

While you are working on user experience never forget these

- Be goal directed
- Don't Be Dogmatic (being certain that your beliefs are certain and right and others should accept them).
- Use Common sense
- Context is everything
- The answer to most of the questions is it depends
- Everything should be evaluated in its own way
- ^{Yeah so much}
Improve, adapt and Overcome

Ubiquitous Interaction

- The foreseeable future is still full of tasks associated with "doing computing".
- We will need to use process for creating and refining basic computing applications and interaction styles for years to come.
- Web has made it more ubiquitous and embedded devices combined take it to a whole new level.
- Most of the user-computer interaction attendant to this ubiquitous computing in everyday contexts is taking place without even mouse or keyboards.
- More and more applications that were in research labs are moving into commercial adoption
→ Smart wears, robotics - - - etc
- The way we are interacting with our devices is changing rapidly and we need to enhance the experience of the interaction (This is root of the Human Computer Interaction Paradigm).

- " In the ubiquitous interaction we have seen how the different devices are growing. And also the change in the concept of computing and change in the concept of interaction. "»

User experience

" User experience is the totality of the effect or effects felt by the user as a result of interaction with, and the usage context of a system, device or a product including the influence of the usability, Functionality, Usefulness and emotional impact during the interaction. "»

- 'Interaction with' is broad and embraces seeing, touching, thinking about product, including admiring it and its presentation before any interaction.



Making computers disappear into the walls of, interstices of living rooms and workspaces then that would be called ambient intelligence.

Usability

" Usability is pragmatic (dealing with problems in practical way) component of user experience, including effectiveness, efficiency, productivity, ease of use, learnability, sustainability and other pragmatic aspects of user satisfaction. "»

Why we need user experience

- Say (sense of smell), say (ambience) and other things are underused in the Human Computer Interaction

- And say HCI always follows a component or usage driven interface

→ And problem with that is say

"can be frustrating for experienced users, if the option they are searching is buried to levels deep. Instead in the UX we concentrate on these aspects by following different approaches keeping different users in mind. like providing basic interface and an option to switch to advanced interface for experienced developers or atleast an option to customize."

- whereas the UX concentrates on a user experience driven approach where the major motto is the satisfaction of the user and not compromising usability.

Then what is usefulness

"usefulness is the component of the user experience to which system functionality gives the ability to use the system or product to accomplish the goals of work"

- In user experience, the concept of mutual effect implies that the interaction must be considered within context of environment shared between user and system.
- The users part of interaction is often expressed through explicit user actions used to drive the interaction towards a goal.

Functionality

"Functionality is the power to do work seated in non user interface computational features and capabilities."

- Functionality is the ability and capability of the system and in this context it should be understood that this is the obvious prerequisite to model the user experience.

Emotional Impact

Emotional Impact is the affective component of the user experience that influences users feelings.

Emotional impact include effects such as :-

- Pleasure, fun, Joy of use
- aesthetics
- desirability
- pleasure and novelty (new and different)
- engagement
- appeal, self-expression
- pride of ownership and contribution to the world.

Emerging desire for usability

- In distant past, computer usage was esoteric (intended understood by only few people with interest or special knowledge).
- But in the past the users were happy to be provided with great functionality even though it had a terrible user interaction design.

"Success despite poor interaction design can be used as a justification for resisting change and keeping bad design ideas."

example :-

The failure of voting machines in Florida was blamed by Press on improperly trained poll workers and confused voters. No one cared and who cared didn't ask a question why it takes so much training to operate a simple ballot machines or why people who are experienced in voting failed & confused to vote with this system.

- But as more and more people started to use computers slowly they realized the need for the usability and user experience.

- But if the design was good it was hard to use it. (Perspective of people) because most of the applications developed in those times if their design was good but were mostly unusable.

“ Today people look beyond sheer functionality or even usability to beauty, emotional satisfaction, meaning in what they do, and for intellectual gratification. ”

- One of the most significant motivations for field of user experience is concern about software product quality.
- A Process to ensure quality user experience that may seem to complicate the things upfront but can benefit everyone.
- Contextual enquiry is needed to improve system design and work experience.

From usability to user experience

→ Traditional concept of usability :

- usability is the aspect of HCI to ensure that Human Computer interaction is effective, efficient and satisfying for user.
- So usability includes characteristics like ease of use, productivity, learnability, retainability, effectiveness and efficiency.

→ Misconceptions about usability

- usability is not dummy proofing as some people used to call it.
- Similarly usability is not equivalent to being user-friendly and 'doing usability' is sometimes thought as 'usability testing'
- Another misconception about usability is that usability has to do with the visual appeal

“ visual design is an integral and important part of usability But it is not the only part in the interaction design ”

→ The expanding quality of quality in our design :

- The field of interaction design has grown slowly, and our concept of what constitutes quality in our design has expanded from an engineering focus of performance into the usability under the original focus into what we know as UX.

→ Is not emotional impact what we have been calling user satisfaction.

- Emotional impact is a traditional subjective measure of usability

- The user satisfaction is thought as the result of how users experience usability.

→ Functionality is important but a quality user experience can be even more so.

→ A good user experience does not necessarily mean High Tech or Cool!

→ Design beyond just technology

- Technology is just one of design contents

- Design itself is the focus and we drive it in a way to provide better user experience.

→ Components of a user experience.

- The newer concept of user experience still embodies all implications (effective, efficient, user satisfaction) of the usability

- expanding the scope of user experience to include; effects experienced due to

 - > usability factors

 - > usefulness factors

 - > emotional impact factors

- **Utility** :- refers to usefulness, importance or interest of content

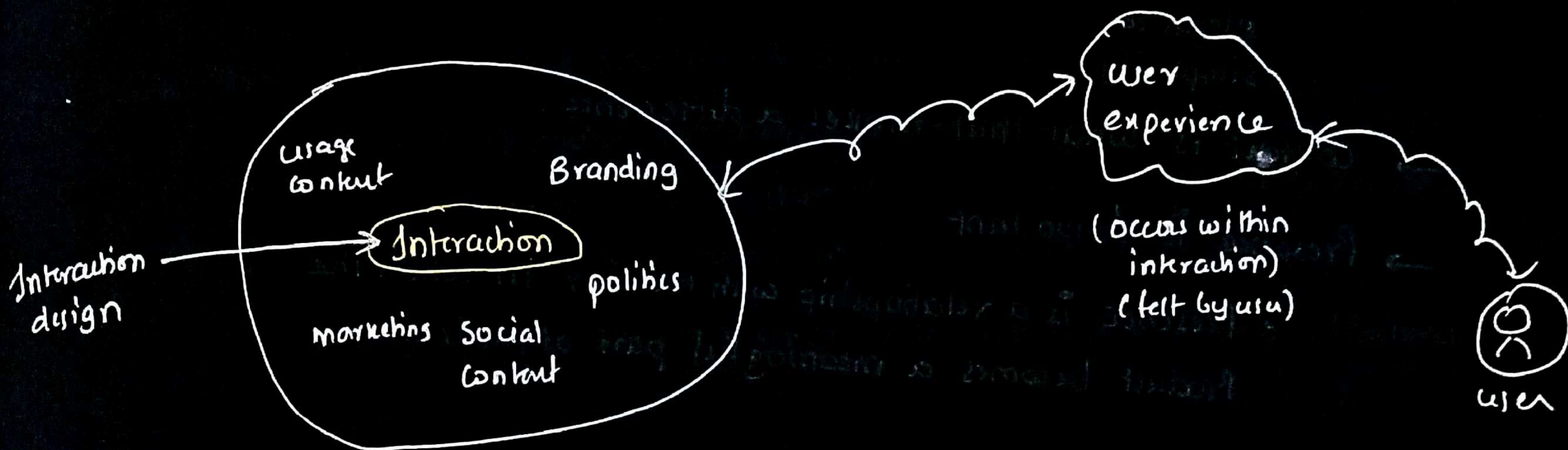
- **Functional Integrity** : quality, lack of bugs, working product as promised

- **Usability** : learning rate, ease of use. Even though a product can be functionally integral and have utility value but is hard to use then it is useless.

- **Persuasiveness** : The extent user tries to handle the product in any case of use.

- user experience is mostly felt internally
- user experience is cannot be designed.

“ The most important thing to remember is that user experience occurs within interaction and usage context. ”



Emotional Impact as part of user experience

- users are no longer satisfied with the efficiency and effectiveness, they are also looking for emotional satisfaction.

→ The potential breadth of emotional impact

- A user may be satisfied, mildly satisfied, not satisfied at all.
- But if user loves to use something, then that had earned beauty earned by its beautiful design.
- And we need to analyze what constitutes real emotional impact in usage.

→ A Convincing Anecdote

- when the ipads were launched they were called a 'disappointment' and a 'failure' & 'why would anyone want it'
- But it was successful, not because of technical value or utility but because of the emotional satisfaction of the users.

→ Connection between Aesthetics and emotional aspects.

- visceral design — appeals to gut feeling
- Behavioral design — usability and design
- Reflective design — identity, satisfaction, memories

- The seven dimensions of feelings about a system

attractiveness

Symmetry

Sophistication

Trustworthiness

awkwardness

Elegance

Simplicity.

→ Context is what that makes a difference.

→ Presence is Important

- Presence is a relationship with the user in which the product becomes a meaningful part of their life.

User experience needs a business case

- UX is a ubiquitous term that we use to refer most of things that has to do with the design for a high quality user experience.

→ It is easy to mistake positive signs as indicators that a product has no user experience problems. It can be identified by:

- users may be only accessing a few portion of the functionality you are offering
- frequent calls to help on how to use a feature
- requests for feature that already exists.

→ The Business strategy: "Training as a substitute for usability in design"

- But for next versions new Training → more cost and more fuss

Roots of usability

- It is a matter of debate exactly when the computer usability was born.

- It was the topic of interest to some by late 1970's and early 1980's

→ A Discipline of coming Age :

- Compared to things like civil engineering computer science is an infant and HCI is still an embryo.

→ Human Factors and Industrial & Systems engineering

- Human computer interaction is clearly about human behaviour and is used to drive system design and human performance is a measurable outcome in those systems.

- Goal of our systems design is to eliminate the errors / failures caused by humans.

→ Psychology and Cognitive science.

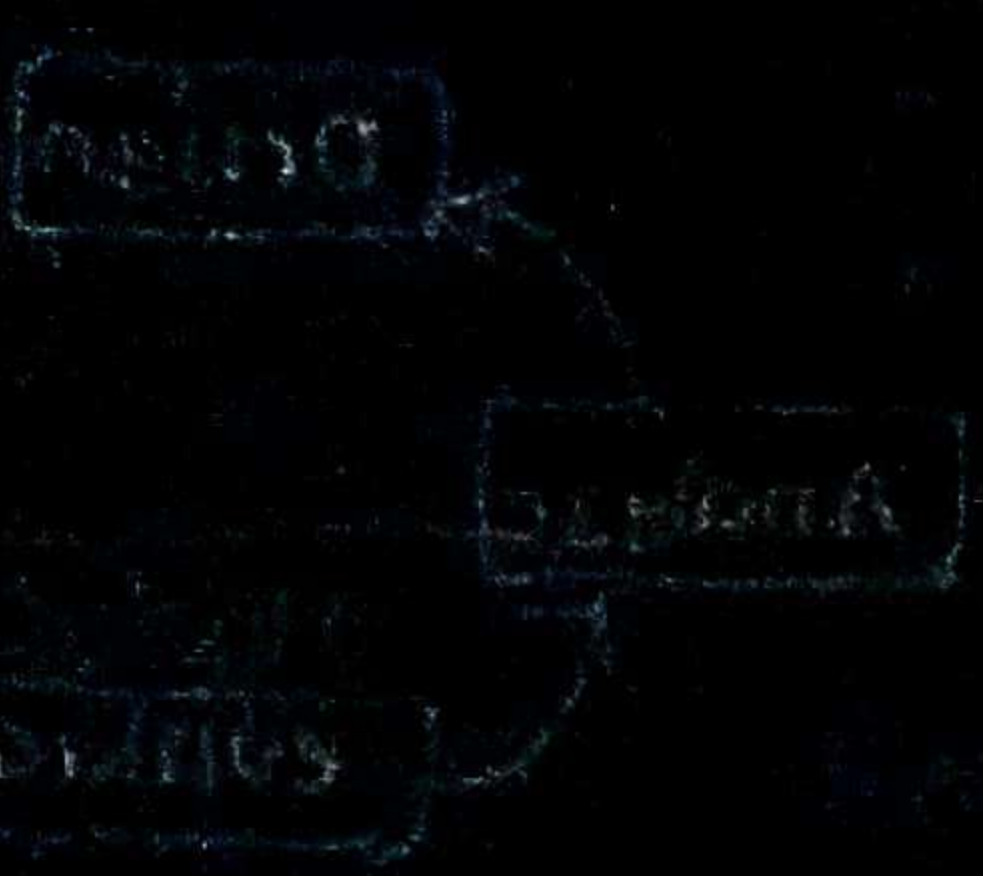
→ Task Analysis

The process of describing tasks (how users do things) and their relationships is called task analysis and is used to drive design and build predictive models of user task performance.

→ Human work Activity and ethnography

→ Software engineering

→ Computer science: Interactive graphics & devices



The wheel: A lifecycle Template

• A Lifecycle is a structured framework consisting of a series of stages and corresponding activities (analysis, design, implementation & evaluation) that characterizes the course of evolution of interaction design on a system.

• An iterative process is one in which all the part is repeated for the purpose of exploring, fixing, refining a design for a system.

It is the "wash, rinse, repeat" characteristic of HCI.

• A process contains a set of activities and techniques we can use the terms process, lifecycle, lifecycle process interchangeably.

→ process acts as a scaffolding, for novice practitioners to ensure that they are on the track to a quality product

→ process acts as a checklist for experts to not to miss any important aspects of problem solving

→ A process helps a designer know

"where are we now?"

"what should we do next?"

• process is a solution recognized by software engineering folks long ago.

• Building usability into a system requires more than knowledge of what is good. so usability engineering should be the part of software development.

• A process is not necessarily rigid.

some example processes:

> waterfall model

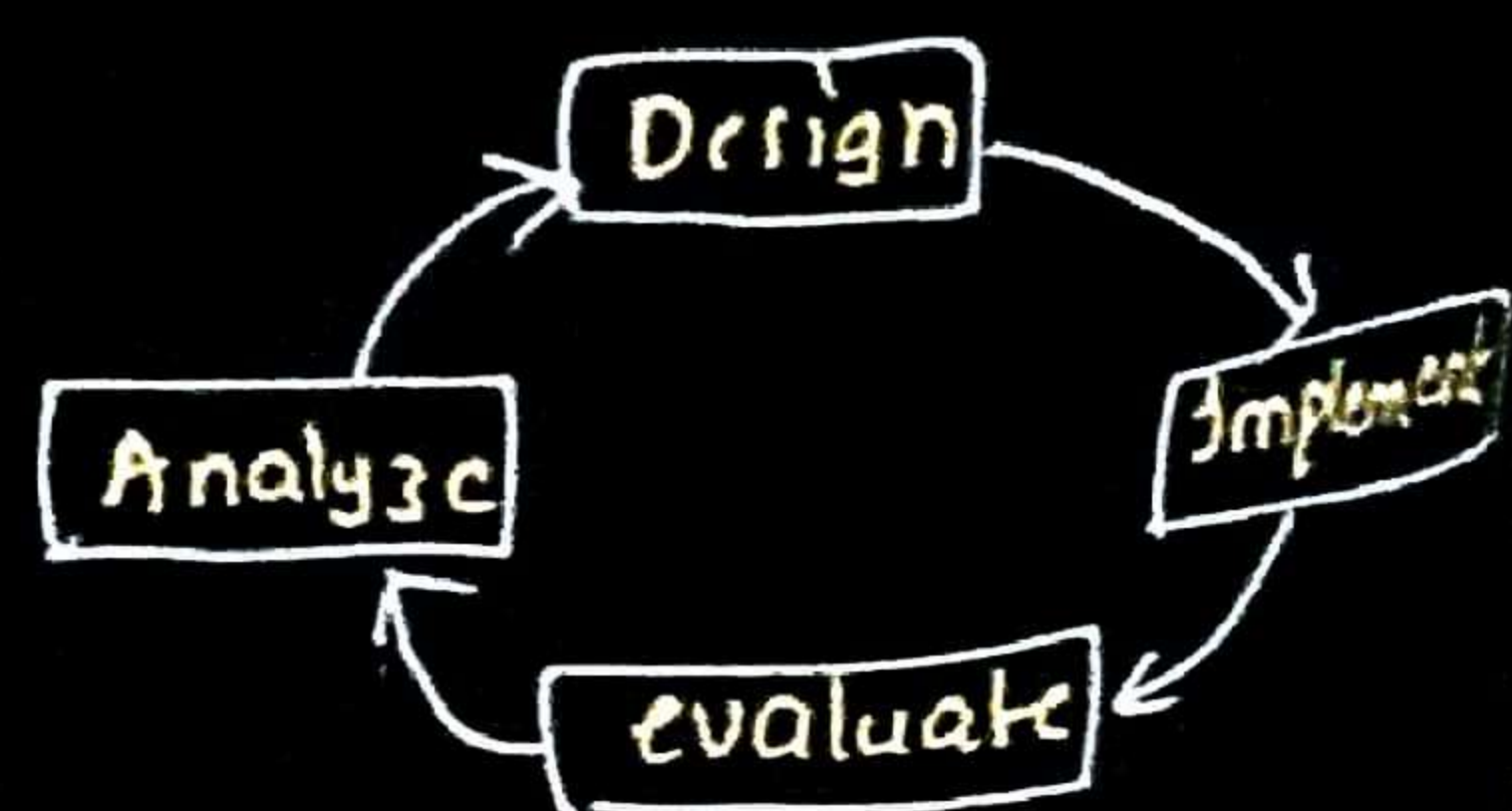
> spiral model

> Star lifecycle of usability engineering

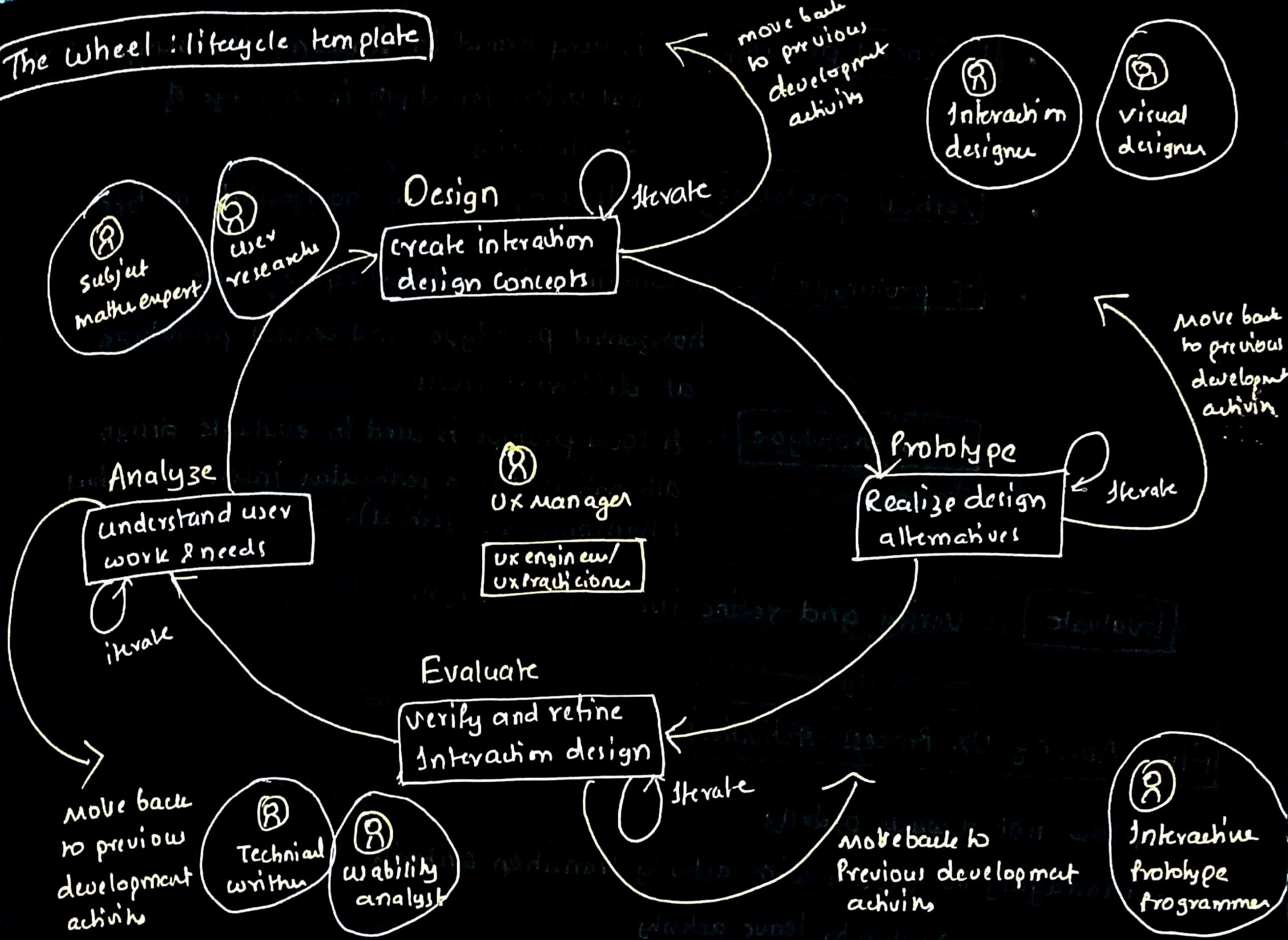
> the wheel lifecycle

> LUCID Framework

Abstract lifecycle (universal)



The Wheel: lifecycle template



- each of UX processes can have sub activities
- A method is a general approach of carrying an activity or a sub activity.

Analyze: understanding business domain, user work and user needs

→ The think aloud technique is a qualitative data collection technique in which the user participates in verbally externalize their thoughts about their interaction experience including motives, perceptions of UX problems

- extracting requirements
 - synthesizing design-informing models.
- ↑ sub-activities

Design: creating conceptual design, interaction behaviour look and feel.

- design ideation
- mental model.
- design storyboard.
- design production
- iteration of conceptual design.

Prototype: Realizing design alternatives

- **Horizontal prototype** : is very broad in features it incorporates but offers less depth in coverage of functionality
- **Vertical prototype** :- It is opposite to horizontal prototype
- **T prototype** :- It combines the advantage of both horizontal prototype and vertical prototype at different levels.
- **Local prototype** :- A local prototype is used to evaluate design alternatives for a particular interaction detail (horizontal vs vertical).

Evaluate :- Verify and refine interaction design.

Flow Among UX Process Activities

- Flow not always orderly
- managing the process with activity transition criteria
 - when to leave activity
 - when to revisit
 - when to stop.
- Iteration must be started early

Lifecycle Streams

- The lifecycle is more of a continuous stream of reusing, improving ideas, designs, deliverables.

Choosing a process Instance for your project

- In the lifecycle template you must instantiate it for each project by choosing parts that best suits your project parameters.

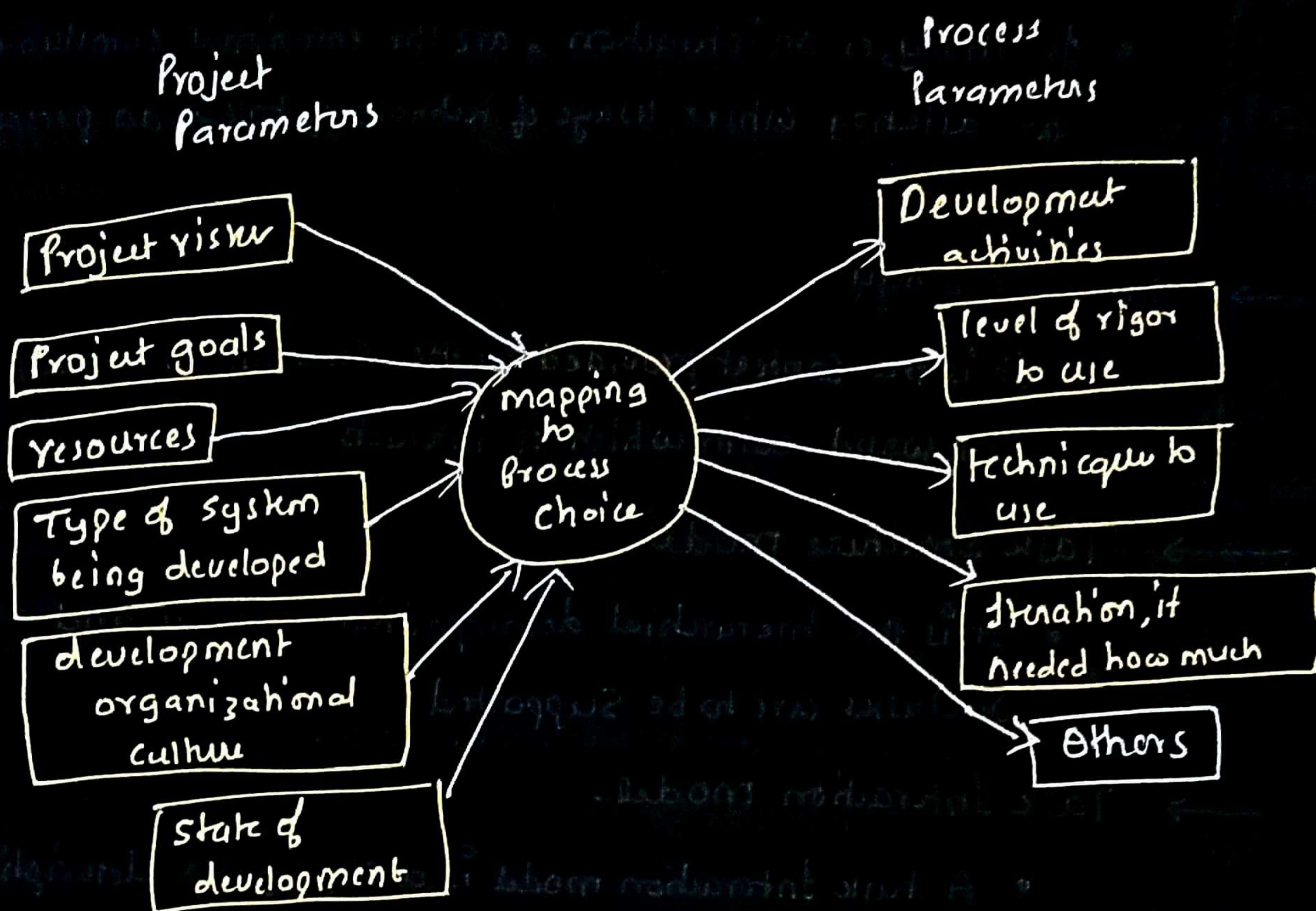
→ Project Parameters : Inputs to process choices :

- Factors to consider are :
 - > risk tolerance
 - > Project goals
 - > Project resources
 - > type of system being designed
 - > development organizational culture
 - > stage of progress within project.

→ Process Parameters : Outputs & process choices

- agile ux approach
- spiral approach
- Discount methods to choose from a variety of data collection techniques.

→ mapping project parameters to process choices



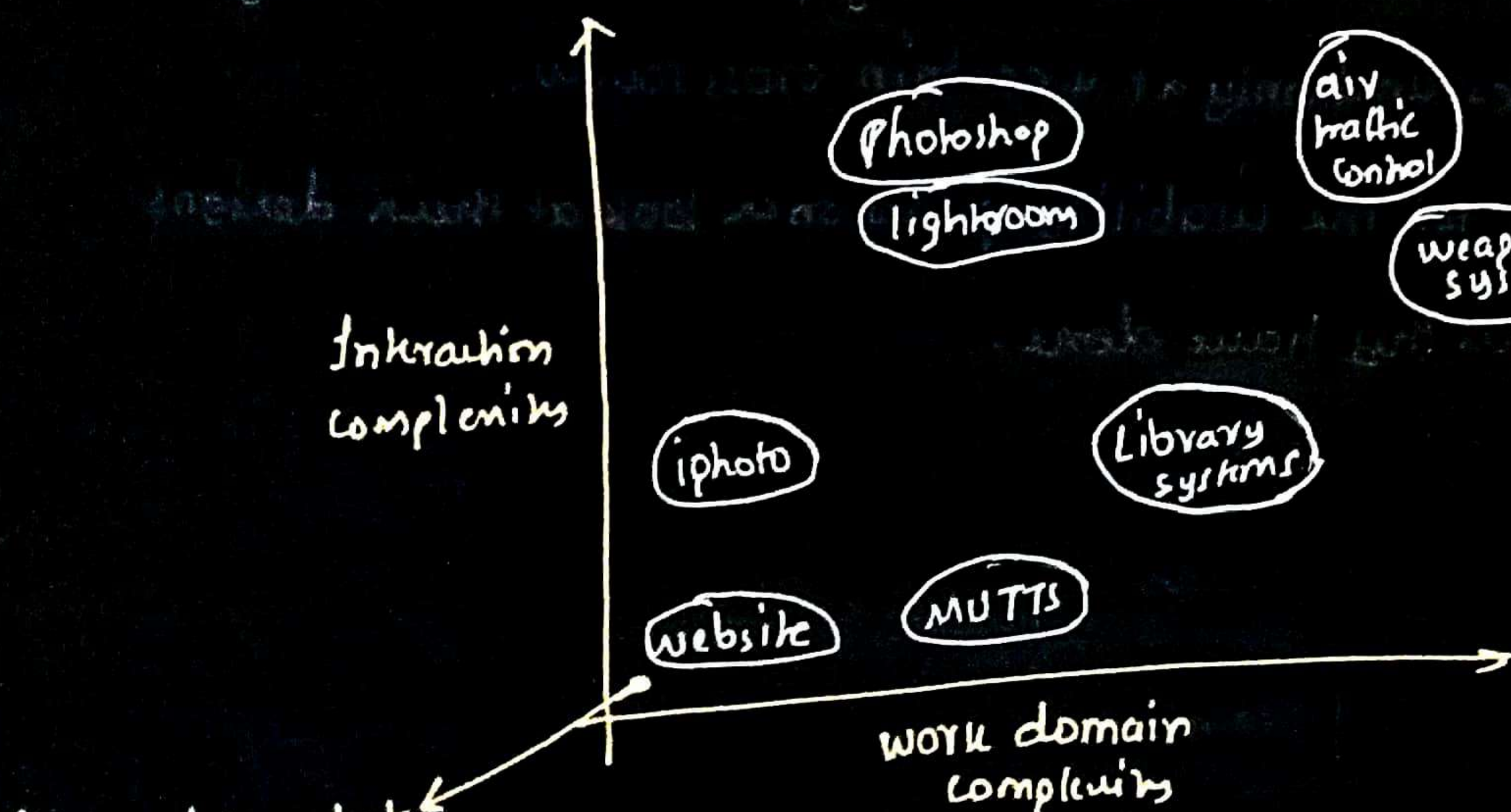
System complexity space

- System or product types overlap and have fuzzy boundaries within system complexity space

MUTTS : middleburg university ticket transition service

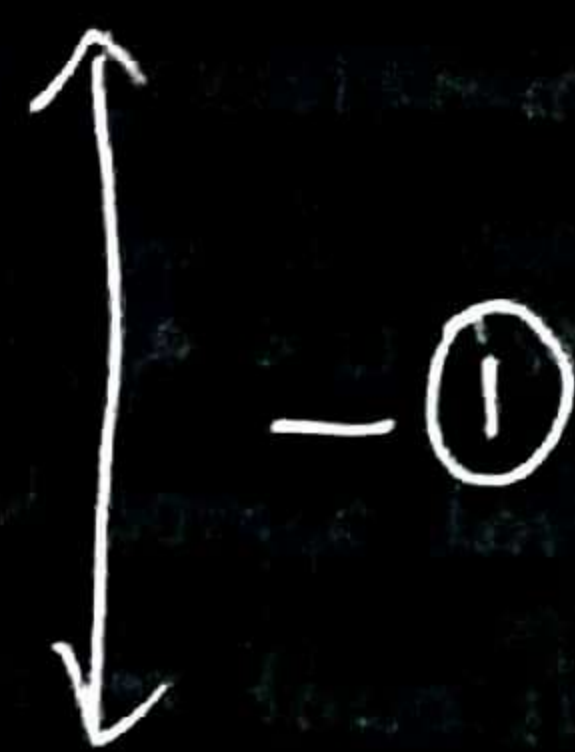
eg: Photoshop, lightroom, aperture.

There is an trade off between interaction complexity and domain complexity



The more complex is interaction the more complex is the domain work which influences the process choice by system type

- Simple interaction, simple work domain
- Simple interaction, complex work domain
- Complex interaction, simple work domain
- Complex interaction, complex work domain



→ Phenomenological aspect of interaction

- It analyzes on interaction, are the emotional cumulative effects are affecting where usage of technology taken an presence in our life.

→ System ecology

- It is the context provided by the surrounding parts of the world with which it interacts.

→ Task structure model

- It is the hierarchical decomposition of tasks and subtasks are to be supported

→ Task Interaction model.

- A task interaction model is a step by step description including task graph, intentions, triggers and user actions

→ Architect model.

- An Architect model is a representation of how tangible elements (physical/electronic) are used and structured in business process flow of doing the work.

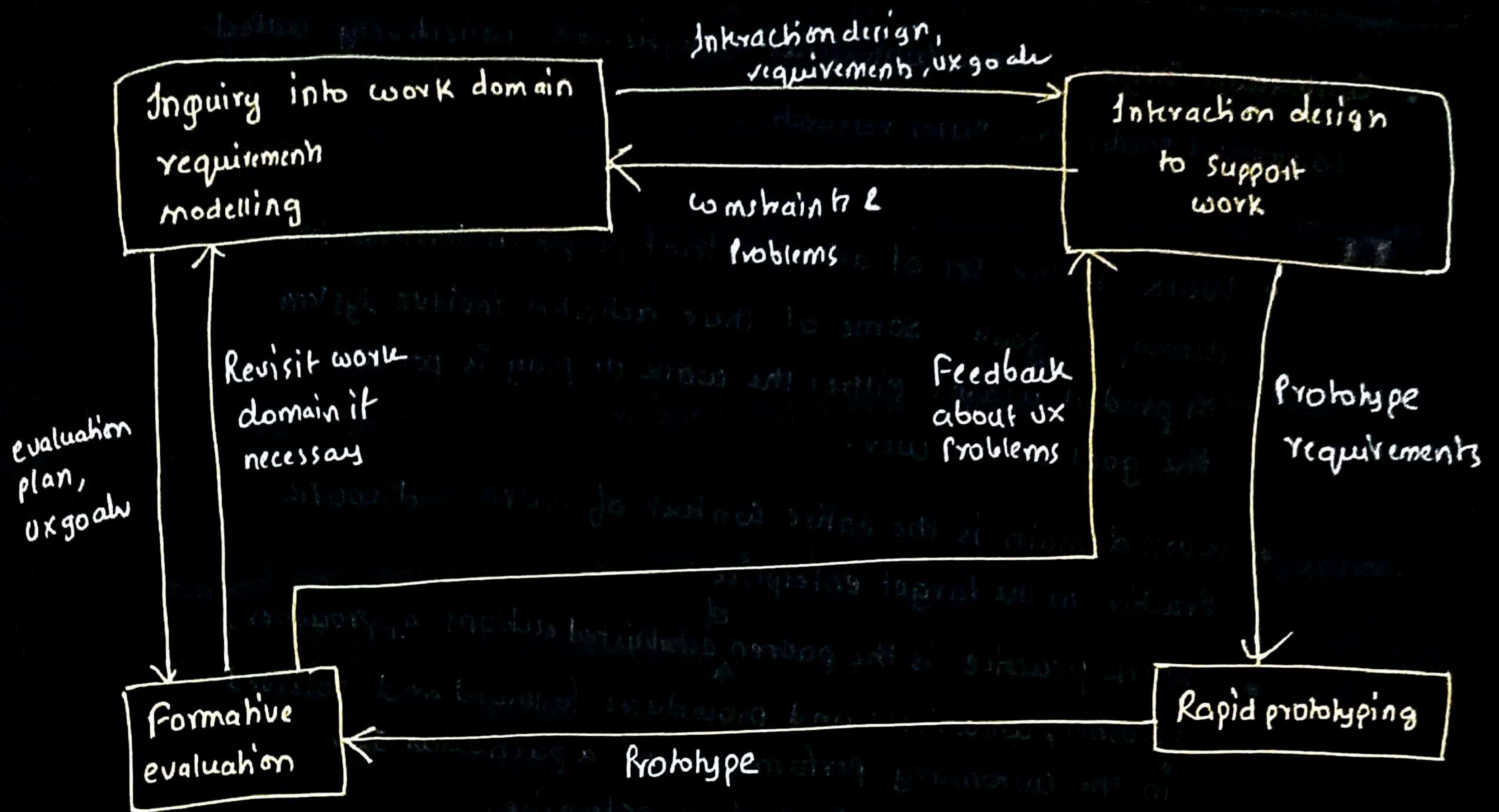
→ gradations within system complexity space:

examples to ① in previous diagram.

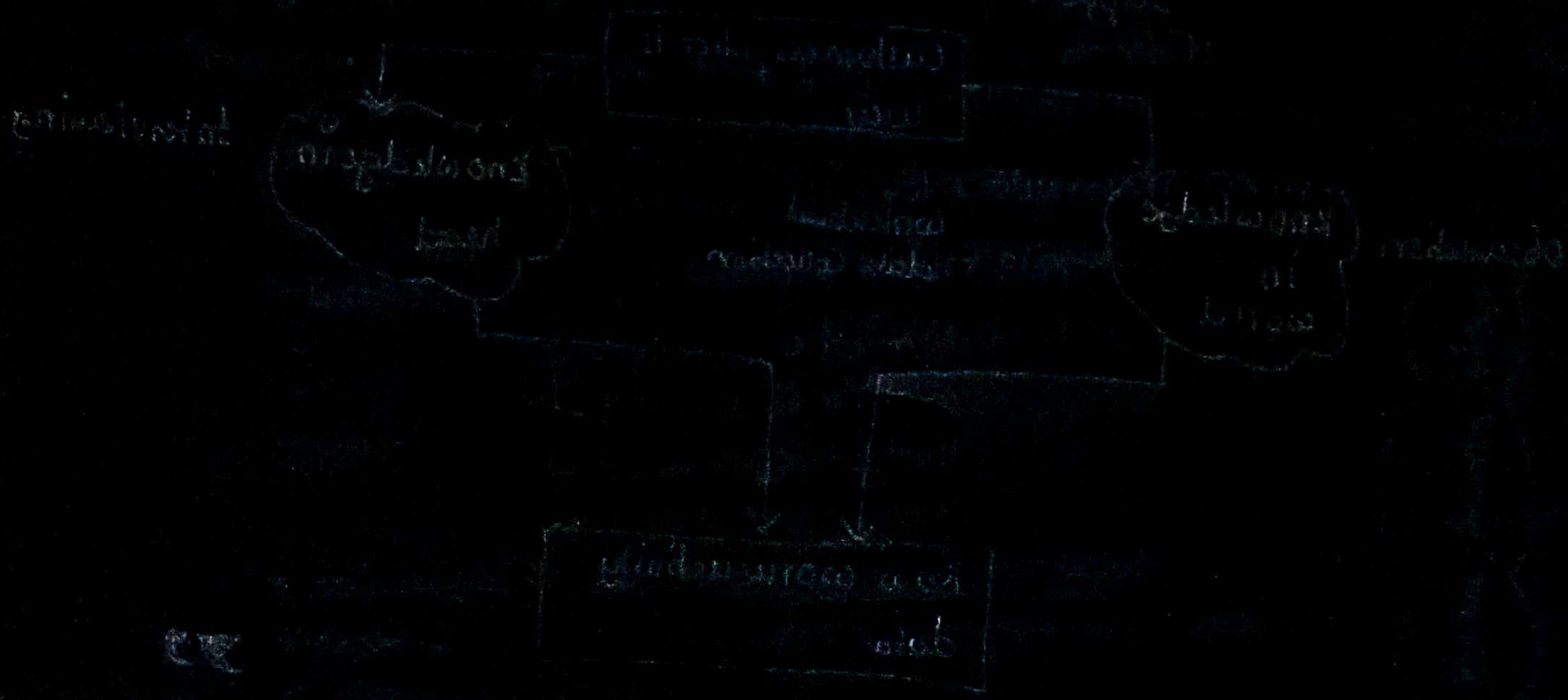
Scope of UX Presence within the team

- In earlier days it was assumed that usability practitioners was only needed in small doses and only at a certain crossroads.
- Software engineers let the usability practitioners look at their designs more or less after they have done.

more into the ux lifecycles



The goal of contextual inquiry is to observe users
 in their own work environment. This approach
 allows researchers to understand the context
 in which users perform their tasks. Contextual
 inquiry is a form of field research that
 involves observing and interacting with users
 as they go about their work. The goal is to
 understand the user's perspective and to
 identify usability issues that may not be
 apparent in a laboratory setting. Contextual
 inquiry is particularly useful for understanding
 complex tasks and for identifying usability
 issues that are related to the user's work
 environment.

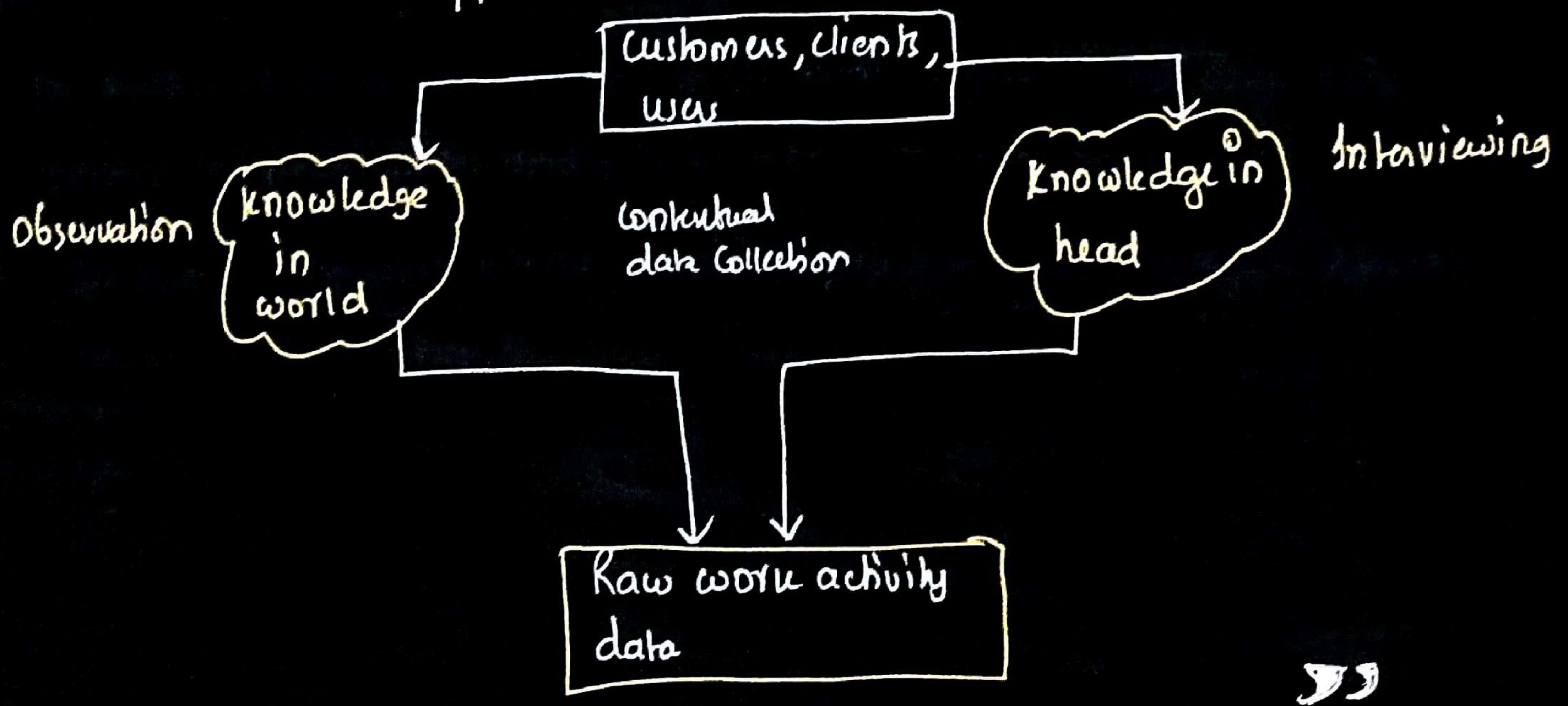


Contextual Inquiry: Eliciting work Activity Data

Contextual Inquiry and Contextual analysis are collectively called contextual studies or "user research".

- Work is the set of activities that people undertake to accomplish goals. Some of these activities involve system or product usage. either the work or play is per se the goal of the user.
- Work domain is the entire context of work and work practice in the target enterprise.
- Work practice is the pattern of established actions, approaches, routines, conventions and procedures followed and observed in the customary performance of a particular job to carry out operations of an enterprise.
 - Work practice often involves learned skills, decision making and physical actions and can be based on tradition and habit.
- Work Activity is comprised of sensory, cognitive and physical actions made by users in course of carrying out the work practice.
- Contextual Inquiry is an early system or product ux lifecycle activity to gather detailed descriptions of customer or user work practice for the purpose of understanding the work activities and rationale.

→ The goal of Contextual enquiry is to improve work practice and construct/improve system designs to support it.



The system concept statement

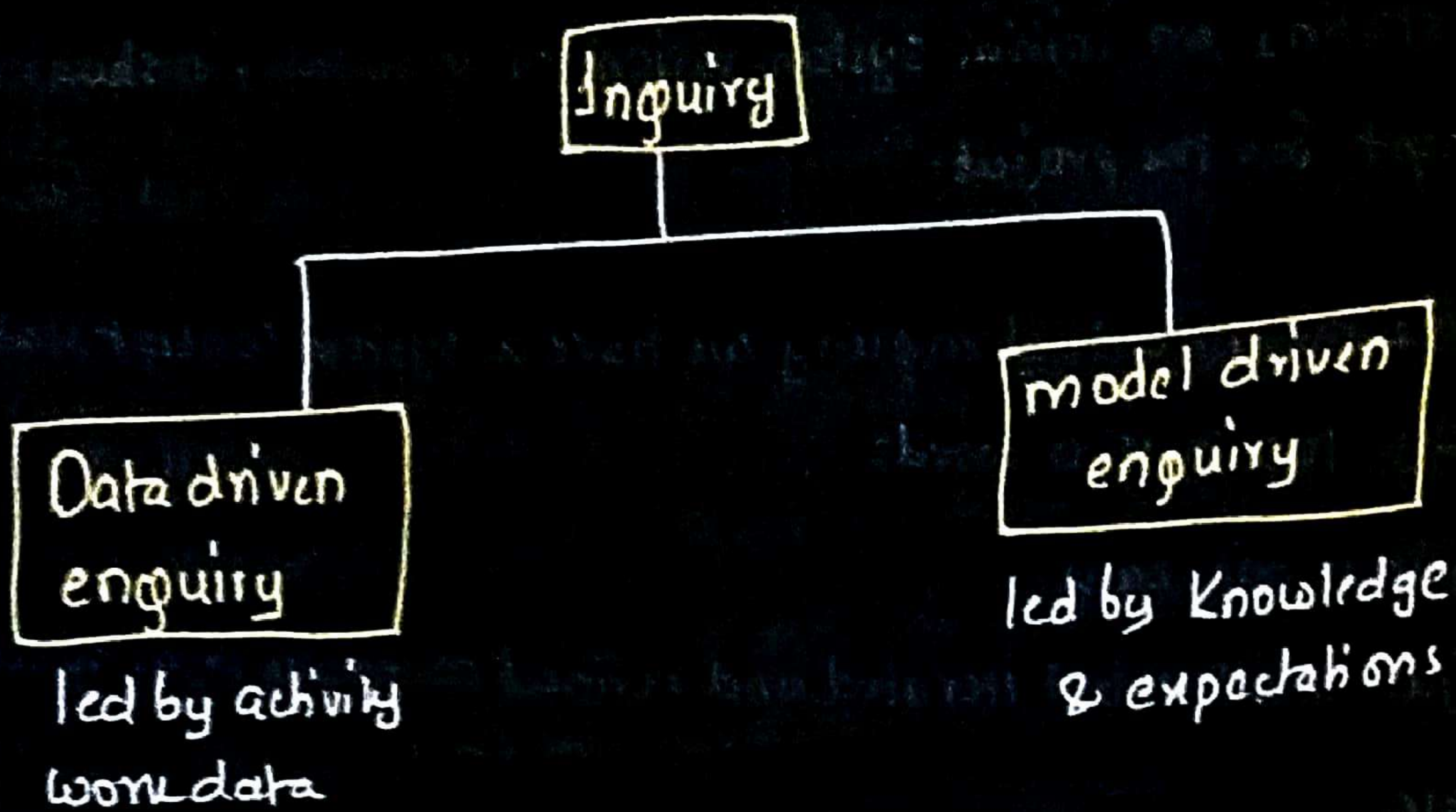
- A system concept statement is a concise descriptive summary of envisioned system or product stating an initial system vision or mandate. In short it's a mission statement for the project.
 - even before the conceptual enquiry we have a system concept statement
 - It is usually 100 to 150 words
 - writing it is not easy
 - It's not just written but iterated and refined to make it as specific as possible.
- A good and effective system concept statement answers the following questions:
 - what is system name?
 - who are system's users?
 - What will system do?
 - What problems will system solve?
 - What is design vision & what are emotional impact goals?

User work activity data gathering

- To do the user work activity data gathering you need to do:
 - > conduct field visits to client
 - > observe and interview users while they work
 - > inquire into users work place
 - > learn how people do the work your system to be designed to support
 - > Take notes of all above things
- Domain complex systems are systems with high degree of intricacy and technical content in the work.
 - > Learn about the domain
 - > Issues about your team
 - how many people to send on visits
 - number of visits
 - planning interview & observation strategy
 - > Lining up the right customer & user people
 - explain need for visit
 - purpose of visit
 - build rapport & trust
 - obtain permission
 - > get access to key people & remember the goal
 - > setting up right conditions & recording the video
 - > preparing initial questions

Before, during, after

Data bin :- is a temporary repository to store the Contextual Information



Look for emotional aspects of work practice

- emotional & social aspects of work place.
- where the stress & pressure are
- look ways to fight boredom.

Abridged contextual process

- The full vigorous contextual enquiry process is only necessary for the domain complex systems. But this is always not necessary
 - > Minimize overlap in raw data collection across interviews
 - > use experience to just focus on the essentials
 - > limit the scope and rigor
 - > Do not make the audio or video recordings (save resources)

Data driven v/s model driven enquiry

- In the data driven enquiry, you just start with the contextual enquiry and go on with that. so it results in a voluminous raw data describing various topics
- model driven enquiry does the opposite, it uses what we know already from experience, intelligent conjuncture, expectations, marketing analysis, mission statements to gather data. so a practitioner knows what models to choose and what data to feed to each model.

History

- Work Activity theory in HCI stemmed from a democratic movement that flourished in Scandinavia during 1980's. It emphasized human labor and human activities as complex, goal-directed and socially situated phenomena mediated by tool usage (inspiration & root for prototyping)
- The essential foundation of contextual enquiry is also in ethnography, an investigative field rooted in anthropology.
(ethnography is the in-depth study of a culture or a facet of culture).
- HCI
- Courses in universities

Contextual analysis deals with consolidating and interpreting work activity data

Contextual Analysis

Contextual analysis is the systematic analysis - identification, sorting, organization, interpretation, consolidation and communication of the contextual user work activity data gathered in contextual enquiry for understanding the purpose of work context for the new system to be designed.

- It involves building a flow model & synthesizing work activity notes. (Interpretation)
- Data consolidation & communication are done by using: building a (WAAD) work activity affinity diagram from work activity notes and walk through them.

Flow model

- A flow model is a diagram giving the overview of work, emphasizing the communication and information flow among work roles and between work roles and system components within work activity of the organization
- A work activity note is used to document a single point about a single concept/topic synthesized from raw contextual data.
- An affinity diagram is a hierarchical technique for organizing and grouping the issues and insights across large quantities of data and showing it in a visual display (mostly on a wall).

- A work activity affinity diagram is an affinity diagram used to sort and organize work activity notes in contextual analysis.

- Contextual analysis does not directly yield requirements on design.
- for each work role you need to do a separate data interpretation.

Organizing Concepts: Work roles and flow model

- managing complexity with work roles and flow models.
- identify work roles as early as possible.
- start sketching an initial flow model as early as possible
- creating & managing work activity notes

- each activity note should have unique ID
- Paraphrase
- Filter noise in data
- Keep it simple & to point
- Avoid repetition

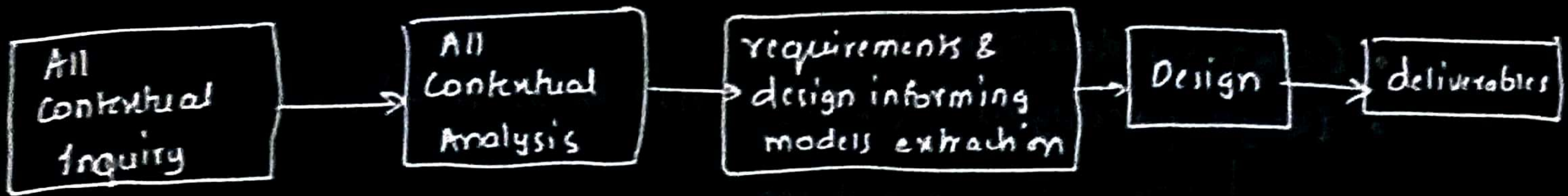
user class: A user class is a description of relevant characteristics of user population who can take a work role.

- using data bins to accommodate the work activity notes categories
- print work activity notes

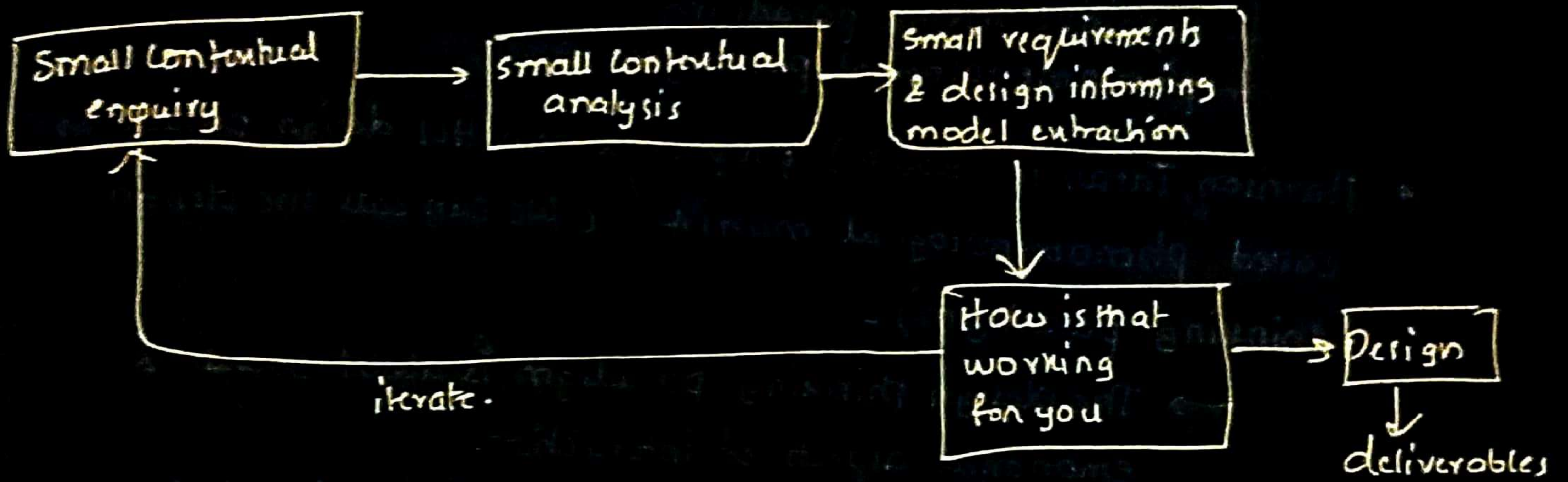
Constructing WAAD

- Set rules of the game
- Donot make sweeping decisions involving technology solutions
- growing clusters out of notes
- Categorizing clusters by work roles
- Labels for clusters
- clusters analyzed by analysts.
- Label colors
- grouping groups
- Consolidation & communication

Coarse grained iteration (full contextual inquiry)



Fine grained iteration (small contextual process)



''

But in real there is a huge gap between Analysis & design.

• Requirements extraction

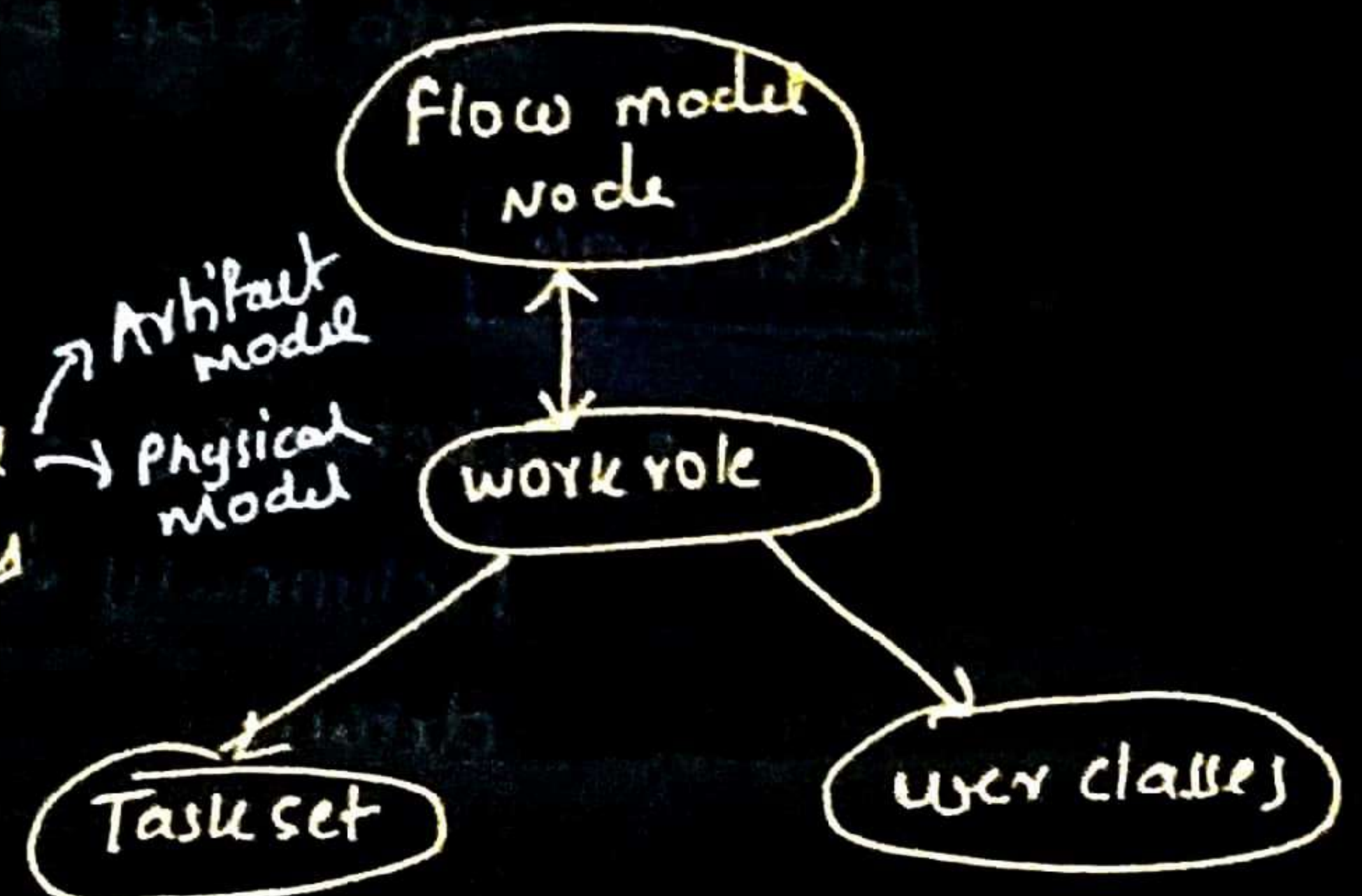
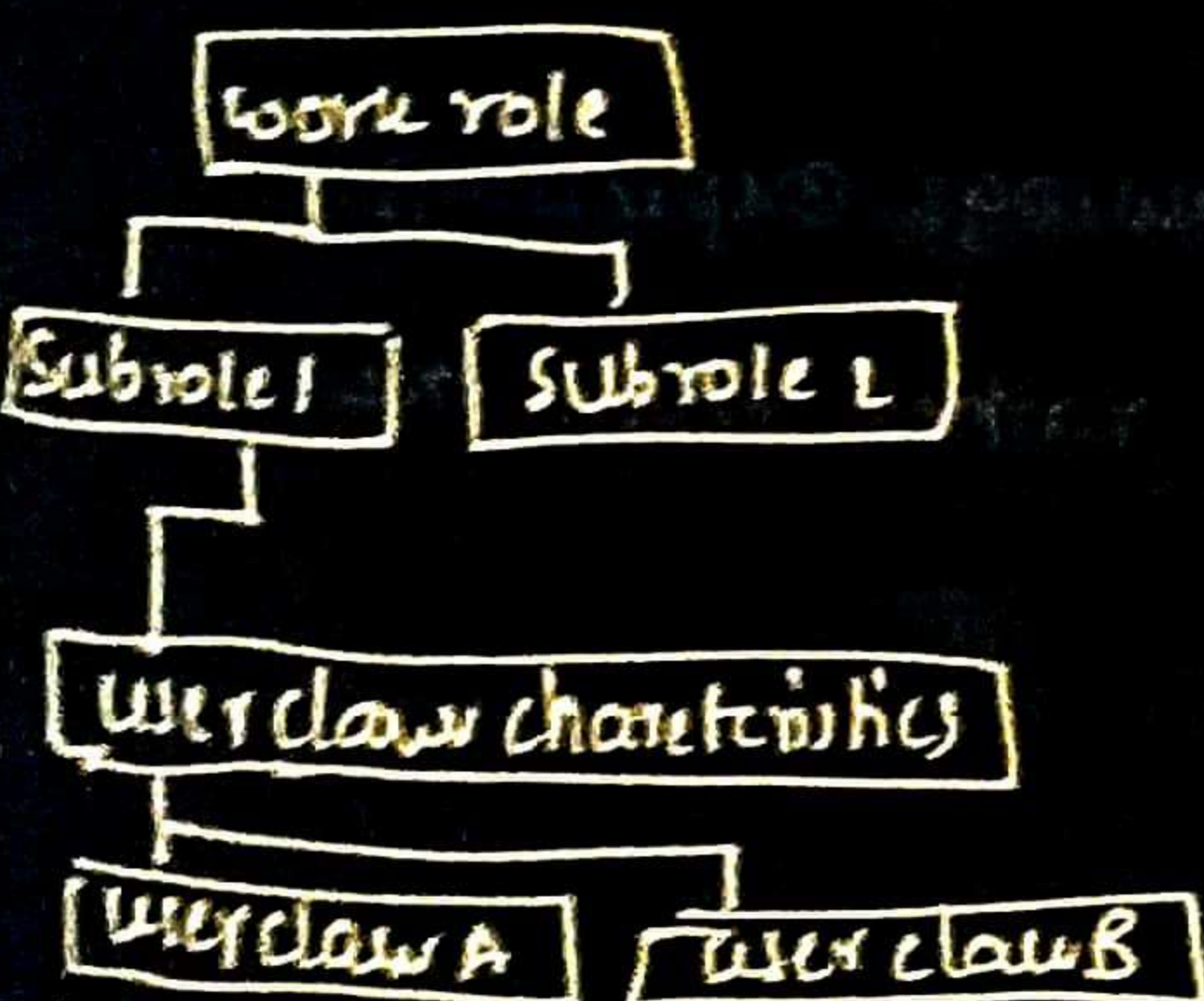
- switch from inductive to deductive reasoning
- systematic deduction of needs as hinges
- requirement statements
- requirement document structure
- looking for emotional impact requirements
- generalizing contextual data to find any other requirements
- Take requirements back to customers for validation
- Abridged

- use WAAD as requirements representation
- get requirements from contextual data
- get requirements from work activity nodes

Persona: is used as a contextual data representation. A character in a work role with a user class.

• Design Informing model: -extraction

- storyboard
- social model
- user models
- work environmental model
- Hierarchical Task Inventories
- Design ontology
- descriptions of all objects, their relationships, actions



Design Thinking, sketching and prototyping

- Design v/s development

- Design paradigms (Design history in HCI)

 - engineering paradigm

 - (software engineering)

 - HIP Paradigm (Human Information Processing)

 - cognitive science paradigm

 - phenomenological paradigm

- Harrison, Tatar in (2007) propose a new HCI design paradigm called "phenomenological matrix" (we can call the design thinking paradigm) -

 - The design thinking paradigm is about social & emotional aspects of interaction.

 - And design thinking paradigm is based on the reasons for reframing the usability practice.

Participatory design : is a democratic process for entailing user participation in design.

Design thinking is basically a mindset in which the product concept and design for emotional impact and user experience are dominant. It is an approach to create a product to invoke user experience. **Apple iPod**

Ideation

- Ideation is an active, creative, exploratory, highly iterative, fast moving collaborative group process for forming ideas for a design.

- with focus on brainstorming ideation is applied design thinking

Sketching

- Sketching is rapid creation of free-hand drawings expressing preliminary design ideas focussing on ideas rather than the details

Design perspective

- ecological perspective
- Information perspective
- emotional perspective.

★ making user personas rich, relevant, believable, specific, precise

Ideation :- essential concepts

- Iterate to explore
- Idea creation vs critiquing
- setting up work spaces
- Assemble the team.
- Use ideation bin ideas to get started.

Sketching : concepts

- sketching is essential to ideation and design
- sketches are not same as prototypes
- sketching is embodied cognition to aid invention
- using the language of sketching

More about phenomenology

- Phenomenological view in HCI
- In concept of presence
- In context over time

Mental models & Conceptual design

- A mental model is an explanation of someone's thought process about how something works in the real world.
- A designer's mental model is a description of how system works as held by the designer.
- A user's mental model is a description of how system works as held by the user.

Conceptual design : A conceptual design is a manifestation of designer's mental model within the system.

- using metaphors, emotional & interaction perspective.
- using story boards
- using **Cognitive Affordance** : is a design feature that helps user in their cognitive actions
- design influencing behaviour paradigm
- ubiquitous & situated interaction

Design production

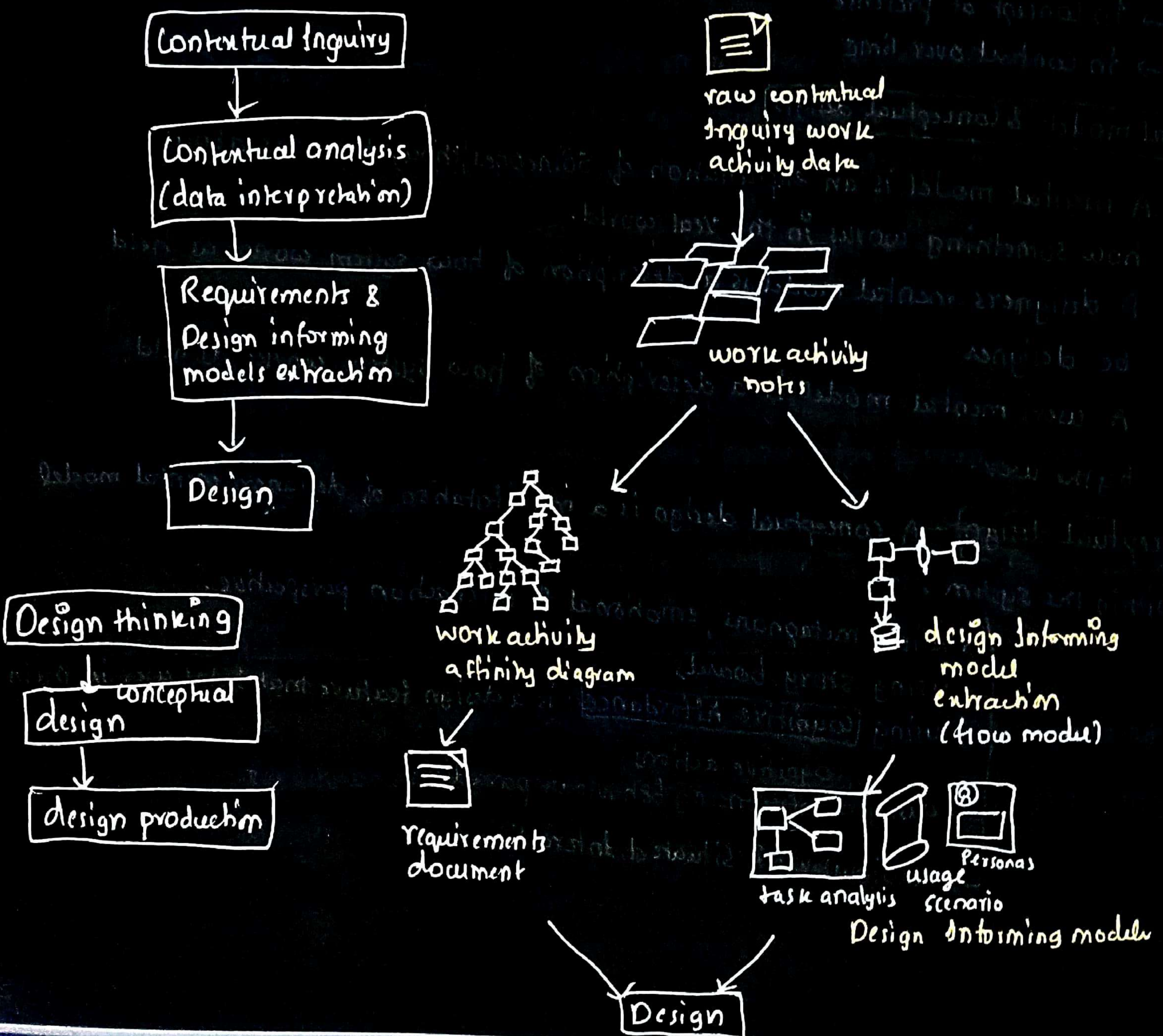
“ A wireframe is a visual, schematic, blueprint or template of a screen or a webpage design in an interaction design. It is a skeletal representation of a screen layout containing interaction objects such as tabs, menus, buttons - - etc. The focus of the wireframe is on onscreen content and behaviour but not graphical specifics such as color, font or graphics. These are used for rapid prototyping. ”

Annotated wireframes

custom style guide

“ A custom style guide is a document that is fashioned and maintained by designers to capture and describe details of visual and other general design decisions that can be applied in multiple places. Its contents can be specific to one project or across all projects on a platform or an organization. ”

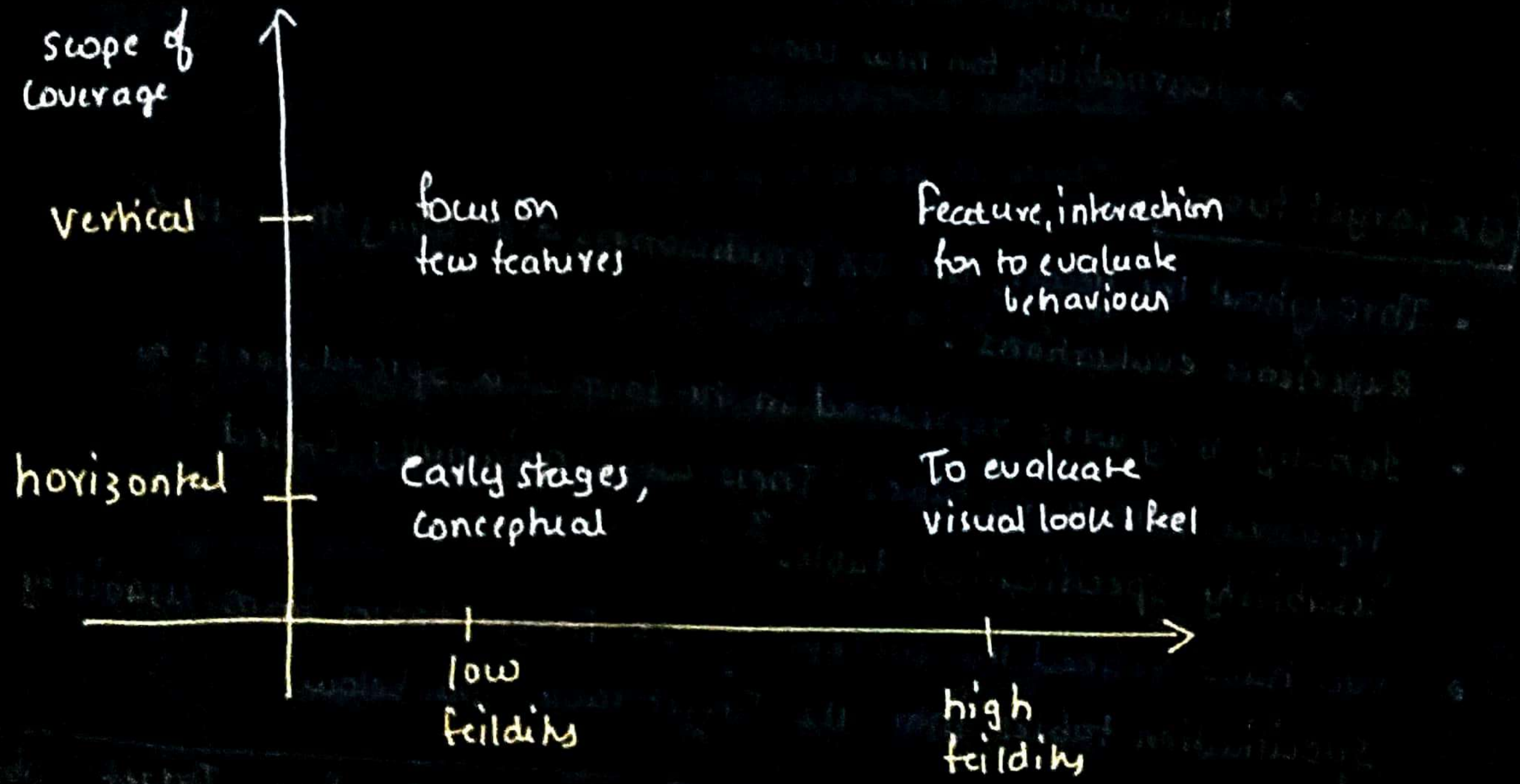
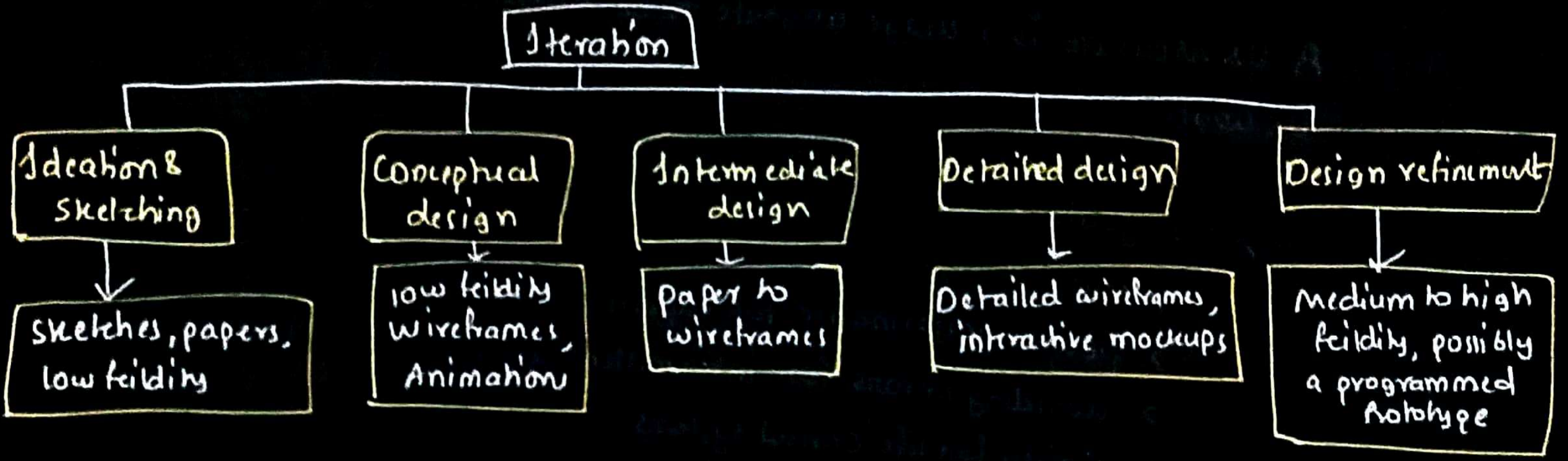
Till now what happened



Prototypes

- Based on their fidelity (how finished is the prototype)
 - low fidelity
 - medium fidelity
 - high fidelity
- Based on their interactivity
 - scripted and click through prototypes
 - A fully programmed prototype
 - Animated prototype

Kind of Iteration v/s Types of Prototypes



Software tools for prototyping

- CUA (IBM), OpenLook (NeXT), Visual Basic (Windows), Dreamweaver (Macromedia)

UX - Evaluation

A Benchmark task is a description of a task performed by participant in formative evaluation so that ux measures such as ux time on task, error rates can be obtained and compared with a baseline across performance of multiple participants.

A UX goal is a high level objective for an interaction design, stated in terms of anticipated user experience. UX goals can be driven by the business goals, and a ux goal contains UX measures.

A UX Measure is a usage attribute to be assessed in evaluating a UX goal.

→ UX goals:

- > ease of use
- > power performance for experts
- > avoiding errors for intermittent users
- > Safety for life critical systems
- > high customer satisfaction
- > learnability for new users.

UX Target tables

- Throughout the years, the UX practitioners are doing their user experience evaluations.
- Initially they were represented in the form of a spreadsheets to represent them using tables. These were originally called "usability specification tables"
- We have refined the concept of UX Target tables from usability specification tables into UX Target tables like below

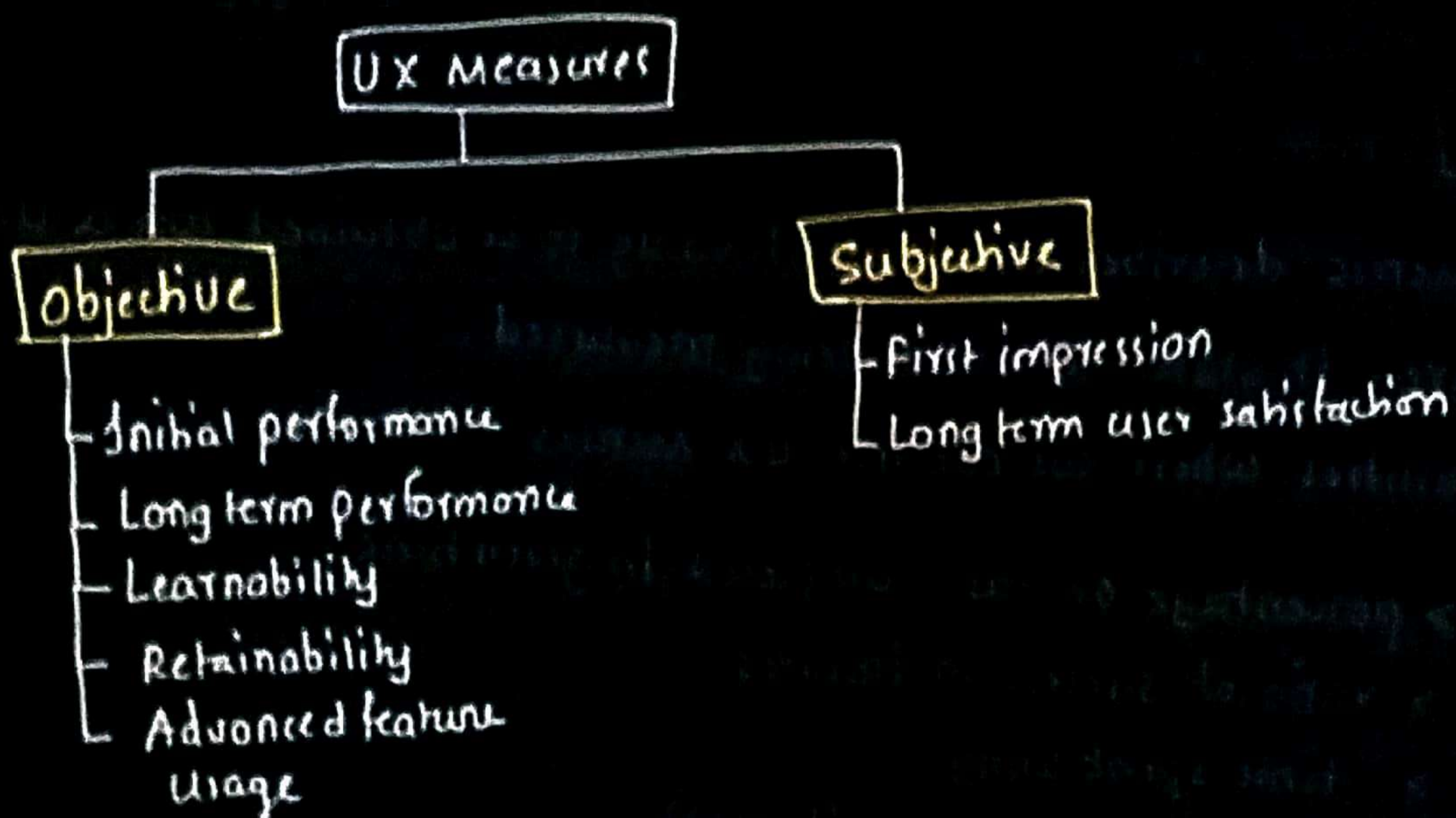
Work Role: User class	UX Goal	UX Measure	Measuring Instrument	UX Metric	Baseline level	Target level	Observed results

- As UX targets are aimed at specific work roles we label each UX target by work role.

UX Measures

- Within a UX Target, the UX measure is a general user experience characteristic to be measured with respect to the usage of interaction design.

UX Measure $\xrightarrow[\text{detail about}]{\text{implies}}$ Measuring Instruments } And each instrument has a metric for the measure you consider



Guidelines for creating effective benchmark tasks

- Create benchmark tasks for a representative spectrum of users
- Start with easy and progressively increase difficulty
- Include some navigation when appropriate
- Avoid large amounts of typing (unless it's a typing task)
- Match the benchmark task to UX measure
- adapt to already developed scenarios
- Use the benchmark in degraded modes (Lighthouse chrome)
- Don't try to benchmark everything
- Tell user what to do, But not how to do (Most important)

Using user satisfaction questionnaires

- As a measuring instrument for subjective UX measure, a questionnaire related to various user interaction design features can be used to determine a user's satisfaction on interaction design. And measuring user satisfaction is a subjective yet quantitative measure

Mapping UX Goals to UX Measures

UX Goals

UX Measures

- ease of use → Initial performance
- ease of learning → learnability
- high performance for experienced users → long term performance
- Low error rates → error related performance — etc

UX Metrics

- A UX metric describes the kind of value to be obtained for a UX measure. It states what is being measured.
- possibilities where we can use UX metrics
 - > percentage of task completed in given time
 - > ratio of success to failures
 - > time spent using
 - > fixations on screen (cursor)

Baseline level, Target level and setting levels

- The Baseline level, is the benchmark level of UX metric. It is the level which with all other levels are compared. It is often the level that has been measured for current version of system

"Measuring baseline level helps in ensuring that UX metric is measurable"

- The Target level, is the criteria for success for judging the user experience.

"As a rule of thumb, a target level is usually set to be an improvement over the corresponding baseline level."

- The Baseline level and target level make the measurement of user experience possible. But it is not always easy to set them. we can do things like.

- > let the experienced guess them
- > or take a consensus
- > adapt the global standard if any.

UX Targets help in managing user experience engineering process

- At the end of lifecycle activities it is a good time to evaluate the benchmark tasks and UX Target.
- And the most important aspect is that they help us deciding whether to continue iteration or not.

An Abridged approach :- UX goals, metrics and targets

- Eliminate objective UX measures & metrics, UX goals can be retained and evaluated against the questionnaire subjective measures (quantitative measures).
- Eliminate all UX measures and metrics and UX Target tables.
Retain Benchmark tasks as a basis for user task performance.
- Ignore UX goals, metrics, targets altogether and use only rapid evaluation methods later, producing qualitative data.



Semantic differential scale

☞ A semantic differential scale is a range of values describing an attribute that is the focus of the question in the questionnaire. The extreme values of the attribute are called anchors and other discrete points on the scale divide up the difference between the meanings of two anchors. Users choose value as an rating as an answer to the question. ☞

- Qualitative data are non numeric and descriptive data, usually describing a UX problem or issue observed or experienced during usage.
- Quantitative data are numeric data such as user performance metrics or opinions range.