual Design

Deliver

- Create design documentation for the engineers and product managers to code the digital product
- **Includes-**
- Design Delivery Tools
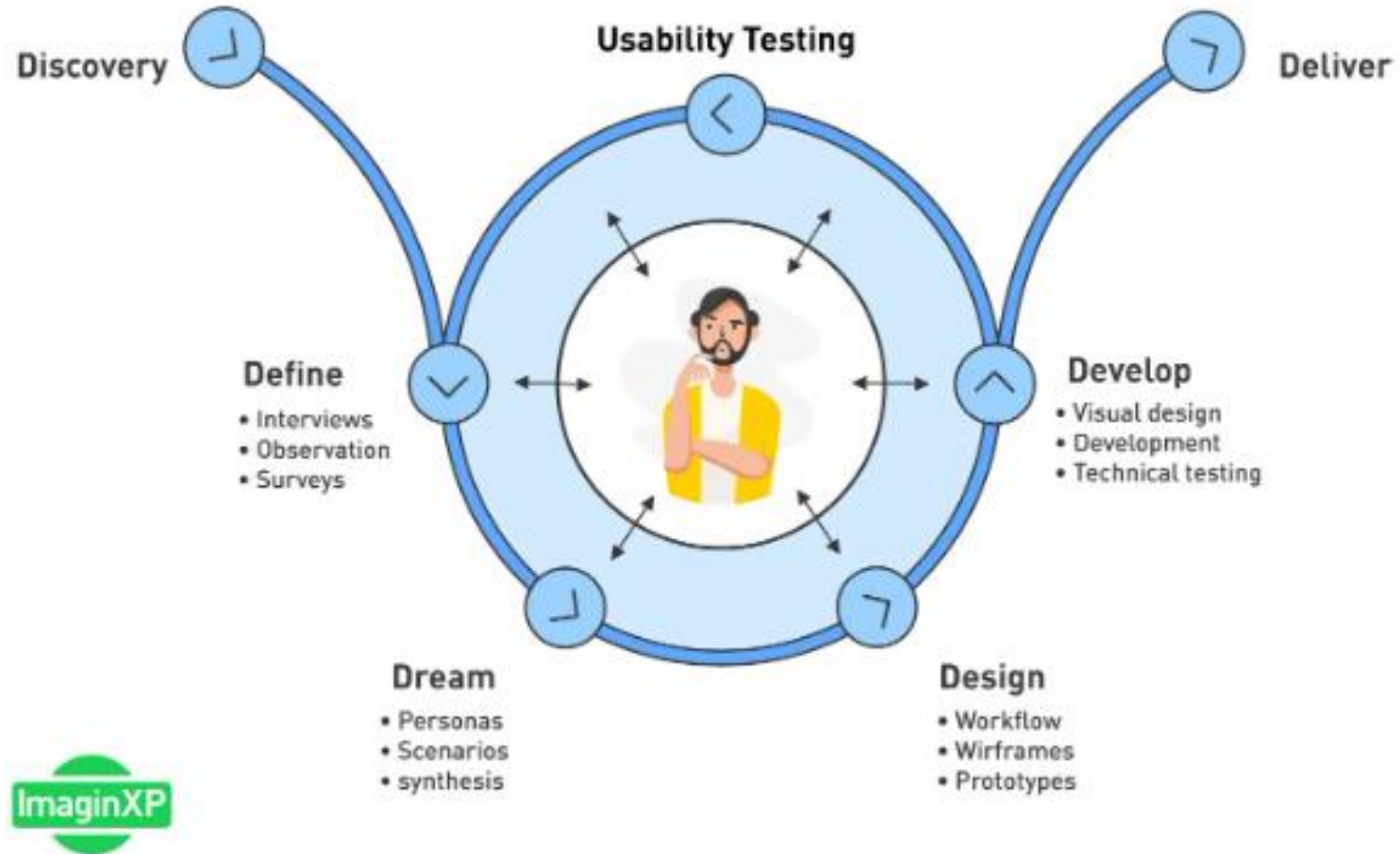
Agile Lifecycle Process

- 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.

- In the waterfall process, you do each lifecycle activity for the entire product or system. In an agile lifecycle process, you do all the lifecycle activities for one feature of the product or system and then repeat the lifecycle for the next feature.

- Agile processes are generally fast, very iterative, and responsive to change.

- "agile" means nimble or responsive to change.

Agile Lifecycle Process

- Agile processes address:
- Prerequisite 1 (In a successful project, the scope needs to be small so the time it takes to deliver a release is limited) by delivering the first chunk relatively quickly because it takes less time to implement.
- Prerequisite 2 (In a successful project, the gap between reality (true requirements) and the designer's understanding of the same needs to remain small)
- Prerequisite 3 (Feedback from actual usage is the only way to know real requirements) by delivering a small chunk that customers can use, thereby bridging the gap between perceived needs and real needs.
- Prerequisite 4 (In a successful project, feedback about requirements must be communicated effectively) by:
  - Formulating the needs as user stories of capabilities instead of abstract system requirements.
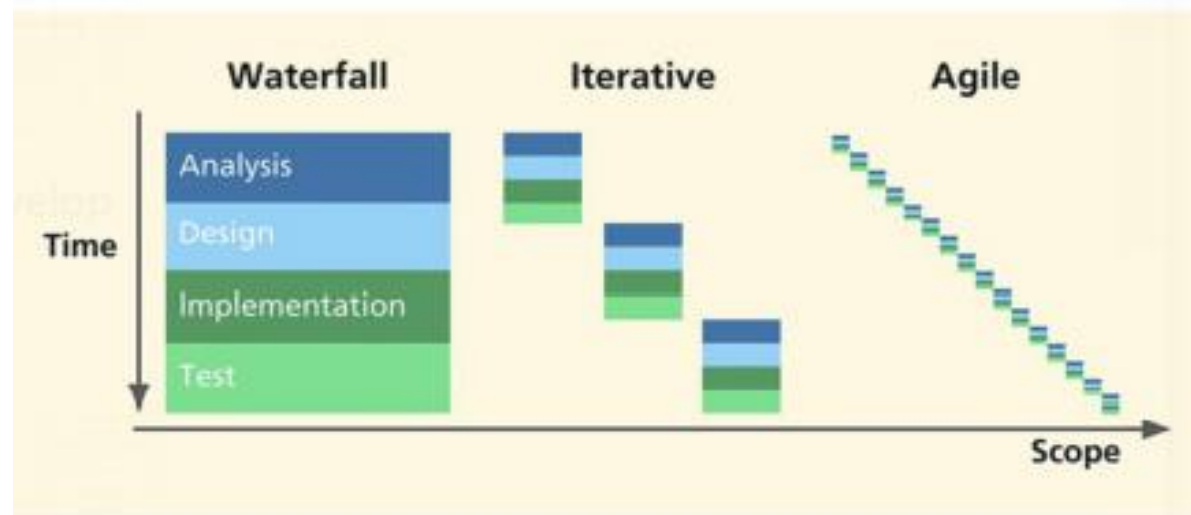 - Making the stories about small manageable features instead of the whole system.

Fig. 4-2

Scope and size of deliverables in the waterfall, iterative, and agile process (adapted with permission from Beck (1999)).

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).
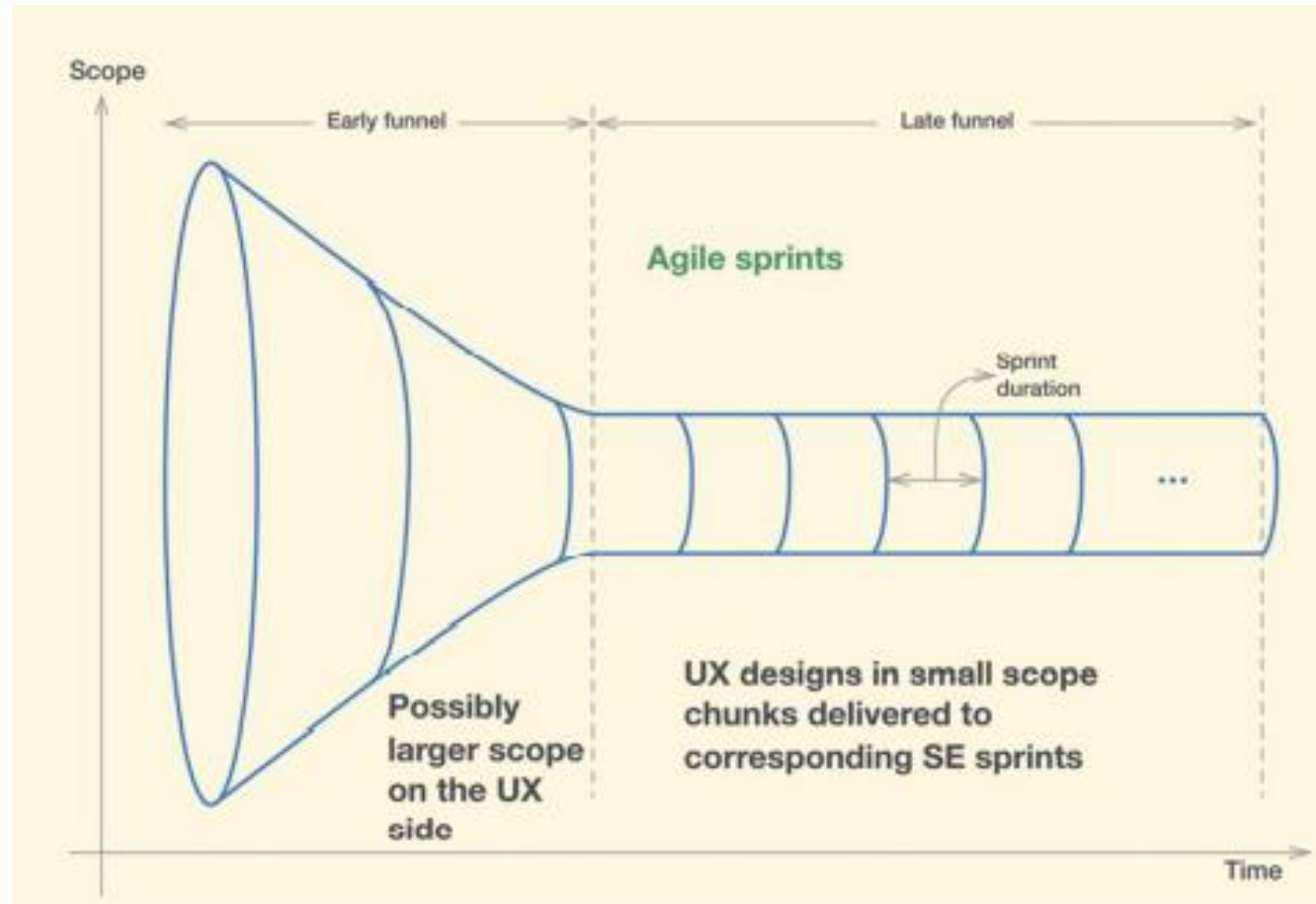
Funnel Model of Agile UX

- The funnel model of agile UX has two major parts: the early funnel on the left and the late funnel on the right

- The vertical dimension of the diagram is scope. A larger funnel diameter (taller in the vertical dimension) at any point on the funnel represents a larger scope

- And a small diameter means smaller scope at that point

- the scope of the early funnel is larger than the scope of the late funnel

Funnel Model of Agile UX

Speed and rigor in the funnel model

- The horizontal dimension of the diagram is time, representing how long activities in the funnel take to play out

- The stripes or segments depicted on the funnel visually represent iterations or sprints and the length of a segment represents the duration in time of that sprint and, by implication, the speed of methods and techniques that have to be used in a given iteration.

- Longer sprints usually correspond with higher rigor, which will need methods and techniques that are more thorough and meticulous for that iteration
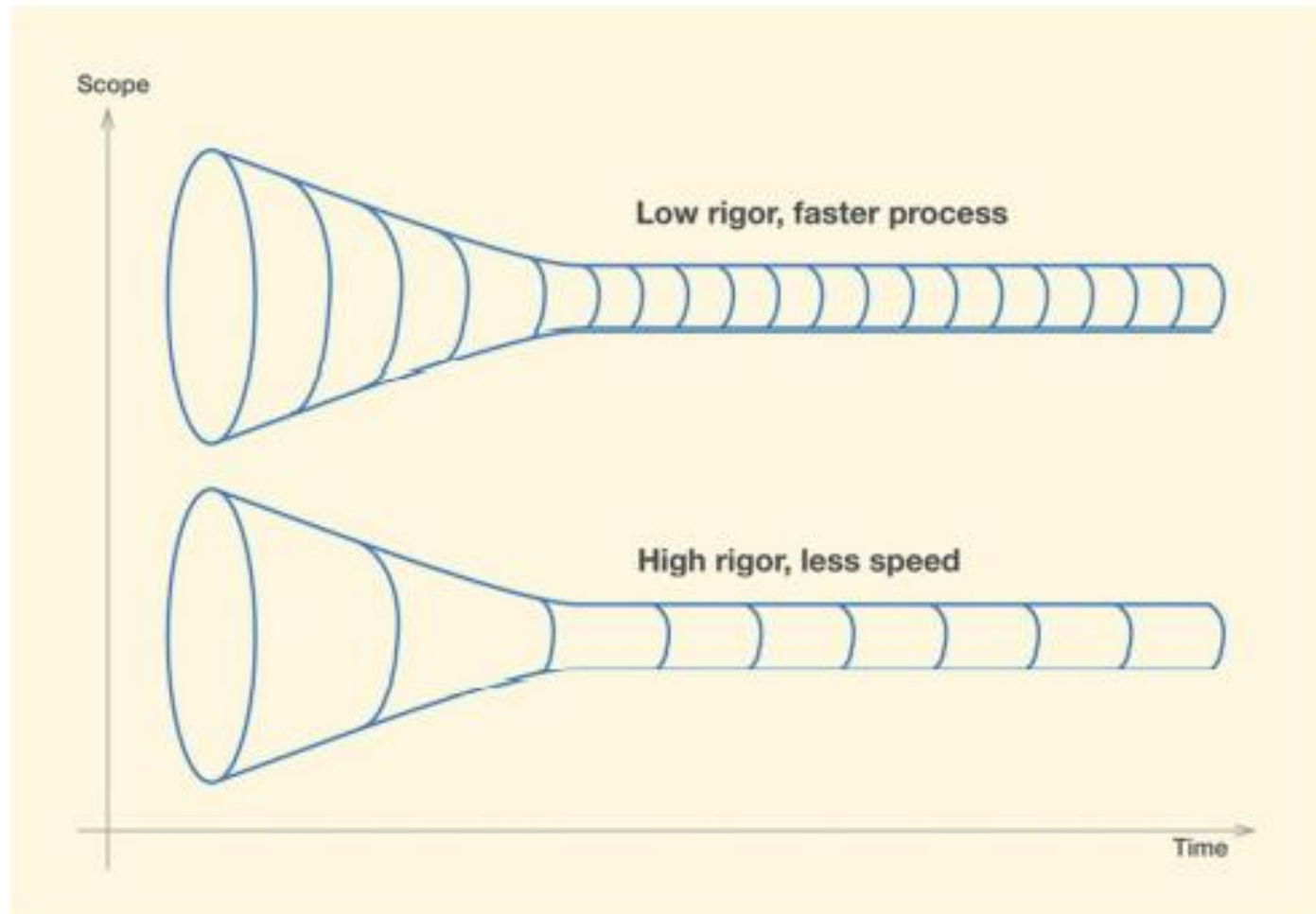
- The late funnel, or the "spout" on the right side, is where the agile UX and agile SE processes are working in synchronism.

- Here, the goal of both the UX and SE sides is typically described in terms of small chunks within a small scope (represented by the small diameter of the funnel spout) delivered within a relatively small time increment (narrow sprint duration stripe).

- 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
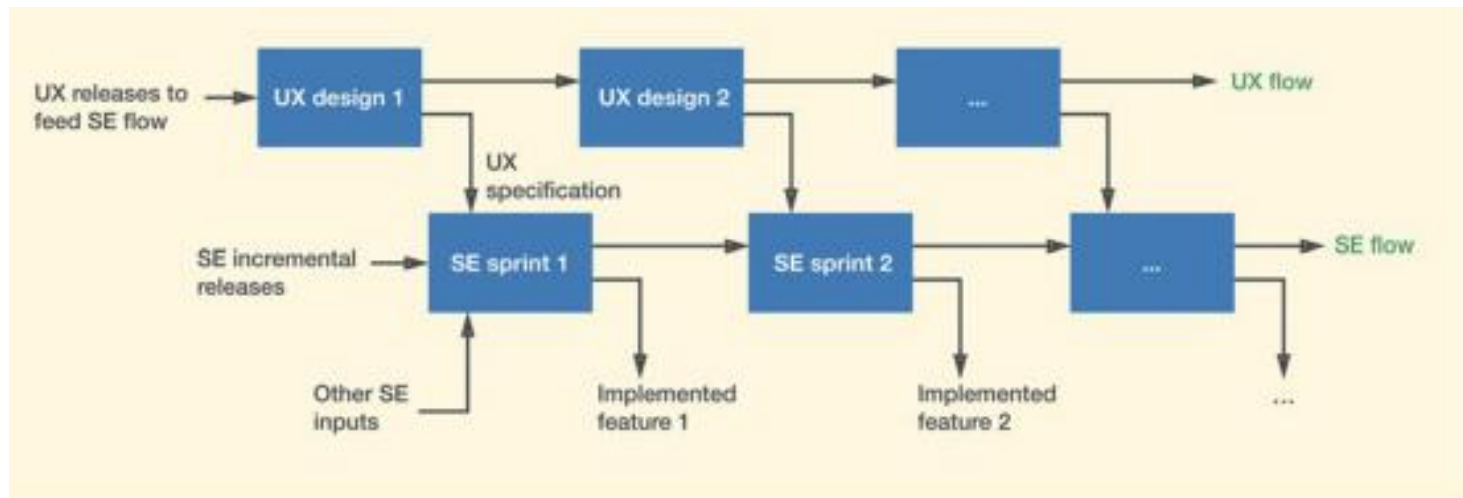
Fig. 4-5

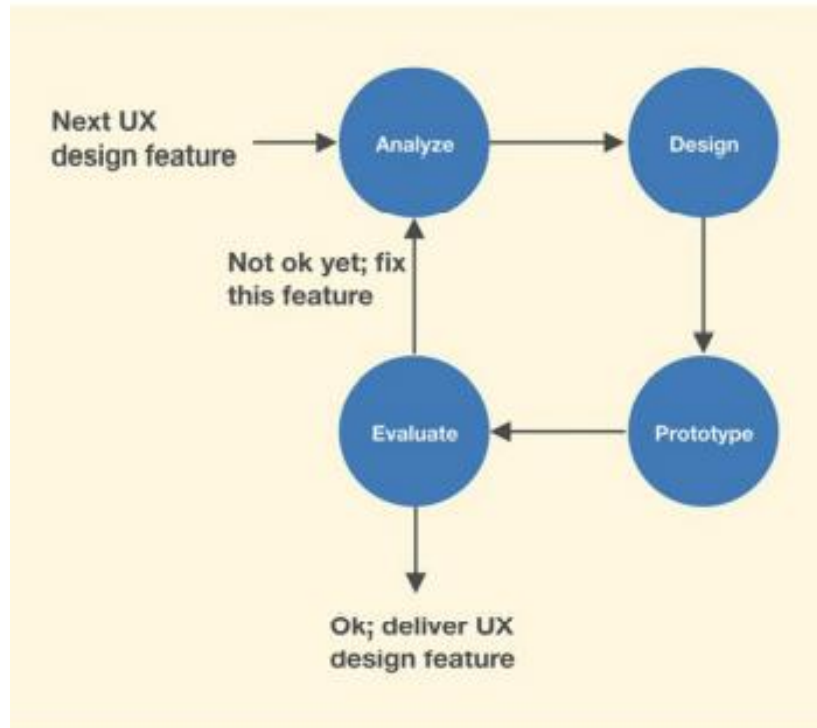*Syncing agile UX with agile SE sprints in the late funnel flow.*

Fig. 4-6
Mini agile UX lifecycle process within a sprint.

Funnel Model of Agile UX

Early Funnel Activities

- An overview, a skeleton on which to put the features.

- A solid coherent conceptual design to guide the design for the features.

- An initial top-down design.

- **Example: Developing a New Smartphone Design From Scratch**
- Suppose your project is to create a brand new smartphone to compete with the current market leaders.
- It has been decided that this entails an entirely new and innovative conceptual design—a design that is better, and more exciting to consumers, than existing options offered in the market.
- This case might require a significant large-scope effort in the early funnel to create a full conceptual design, to set the overall ecology of the smartphone, and to create a cohesive design upfront.
- It's just not possible to design a phone operating system or a brand new consumer-facing application without beginning with a large-scope design on the UX side.
- Beyond the point where you have established a consistent conceptual design, the project can then adopt the usual small scope in the late funnel to deliver the UX design.
- even after the UX and SE roles end up in lockstep in the late funnel as they release chunks of the smartphone operating system, end users may not see those chunks. This is a case where the learn through-frequent-customer-releases method doesn't necessarily work because you cannot release a new smartphone to end users in chunks

SHIFTING PARADIGMS IN HCI AND UX

- A paradigm is a model, pattern, template, or intellectual perception or view guiding a way of thinking and doing.

- Historically, with respect to a field of thought and work, thought of as coming in waves over time

SHIFTING PARADIGMS IN HCI AND UX

- three major intellectual waves that have formed the field of HCI:
- Engineering
- Human information-processing model
- Phenomenology

- **Engineering**—human factors engineering and usability engineering: To optimize the match between human and machine.

- The metaphor of interaction is about a match of human and machine.

- The engineering focus is on functionality, reliability, user performance, and avoiding errors

- **Human information-processing model and cognitive science**: This wave emphasized models of the relationship of the human mind to computers and theories of what is happening in the human mind during and with respect to interaction.

- It is about models of how information is sensed, accessed, and transformed in the human mind and, in turn, how those models reflect requirements for the computer side of the information processing.

- The metaphor of interaction is "human minds are like information processors."

- **Phenomenology**: This wave focuses on the experiential quality of interaction.

- It is about social and cultural aspects of interaction, interaction involving our whole bodies and spirits.

- The metaphor of interaction is about making meaning and how users experience meaning within an artifact and its use.