

Syllabus

Elective - 1

UNIT - 1

Introduction To Design Thinking

Introduction to Design & Design Thinking:

Definition of Design Thinking, Need of Design Thinking, Features Of Design Thinking, Problem Solving and design, Design Thinking as a Strategy of innovation, Use of Design Thinking, Design Thinking attributes, Principles Of Design Thinking, Five-Step Process of Design Thinking (Emphasize, Define, Ideate, Prototype, Problem focused vs Solution focused), analysis vs Synthesis, Divergent Thinking v.s Convergent Thinking Roots of Design Thinking in Human Centric Design process.

UNIT - 2

Explore & Emphasize

Explore - STEEP analysis: Activity Systems, Stakeholder analysis, framed Opportunities
Emphasize - Observation, problem Statement, user Interviews for Empathy, Explorative

Interview, Ask 5x Why, 5 W+H questions
(Design Thinking Toolbox), Needs finding
Empathy Map.

Person Development, Customer Journey
Map.

UNIT - 3

Define & Ideate

Define - Define Point of view, "How might we" question, Storytelling, Context Mapping
Ideate Brainstorming, 2x2 matrix

Ideate - Purpose, methods, & tools - SCAMPER, SCAMPER for Ideation, SCAMPER template, Analogous Inspiration, IDEATION using Deconstruct & Reconstruct, User Experience Journey

UNIT - 4

Prototype

Get visual, Design Principles, Determine what to prototype, storyboard

Prototype : How to carry out Prototyping?
frequently used kinds of prototypes

focused experiments

- Critical Experience Prototype (CEP) & Critical Junction prototype (CFP) Crazy experiments, Backhouse Prototype, Combined Experiments - Gunty prototype

Prototyping - Paper prototyping - wireframe vs Realistic Prototypes, HTML vs. ~~HTML~~ WYSIWYG Editors, additional tools for prototyping, working with a developer, Prototype examples.

UNIT - 5

Test - Testing sheet : Feedback Capture Grid, Powerful questions in experience testing, Solution interview Structured Usability Testing A/B Testing, Design Testing with User, Exploring Visual Design Mockups choosing a Design Thinking Usability Testing, Reflect I like, I wish, I wonder Create a pitch, Lean Canvas lessons learned - Road map for Implementation Evolve - Concept Synthesis, Viability Analysis (Impact Evaluation), Innovation tool using user needs, CAP, 4S.

Prototype: proof of concept

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UNIT - I

Design Thinking

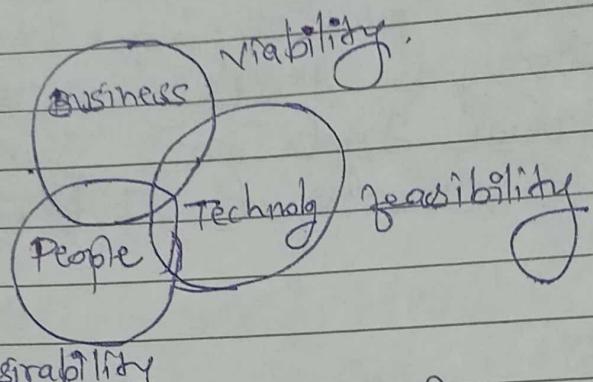
L ①

26/7 #1

"Design Thinking is a non-linear, iterative process".

26/7 #2

• 5 W. (Why, what, how, where), intuitive thinking, critical thinking, Reliability, Analytical thinking, inductive → it is based on facts, TSM,



#3 Need for Design Thinking:

- ① Customers ability to create better future for them.
- ② It does not require supernatural power.
- ③ abstracts Design Thinking by translating "design" from an abstract idea into a practical everyday tool any manager can profit from

#4 Features of Design Thinking

Discovers unarticulated user need:

uses a
(MVP)

↑
key features of
Design Thinking
↓

Collaboration
to generate new
ideas.

Provides flexibility
to change paths.

UNIT-6

Reimagining the Trade Show Experience at IBM, Redesigning the Customer Contact Center at Toyota, Social Networking at McKesson Health, Rethinking Subsidized Meals for the Elderly at the Good Kitchen:
~~THE SOCIAL PROBLEM.~~

Design Thinking in Healthcare with IDEO,
Design Thinking Transformed Airbnb, IBM
Design Thinking:

A Framework to Help Teams Continuously
Understand and Deliver - UBER EATS.

IEEE Spring Research papers
Curiosity: knowledge gaining techniques

Date _____
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② 1/8/22 Innovate:- white spot in darkness;

#1 Use of Design Thinking

#2 Design Thinking: Attributes.

- ① Ambiguity
- ② Collaborative
- ③ Constructive
- ④ Curiosity
- ⑤ Empathy
- ⑥ Holistic
- ⑦ Iterative
- ⑧ Non-judgmental
- ⑨ Open mindset

Collaborative:- Working Together.

Holistic :- Look at the bigger / overall development

Constructive :- Create new ideas or using older ideas

Ambiguity :- Soln may not exist.

#3 Principles of Design Thinking

#4 Five-step process of Design Thinking

- ① Emphasize
- ② Define
- ③ Ideate
- ④ Prototype
- ⑤ Test

① Emphasize : Research your user's need.

② Define : State your User's Needs and problem
(Artifact)

③ Ideate : Challenge assumptions and create Ideas.

Lead with user needs, Invite multi-functional teams, Lay down the rules, Separate idea generations and evolution, Think about how to construct ideas.

Personas:

TCS ion

Design → Agile Methodology.

Date _____

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Learn to communicate the ideas.

Step ④
④

Ideate :

Prototype : Prototype start to create solutions.

- This is an experimental phase.
- The aim is to identify the best solutions for each problem found.

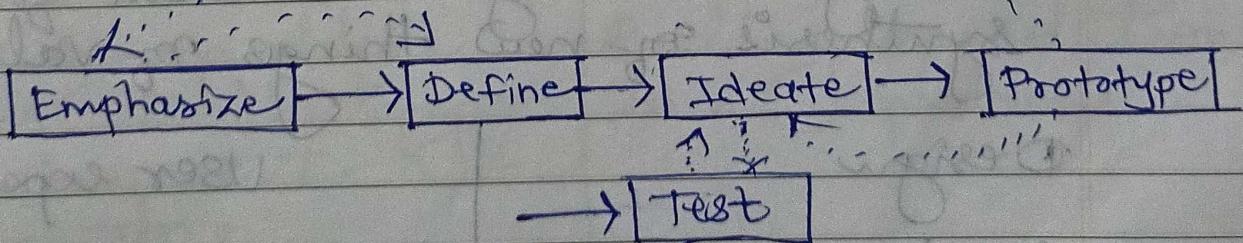
Q. how to built the representation of solution?

- Team should produce some inexpensive, scaled down versions of the product.

⑤ Test : Try your solutions out.

Q. how to gather feedback from real and target users?

* Design Thinking interpretation



#6 Thinking : of solution based thinking

- ① Design Thinking vs Scientific Method
- ② Problem Focused vs Solution Focused
- ③ Analysis vs Synthesis

• Design Thinking Vs Scientific Method.

- Design Thinking and scientific methods both approaches for solving problems, learning & developing knowledge.
- Design thinking is based on the talent of designers who synthesize solutions.
- Scientific methods are based on empirical or measurable evidence and principle of reasoning.

• Design Vs User experience

- Design is a generic term for the synthesis of new things of value.

Design

Defn: Synthesis of new value

Drivers: aesthetic Corporate

Strategy, Princible Ideas, Human factors, Customer satisfaction.

User experience

Synthesis a new value
the eyes of customer

Human factors, Customer satisfaction.

8/8/21.

(5)

#1 Problem focus or solution focus.

(1) what's wrong.

what's wanted.

(2) what needs fixing.

what's working

(3) Blame & control

Progress

(4) Causes in the path.

Influence

(5) Complications

Simplicity

(6) Expert knows best

Collaboration

(7) Designations

Actions

(8) Deficits and weaknesses

Resources and strengths

#2 Analysis and synthesis.

Analysis (playing
with data).Synthesis (playing
with solutions)Defn: Breaking problem
down to identify
its component
parametersBuilding up solutions
to a problem.example: market study of
mid-sized luxury
car.Building models or prototype
cars of watching customers
interact with them.

Divergent Thinking

Empathize & Define

② Create Options

③ Big picture

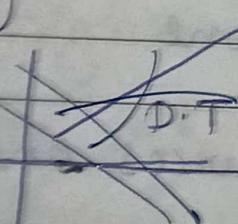
④ Creativity

⑤ Innovative

⑥ Uncertain

⑦ Synthesis

⑧



Convergent Thinking

Create, prototype, select

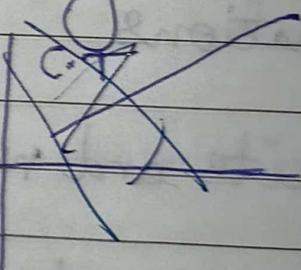
Final picture

Logical

Comparison

Clarity

Analysis



UNIT - 2

Explore and Empathize.

8/8/2022

- Empathize → Understand the problem by customer.
- empathy → first phase of problem.
- explore → prerequisite of Design Thinking.
- Stakeholder Analysis: university is Stakeholder of education.
- Deep analysis:
 - ① Deep analysis is a tool to map the external factors that impact an organization.
 - ② Deep analysis looks at an external factors that influence trends, allowing you to analyze the past and predict the future.
- External factors:
 - ① Political factors
 - ② Economic factors
 - ③ Social factors
 - ④ Technological factors
 - ⑤ Legal factors
 - ⑥ Environmental factors

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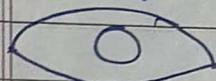
Empathise

2

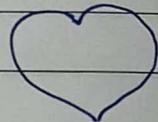
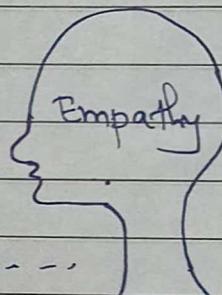
* To emphasize you:

- Observe: View users and their behaviour in the context of their lives.
- Engage: Interact with and interview users through both scheduled and short intercept encounters.
- Immerse: Wear your user's shoes. Experience what they experience for a mile or two.

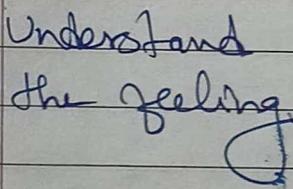
* Empathize :



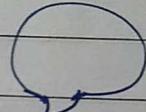
See their world



appreciate them as human beings.



Understand the feeling.



Communicate your understanding.

* Observation

Exercise: When observing and engaging, you may want to pay attention to things such as:

- Person details:
- Motivations.
- Interactions
- Interesting Stories
- frustrations
- Remaining Questions.

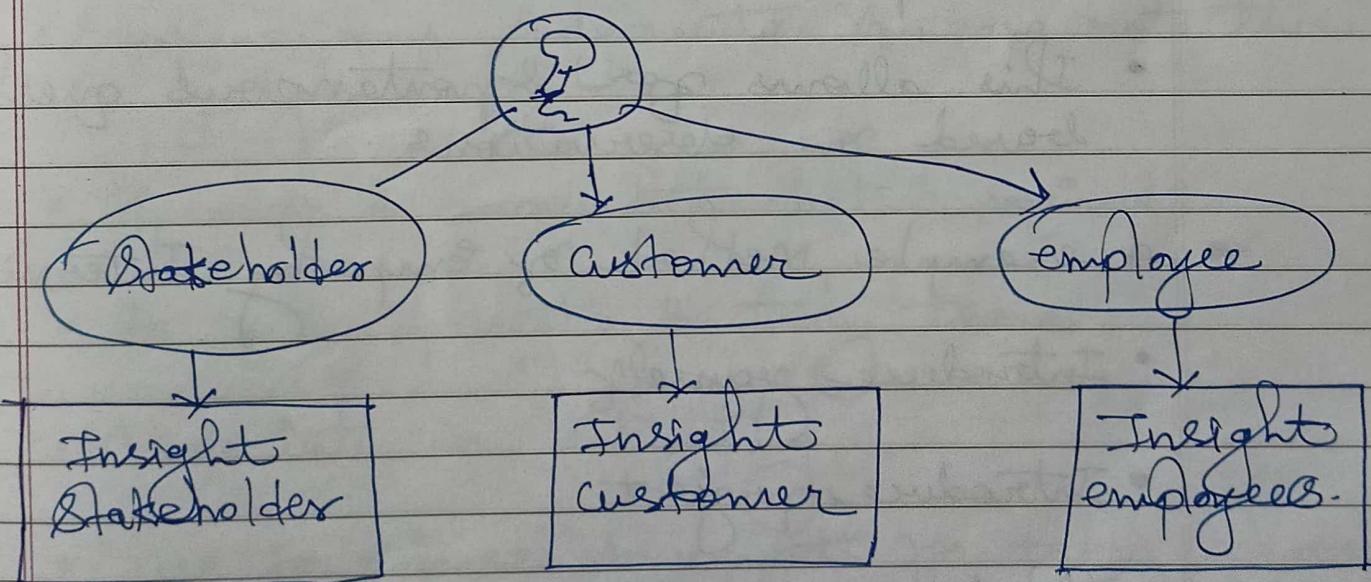
* frustrations : What pain points, barriers, confusion, or errors and did people experience?

* Problem Statement :

Problem Statement are definitions of the actual problems faced by consumers or people & reframing them in human-centric ways.

User Interviews - Interviews for Empathy -

Interview -



* The Importance of Empathy Interviews .

mixto.com → empathy map.
draw.io → idea map.

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quadrants

- * To observe user design empathy map, generate user profile/persona and customer journey map.

Lab Practical

29/8/2022.

User Interviews - Interview for Empathy

- * 5W's question

Importance of Empathy Interviews.

- Speak from heart.
- They focus on the emotional & unconscious aspects of user.
- This allows for spontaneous questions based on observations.

An example method of empathy interviewing

- Introduce yourself.
- Introduce project
- Shift your focus for the interviewee (ask Name, where they come from)
- Build Report.

- Encourage stories
- Don't suggest answers to your questions
- Inconsistencies & contradictions
- Observe non-verbal cues, such as use of hands, facial expressions
- Don't suggest answer to your questions

* Question Statements:

* Things to Remember:

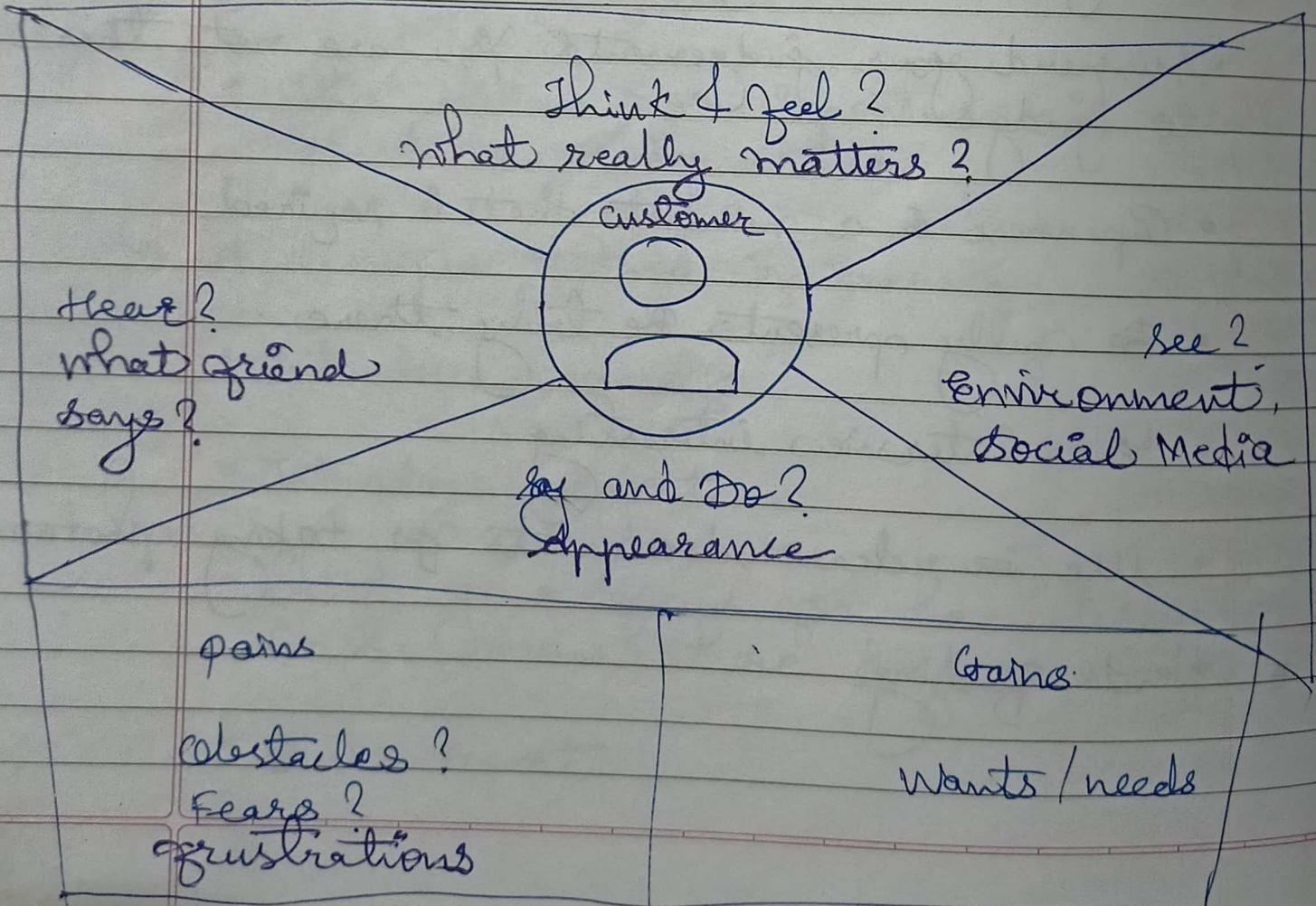
- Always have a beginner's mindset.
- Suspend your judgements. You are not there to judge.
- Openness is a mindset that is required:
- Be fully present. Be truly there.
- Make interview interesting.
- Use in release documents for taking photographs

Needs finding

- suggested Deliverables for the Empathy Stage
 - user persona.
 - empathy map.
 - storyboard.

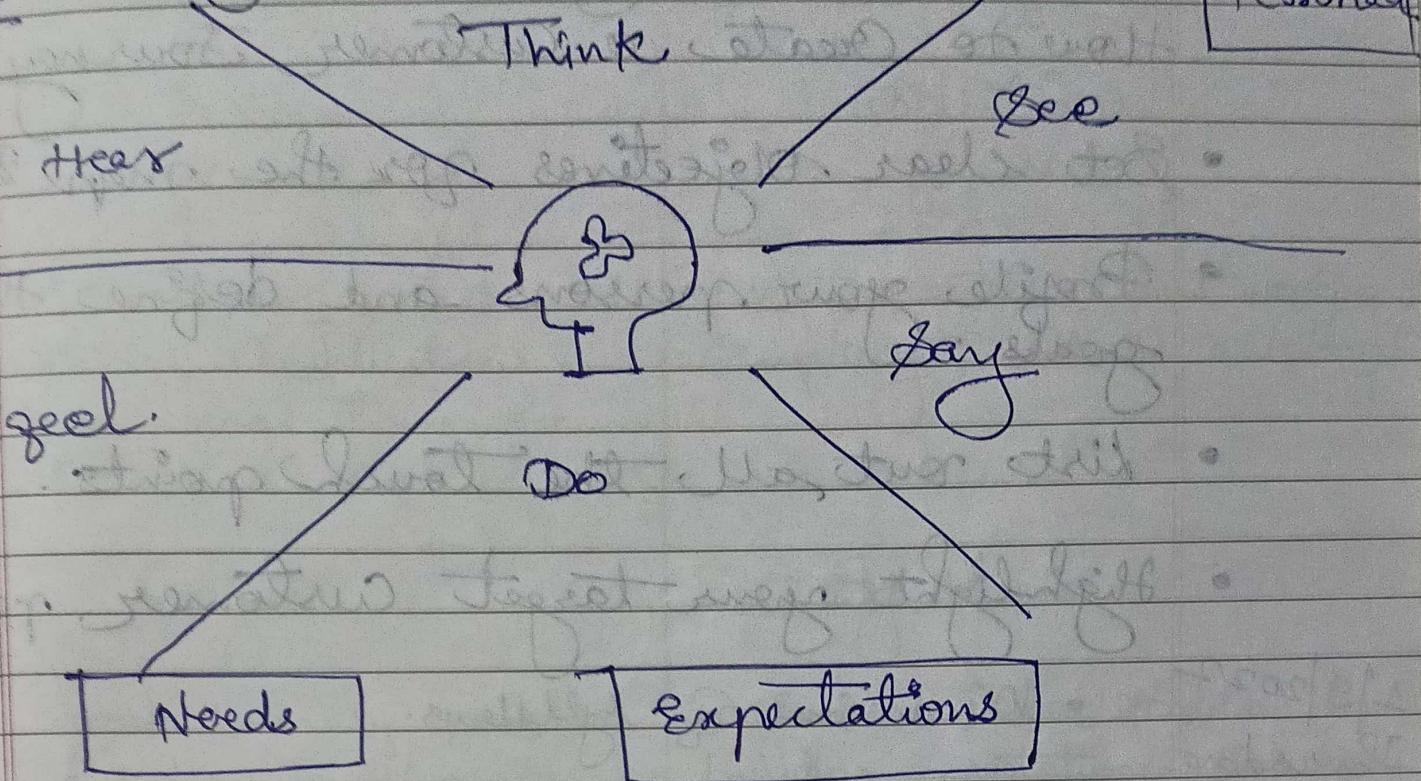
④ Empathy Map:

- who are we empathizing with?
- what decisions do they make?
- what do these user see?



②
18/2020
Tuesday

Empathy map example:



③ Empathy map Canvas:

* Persona Development

Buyer Persona:

① Personal Info

③ Challenges:

② Professional goals

④ How can we help?

④ Customer Journey Map.

Synchronous Javascript & XML languages.

* Customer Journey Map:

How to Create a Customer Journey Map?

- Set clear objectives for the map.
- Profile your persons and define their goals.
- List out all the touch points.
- Highlight your target customer personas

1/9/2022

Thursday.

① Breakthrough idea →

② Empathy → initializing phase, understanding the problem.

* Output: Customer Journey Map, Empathy Map

Bloom's Taxonomy → 6 levels

* Online shopping C.I.W

Stages of journey

Activities

feelings

very happy

overall satisfied

unhappy
Experiences

Customer - expectations.

UNIT ①

Problem & Solution focused difference?

Q1.

→ Problem
focused

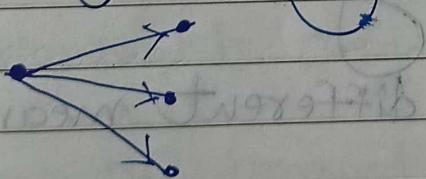
- ① What's wrong, what needs fixing, complications, weaknesses, Blame & control.

Analysis

- ② Break down of problem in order to solve it.

- ③ Analysis is related to scientific methods.

Divergent Thinking,



Create new options.

Big picture

Creativity
synthesis

Solution
focused

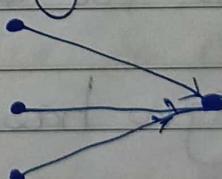
- ① What's wanted, what's working, Simplicity, actions, collaboration.

Synthesis

- ② Seeks to solve problem by building prototype solutions.

- ③ Designing is related to design profession such as architecture.

Convergent Thinking



Select options.

Small picture

logical
analysis

Dr.T = Analytical + Intuitive

articulate → good at expressing ideas clearly.

Op - Empathize:

To create meaningful innovation,
you need to know your users and care
about their lives.

Keywords: Innovation, Engage, Immense,
Explore, Interact, manifestations, inter-
articulate,

insights: power of seeing into a situation

UNIT 1

Design Thinking:

- Empathize with people's need
- Collaborate
- Inclusion

* Need for Design Thinking.

- Design has a lot of different meanings.
- For solving problems systematically.
- DT can do organic growth and innovation as like TQM. Solid for quality.

intuitive — able to understand something because of feeling rather than facts or proofs

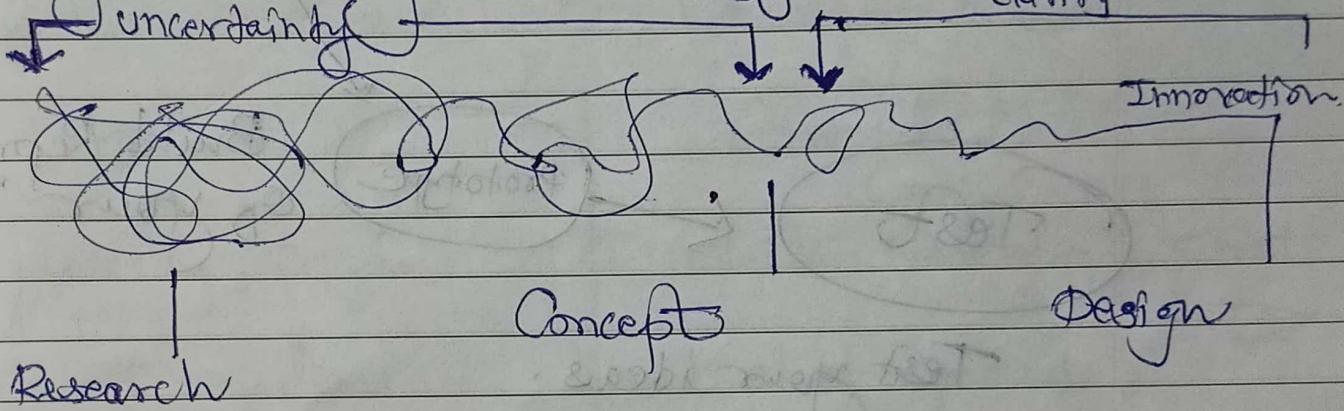
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Example:

Business Perspective:

- DT is practised at varying levels with different talents and capabilities.
- DT is the tool for growth factor.

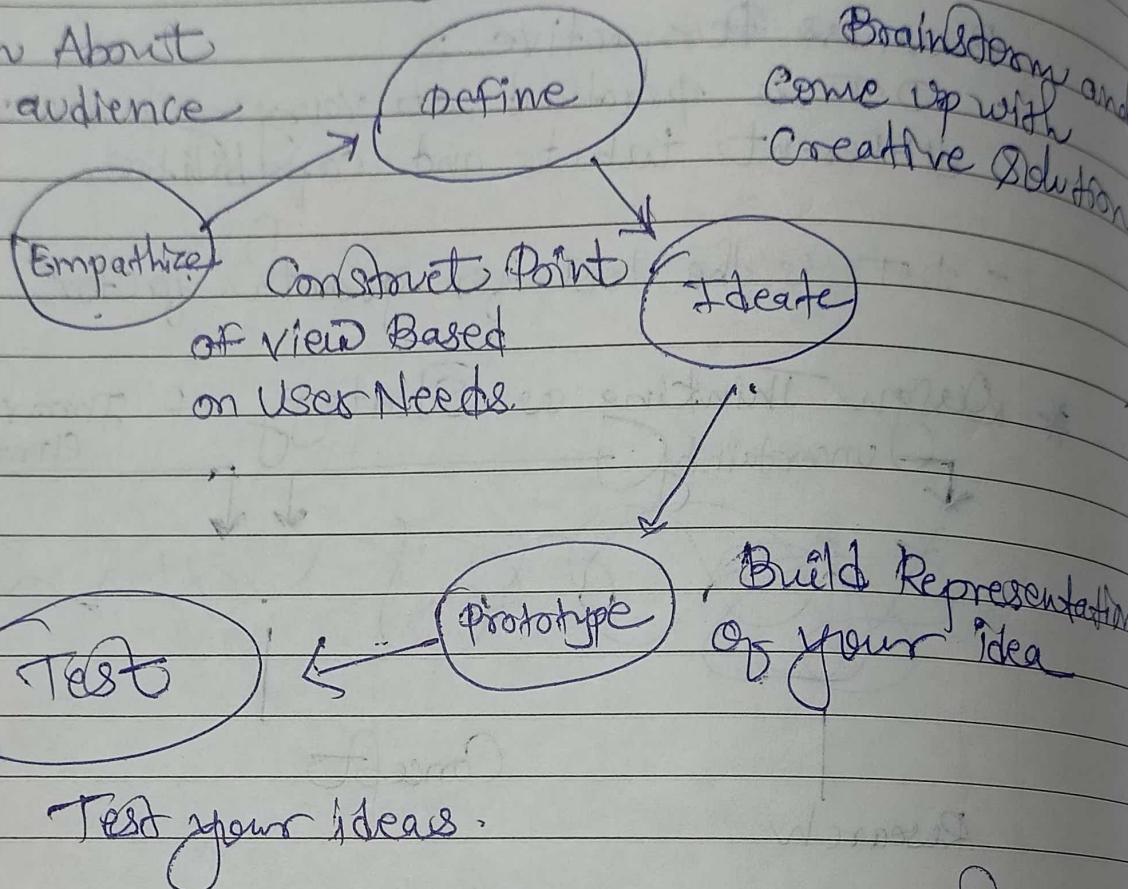
* Design Thinking as Strategy of Innovation



- ① Designing is more important than creating products and services.
- ② It is applied to systems, procedures, protocols
- ③ Designing is creating new value to companies
- ④ Focus of innovation is shifting from engineering driven to design-driven, from product centric to customer-centric, and from marketing-focused to user-experienced focused.
- ⑤ For an increase in number CEOs, DT is core effective strategy development.

Design Thinking Process

Learn About Your audience



Test your ideas.

30/9/2022 Design Thinking Thursday.

① Based on talent of designers who synthesize solutions.

② It is more innovative.

Scientific Method

① Based on measurable evidences and principles of reasoning.

② It is less innovative based on principles.

Problem focused

What's wrong

Expert knows best

Solution focused

What's wanted

Collaborative

Analysis

- ① It is playing with data.
- ② Breaking down problem to identify its components

e.g. market study of luxury cars

Synthesis

- ① It is playing with sol.
- ② Building up solution to a problem.

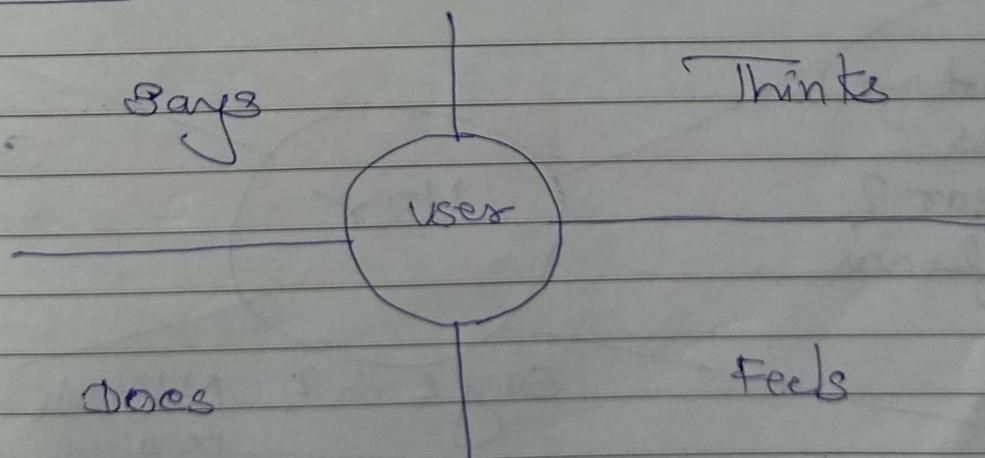
e.g. Building models of prototypes cars.

Divergent

- ① Empathy, Define
- ② Create options
- ③ Uncertainty
- ④ Synthesis

Convergent

- ① Ideate, Prototype, Test
- ② Select options.
- ③ Clarify
- ④ Analysis



* STEEP Analysis / PESTLE

Political : Government, Organization
factions Stability / instability -

Economic : Economic Growth, unemployment,
inflation, problems

Social : Income distⁿ, fashion, labor
factors mobility.

Technological : Inventions / development,
factors Rate of change in technology.

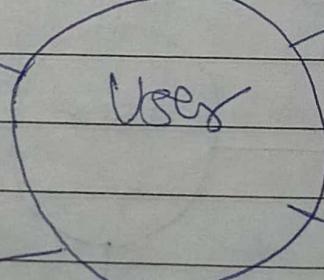
Legal : Tax policies, Safety measures
factors

Environmental : Environmental regulation &
factors protection.

Think And Feel ?

What friends
boss

Hear ?
influencer



See ?
Environment

Say & do ?, Attitude in public
Behaviour

Pains
fears
obstacles.

Wants / needs
Grains
Obstacle

means of
money

Motivation | Search for ~~Browser~~
websites

wants to buy
things: a gift | search of Google | clicks 1st ads result | Brows and go back again

Browse the site

Checks out ongoing deals & hot sale products.

Envelope Products

Opens a product page to check product details

Pay

Process to pay preferred product

Solve problem by technical solⁿ; expesly
Michael Hornick.

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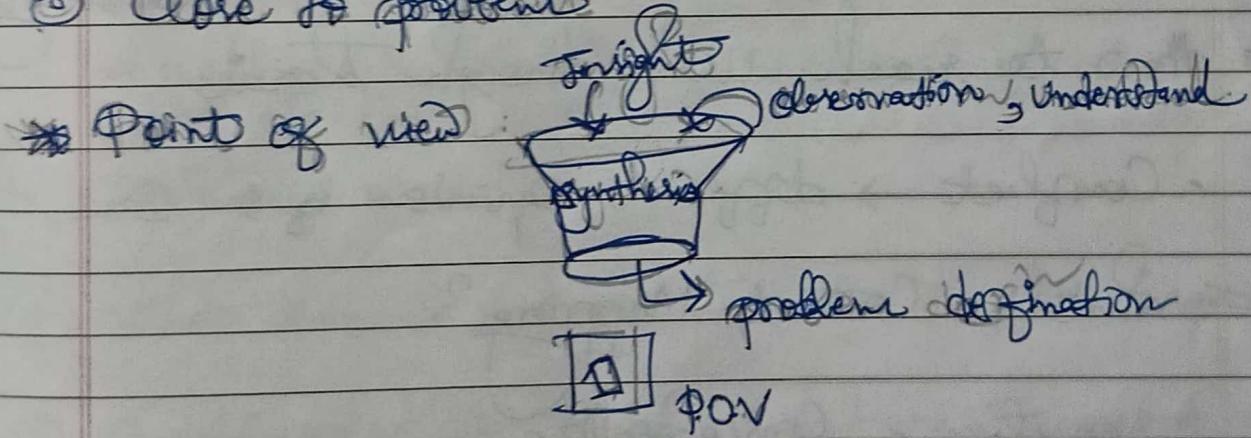
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UNIT - ⑥

Define & Create.

- ① Define - Brainstorming, Storytelling, Insights, Design
- ② Ask for survey.
- ③ Views of Stakeholder, point of view, optimize solⁿ
- ④ Context mapping : perception related entity
- ⑤ priority
quantity

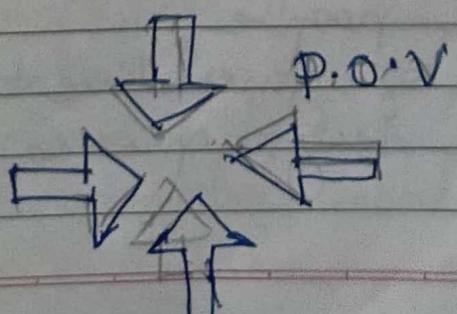
⑤ Close to problem



* Context Mapping :

* Success.

* Point of View



Brainstorming → Bring up all ideas.

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Minimum Viable Product

- * Wide range of SOW → narrow optimize SOW
- * HMW - How Might we?

1. UX (User defined design), Design research to understand your user.

* Sketches & Elements

8/9/2022, Tuesday Ideation → first step towards the solution.

- * Design Challenge, Designer Create Personas
- * In User experience (ux) design accessibility < usability
- * How to reach users through stories
 - Conflict → different opinion on same thing.

2/9/2022, Monday What is Content Mapping?

- * Sensitize, Conceptualize
- * Content Mapping can be used for various purposes in the design process.

- ① Sensitize people
- ② Make use of generative tool. → GWH, HMW
- ③ Used for design process.

Problem Solving → Design Thinking,

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Regeneration of new ideas; new activity

* What is ideation

more

(Impact on market)

- Breakthrough idea → By Conceptualizing the Idea.

Design Thinking → New approach for Software development (tool)

* How ideation works -

* Brainstorming → maximum no. of idea, quantity

Scampers → Substitute, Combine, Adopt
Modify, Adapt to another use
Eliminate, Reserve

equally → Substitute

Questions need to

① What can I substitute to make improvement

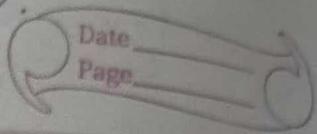
② Combine what Ideas, features, processes or components can I combine?

③ Adapt what process, features, components can I adopt

④ What can I make larger or smaller

⑤ What else it can be used for?

prototype → proof of model/concept.



Who else could use it?

eliminate → what would happen if I remove a feature or part of it?

Inverse, how can we rearrange current states for an improved solution?

What would happen reversing the processes?
Why this brainstorming techniques works?

- Improve Current Process
- Optimize Copy if the blocks do best?
- Build a dream campaign that effectively which will lead to SCAMPER

2/9/22

Tuesday. Deconstruct → separate main parts and constant new parts

Reconstruct →

SCAMPER →

How to use SCAMPER for Ideation

Step 1
Step 2,

Should be given different object
Generate 10 most idea using Scampy canvas.
There is no sequential flow while using Scampy?

- ⑥ Each team member has an idea (dictate on the relevant one idea per post its used). Compete to see which one generates the most ideas within the given time. Within 10 minutes 10 peoples are generate 50 ideas. Cluster the idea by things / themes.
- # Ideation using analogous inspiration → To generate various Ideas / variety.
- # How to use analogous inspiration for Ideations.
- * Description of Google is an american MNC specialized in Internet related Services & products these include online advertising technology, search, cloud computing, Software & hardware.
- * Apple is an American MNC for designs development and sales consumer electronics, computer Software & online Services.
- # Ideation using Deconstruct & Reconstruct.
- Deconstruct is process of taking a product or Service & initially breaking it down into essential parts like Components, key elements, significant features & then reconstruct to imagine new possibilities by combining features & characteristics.

Q. When do we Reconstruct & Deconstruct
To generate innovative & creative ideas.

Step ① → Identify 5 different brands
product company for 5 teams.

Step ② → Using large white paper list minimum
of 10 essential elements of given brand
by deconstructing each brand.

Step ③ → Team A is to discuss & select 5
essential elements of circle.

Step ④ → Using 3x5 sticky notes & when every team
member is to reconstruct 2/3 imaginary
new products with 5 picked essential
elements.

Step ⑤ → Each team member has to make
them share stick on the white paper
and one idea for best.

Step ⑥ → Using this method generate as many
ideas as possible.

Step ⑦ → Draw the new product on the white
paper.

UNIT - 4.

Prototype:

- CEP, CFP → Divergent Thinking
- @ Discussing with customer we can prototype
- Focused experiments : Critical Experience Prototype and Critical Function Prototype
- Some information about this type of prototype :

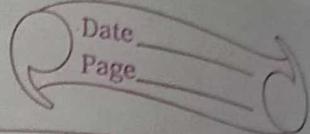
These CEP, & CFP are carried out on early stage in project. When the first step of the understand and observe phases have been completed.

When initial contacts have been made in the form of interviews the design he wants to learn even more about the user.

CEP and CFP can be performed several times over the design cycle specially if the whole problem yet understood.

CEP and EFPs make a sense when critical elements for experience or function are still unclear or need to be questioned.

Breakthrough Idea:
Unorthodox: unusual
Diagrams



* Expert tips :

* Crazy Experiments — Dark Horse prototype

17/10/2022 • orthodox

Monday.

oral

Dark horse → divergent types of thinking so lies behind

* Imagining the future - Vision prototype

to create vision or later solution based on all previous findings and testing

① To develop first vision or how the problem is solved.

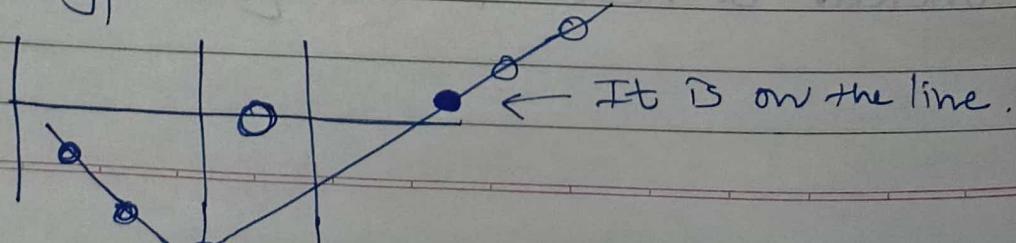
② Create a vision of what is to be marketed in the future.

③ Make sure that the vision solve the identified needs and problems of the user.

④ Design the transition from the problem exploration to the solution.

* Prototype → to generate multiple ideas.

* Function with a first function - functional (system) prototype.



$X \rightarrow$ finish \rightarrow MVP

X - is finished.

vision prototype

Converge

Diverge

Converge

Diverge

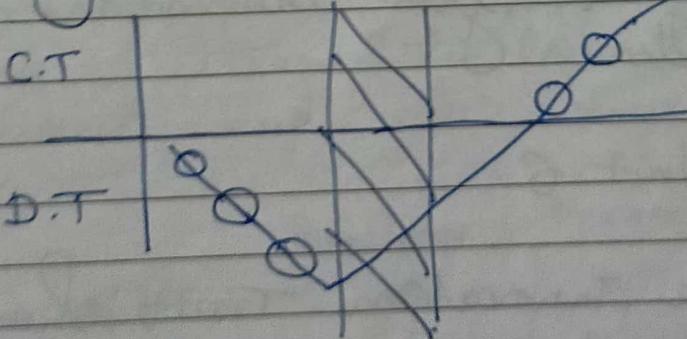
Converge

X -finished product is the phase in which the elements or some functions required for overall functionality are implemented and realized. The goal is to overall system on hand after the conclusion of phase where main functionality have be specified to greatest possible degree.

While both the vision prototype & the functional prototype focus on the solution of the overall problem.

» (Hopefully) at the finish - final prototype.

final prototype



almost product ready, 100% ready

Exit the prototype phase & early innovation phase.

- Reduce all required elements to what is essential.
- Create an elegant, optimal sol'n to the needs & problems.

* Exploration Map

31/10/22

Monday

Unit 5

- ① Testing sheet, feedback capture, powerful questions in experience testing
- ② Solution Interview, Structured usability, design testing with users.
- ③ Design mockups, choosing design - Testing.
- ④ Reflect, I like, I wish, I wonder.
- ⑤ Create a pitch, learn canvas lessons.
- ⑥ Viability analysis, innovation tool using user needs

Unit 8.

- ① Destructive Innovation - Trait show, experience at TATA, redesigning the customer contact centre at Tata.
- ② Social Networking at me you health, Rethinking subsidized means for the elderly at the

good kitchen.

Design Thinking in healthcare at IDEO, Design Thinking transform AIR VNP, IBM Design Thinking

The framework to help teams continuously to understand and deliver examples UBER EATS.

- * Critical Function Prototype : Creates an opportunity for enhancing the performance of product.
- * Dark horse Prototype : It prevents convergence of ideas and forces teams to take fresh look at problem space.
- * Critical Experience Prototype : Involves putting together Experience that helps you to answer an important question.
- * Funky Prototype : This allows the Design Thinking Teams to leave the familiar environment and new ways. Develop without limits

knowledge ↑
↓ information
assumption

axis represent a decision criterion

Paranoia — conn't → Trust

	anxious workers	where great teamworks happen
	Paranoid users	Trusting goals

Name : Yashraj Deepak Devrat

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Subject: Elective 1 :
Design Thinking

Prelim Examination 2022

Q2.

A

- i. Reconstruct of idea is based on experience of designing products by imagining new possibilities and combining features and characteristics.
- ii. Deconstruct of idea is taking of product or service and breaking it down into sub parts and key components and using it to build the product.

Follow the below steps :

Step ① : Identify 5 different products and build five teams to work on.

Step ② : Take white paper and list essential points by deconstructing it.

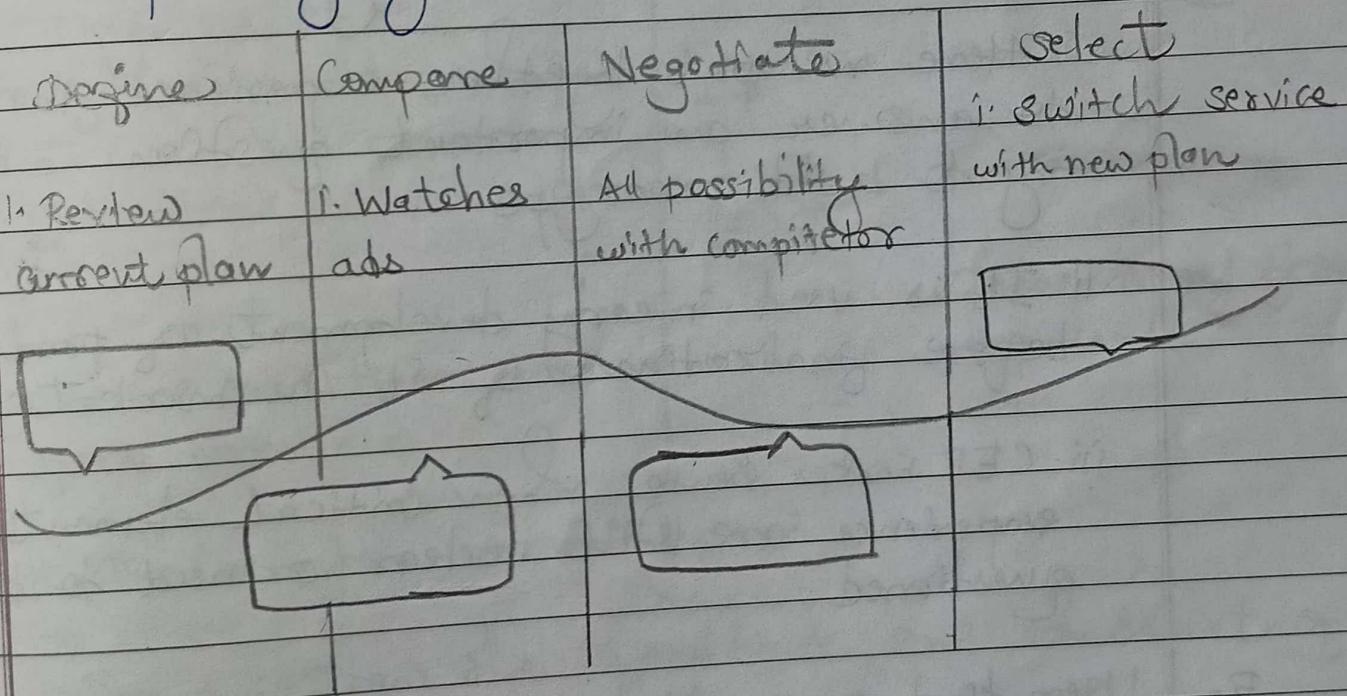
Step ③ : Do discussion in teams and generate new idea.

Step ④ : Using leader generate new possible ideas

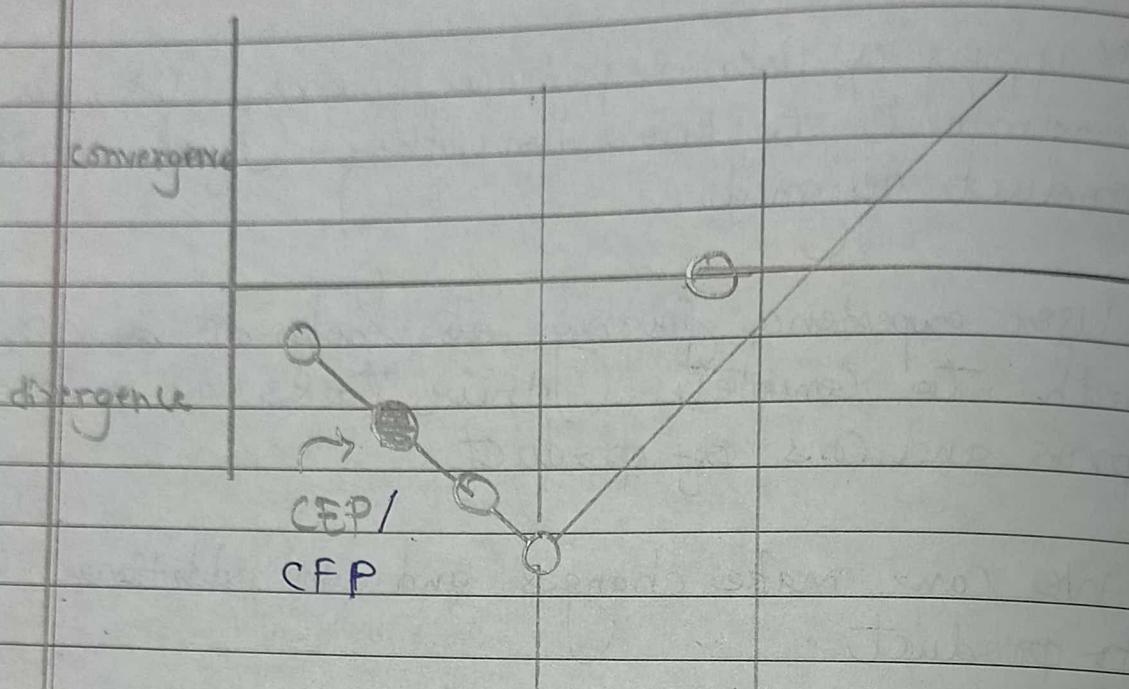
Step ⑤ : Draw the new product on white paper.

- Q3. B i. Mapping of user experience journey (UX) is important to know how they feel about their product designed.
- ii. User experience journey also helps to visualize the path to complete their tasks and understand pros and cons of product.
- iii. We can make changes and add additional functionality to product.

Example: Buying Cell phone



- Q3. b. Focused Experiments are Critical Experience Prototype (CEP) and Critical Function Prototype (CFP).



① Critical Experience Prototype :

- i. Here we put together experience that you to answer an important question and then try to build prototype.
- ii. It is used in early development of product before finalization of it in market.
- iii. CEP makes sense when critical elements for experience are still unclear or need to be questioned.

B. User kind of prototypes are as follows:

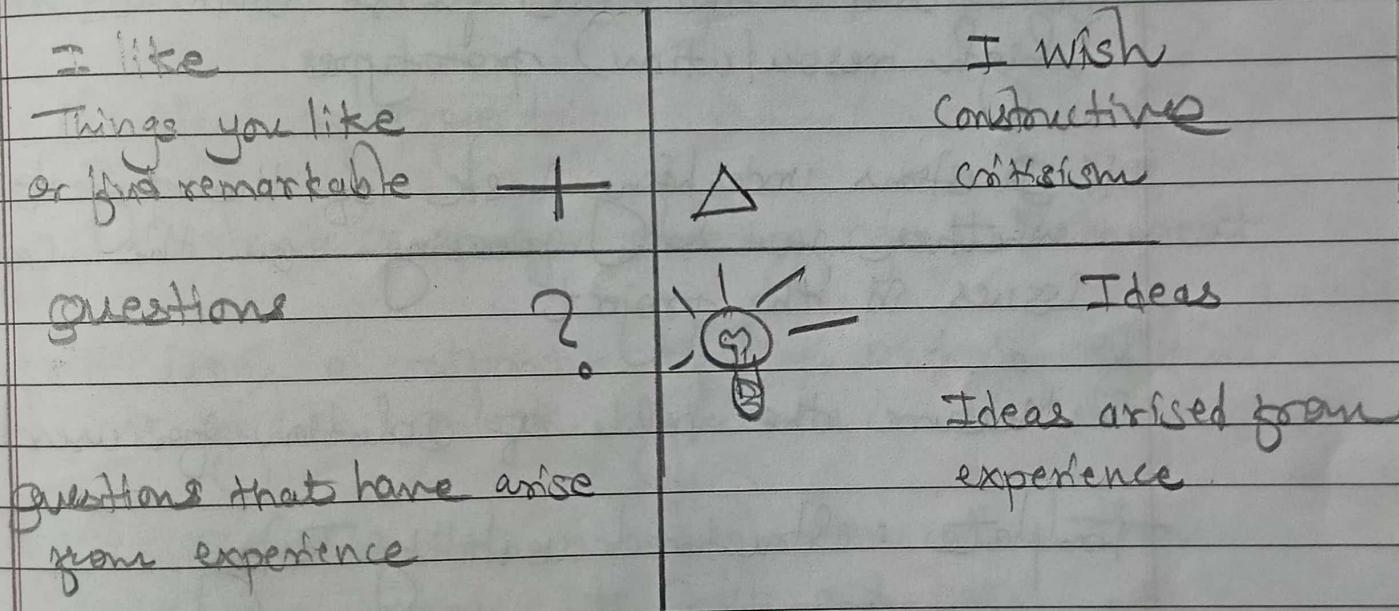
- ① Dark Horse prototype : i. It lies below CEP .
- ii. Dark Horse prototype , you can test the reaction of the user to unusual approaches to solution

② Funky prototype: This allows design thinkers to leave the familiar environment and think in new ways and develop without limits.

③ Critical Function Prototype: It creates an opportunity for enhancing the performance of products.

g5.

- A. i. It is used to test prototypes quickly using 4 defined questions.



- ii. Process to use prototype :

Step 1 : Draw the feedback on ~~one~~ sheet of paper.

Step 2 : Begin with test seeing experience of the prototype.

Step 3 : Ask the tester to ~~not~~ think aloud.

Step 4: Fill the fields of grid with thoughts.

Step 5: Ask why? (5x why) to understand even better.

Step 6: Collect the feedback capture grids from various interviews and workout similarities together with team.

B Solution Interview:

i. As the name suggest Solution interviews are tool used in the test phase with advanced (high resolution) prototypes.

ii. Questions underlying task of the project, examine whether you are focusing on the crucial issues in the project.

iii. Measure the value of solution for user.

Template : Structured usability Testing

	Planning Phase	Test Phase	Completion Phase
① Concept		Welcome	Evaluation of data
② Location		Declaration of consent	Documentation
③ Role assignment		Explaining setup.	Possibility workshop
④ Pilot test		Conduct test	presentation with stakeholders.

97.

B.

UBER EATS : Case Study :

① Objectives :

- i. Provide food delivery platform that make good food with good quality & less time.

② Problem Statement : To have super app where user can order almost anything , from car ride to meal to groceries .

③ Need of project :

i. Customers prefer ordering from Restaurant

ii. Using a responsive online ordering system is key to unlock high sales .

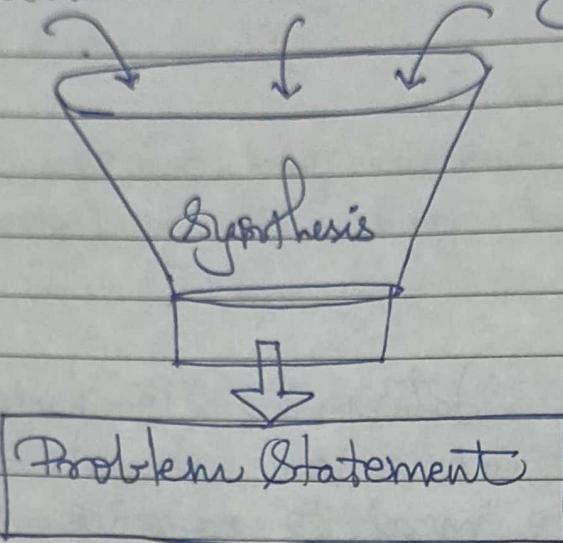
iii. Online orders are high than value than phone orders . Its fast and easy .

④ Conclusion : It failed due to giving high discount and no proper teamwork and management .

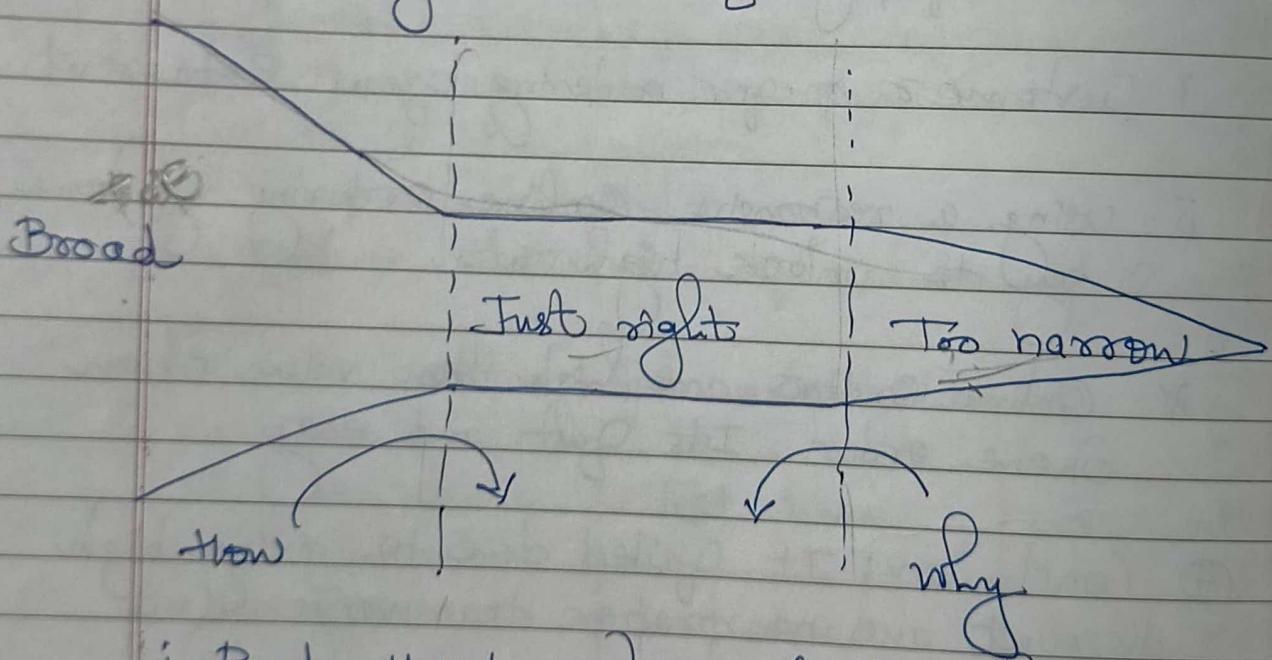
Question with Answers

Q1. Explain P.O.V (point of view)

→ Understand Believe Insights



Q.2. How might we? question



- i. Read HMW questions alone & ask if the team is inspired by the questions to find many sol's.
- ii. If questions are narrow expand focus ~~and~~ and if questions are broad then ~~expand~~ narrow the focus by asking how?

Storytelling → Share knowledge, connect
(prototyping tool) with people, feedback to
prototype come alive

Date _____
Page _____

iii. Once HMI questions are rolled out, ideation phase begins. Start for example with an open brainstorming session that generates initial ideas.

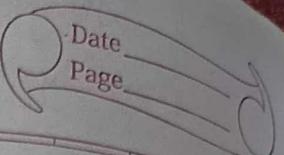
q3. What is Storytelling?

- i. Start with I would like to present my insights ideas, & solutions to the members of my team
- ii. It is sharing of knowledge and connecting with people.
- iii. After performing Storytelling feedback to design prototype comes alive.

q4. What is Content Mapping?

- i. Dealing with content for example a problem statement
- ii. Use of this tool makes explicit which are implicit.
- iii. Mapping helps us to give structure to the findings from the observation.
- iv. By using this tool we are able to gain unexpected insights, understand the overall picture and unlock parts of the process that are important to customer.
- v. Sensitive & conceptualize people. get clear picture.

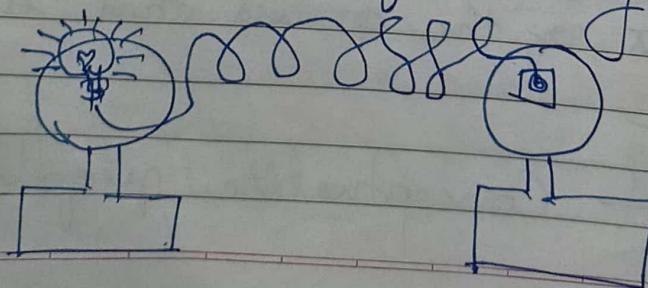
Goal isn't perfect its lots of ideas



- Q5. How is Brainstorming applied in ideate phase.
- i. It is classical way of ideating is brainstorming.
 - ii. Here there is generation of new ideas where quality is imp.
 - iii. Brushing up all the ideas. Here there is no limitation all ideas are welcome.

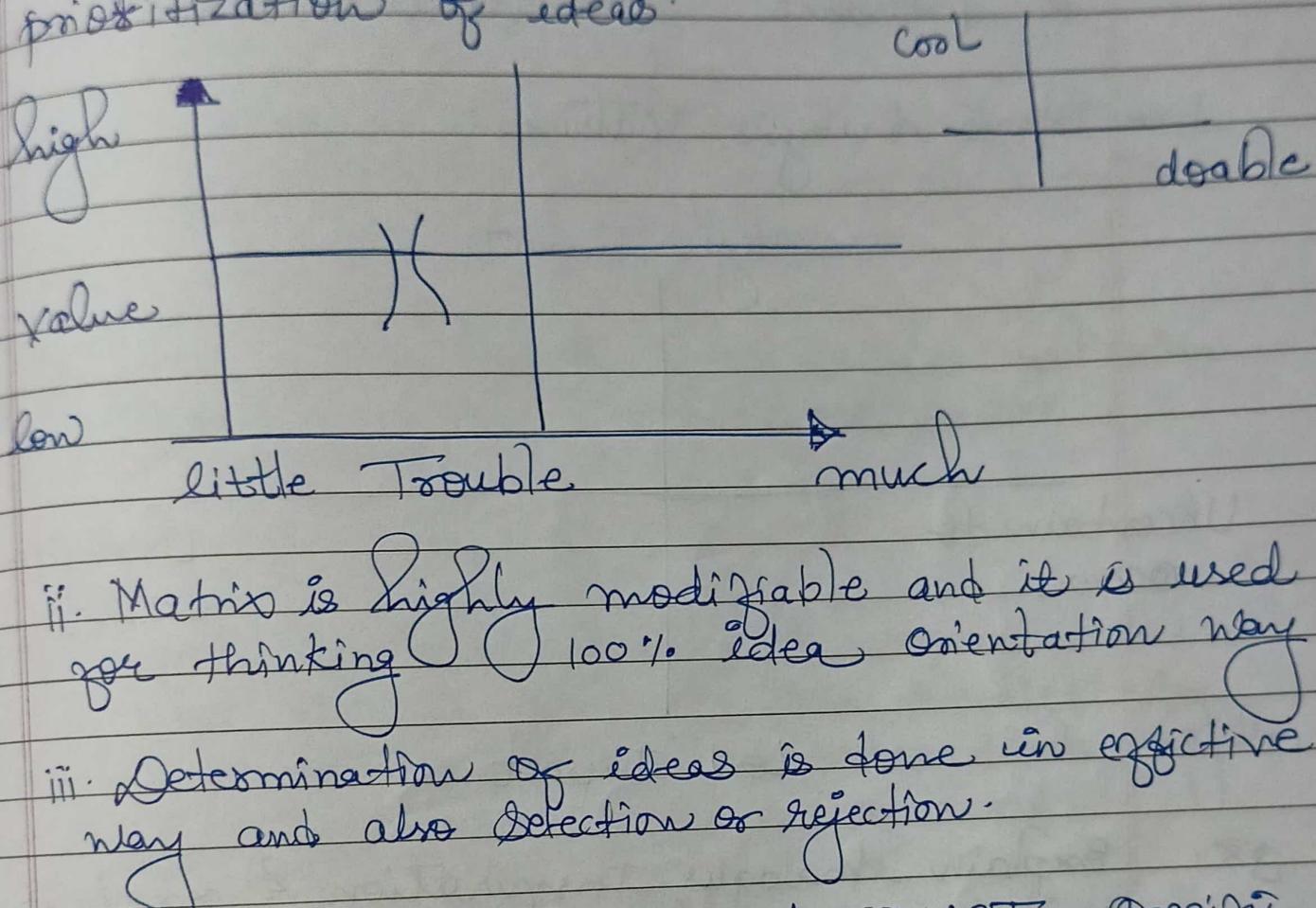
Brainstorming Rules :

- ① Creative Confidence
- ② Quantity before Quality.
- ③ Visual ideas.
- ④ Use gestures.
- ⑤ Build on the ideas of others.
- ⑥ One speaker at a time no mock answers.
- ⑦ No prejudices.
- ⑧ Continuation of activity.



26. Why 2×2 Matrix?

→ i) Used for categorization of ideas and then prioritization of ideas.



ii. Matrix is highly modifiable and it is used for thinking 100% idea orientation way.

iii. Determination of ideas is done in effective way and also selection or rejection.

iv. Axes of matrix is made SMART, Specific, Measurable, achievable, Realistic, & timely.

27. Q. What is SCAMPER tool?

→	S Substitute C Combine A Adapt M Modify P Put to other uses	What could you use instead Collaboration What adapt for use a sol ⁿ Can we modify or alter New ways
---	--	--

E	Eliminate	Eliminate what you get rid of
R	Pervise	What could we rearrange
→ Steep Analysis Matrix:		
	High Impact	
Uncertain to occur		Likely to occur
	Low Impact	

Q8. Explain Analogous Inspiration? Explain with suitable example.



- i. It is a way to look for solutions in different contexts that be applicable to your challenge or inspiration of idea.
- ii. It provides different perspective & prompt new & creative ideas.
- iii. It is used to create variety & quantity of ideas.

Example:

Google

It MNC Specialized
into products & services.

Apple

It MNC Specialized
into designs & online
services.

It provides various types of
services.

It prioritizes application
related services.

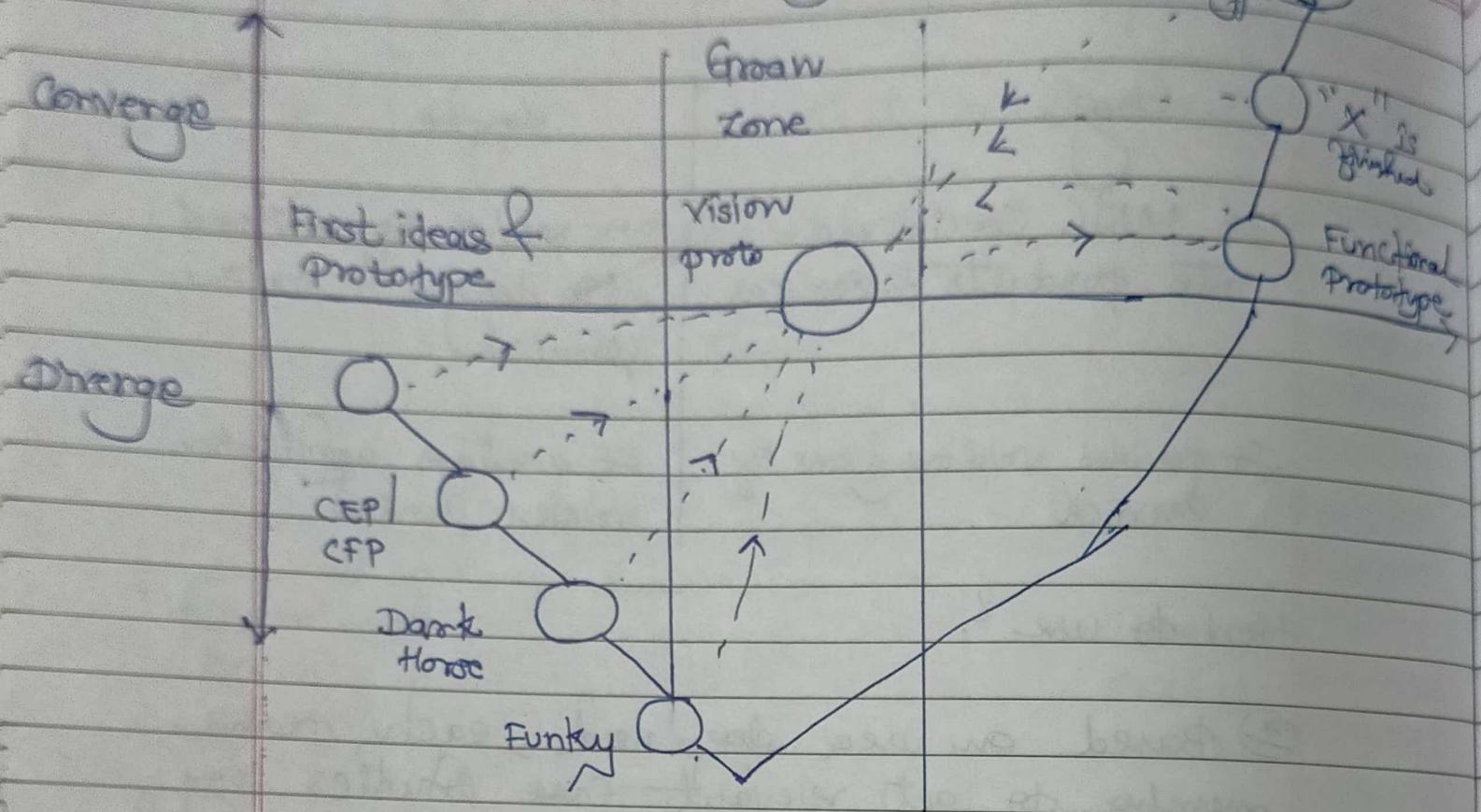
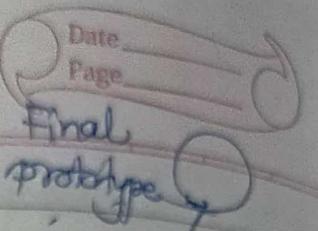
How to use?

① Based on user's deep need, each team member to get relevant Case Studies by looking across other industries that might serve to inspire challenge of work.

②

Build to think & Test to learn.

UNIT + Prototype



CEP / CFP → performed several times if problem is not understood clearly.

allows us to focus on deep-level.

- i. Building a prototype makes the selected ideas tangible & perceptible.
- ii. Prototypes range

Critical Function prototype → Function Prototype.

Level of prototypes →

Lo-Fi → Hi-Fi

Q. How to carry out prototyping?

- i. Collect & analyze the user information
- ii. Build the prototype.
- iii. Decide what you want to test.
- iv. Create preliminary design, proof of concept
- v. Prepare your Test Scenarios & Questions
- vi. Feedback of user evaluation.

* Focus Prototypes types :

Combined Experiment : Funky Prototype

Focused Experiments : CEP / CFP

Crazy Experiments : Dark Horse

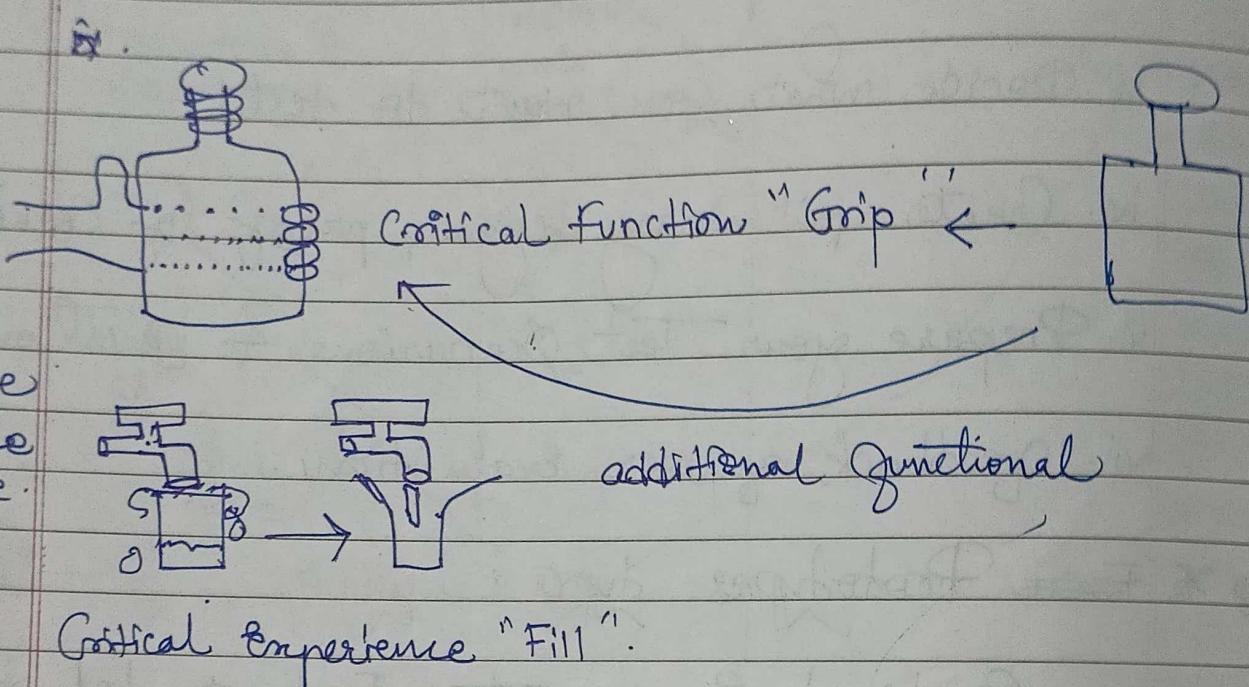
Imagining the Future : Vision Prototype

Q.2. Explain Critical experience prototypes & Critical function prototype.

→ - CEP: I would like to learn about the user and his problem through experiments.

- These performed several times over the design cycle, especially if the whole user problem is not yet understood.

iii. It allows us to think on depth-level. It also makes sense when critical element are still unclear or need to be questioned.



Q3. Explain Crazy Experiments - Dark Horse prototype

① Highlights : to learn even more about the user & his problem through crazy experiments.

② Tool : Cast light into the most distant dark corners of the problem space.

It lies below CEP/CFP prototype

③ It is secret Super Prototype which Dong Jo builds solution.

④ Development using this prototype is possible to build current technology & knowledge.

④ more is build team thinking for spreading up craze
experiment

⑤ Thinking is out of box.

2) Wireframe Prototype vs Realistic prototypes

Low-fidelity

built in less time

representation or basic layout
by objects

? - It displays an information on page

High-fidelity

built in more time

Interface of website

3) Compare Paper Prototyping vs Digital Prototyping

i. Sketches are drawn using pen, pencil..

ii. Show paper prototypes to users & get feedback.

iii. Physical exploration e.g. slides

i. Digitally simulation of the product on screen.

ii. Designers use 3D design of product

iii. Virtual exploration e.g. autocad software

Design Thinking

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Date

Explain Feedback capture grid with example.

→ what worked

what could
be improved.

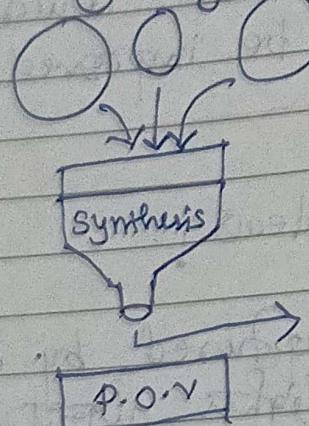
questions?

Ideas!

- i. It is the method captured by designers for capturing the insights about a service prototype.
- ii. With 4 quadrants to note, most participants likes, wishes, questions & ideas.
- iii. It is primarily used when it comes to finding out how well an idea solves a previously identified user problem.
- iv. It aims at acquiring profound understanding as to whether idea is actually right approach to solve the problem.

Summary

① How might we
insights questions
understand observe.

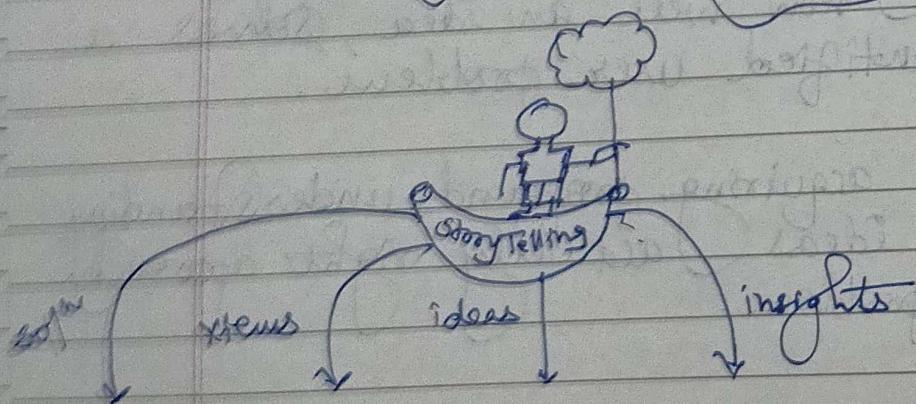
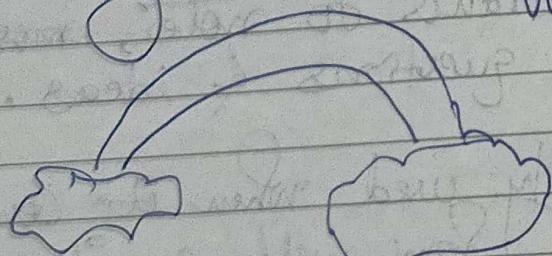


increase scope of iteration

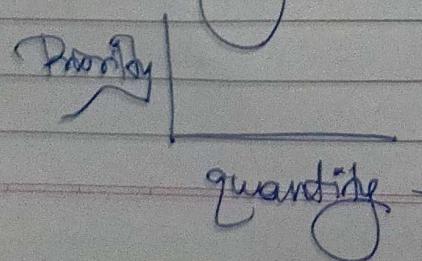
special language

How → possible ways.
might → willingness to
speak up.
we → team.

② Story Telling

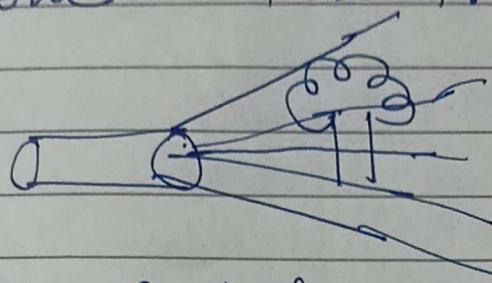


③ Context Mapping: perception related entity



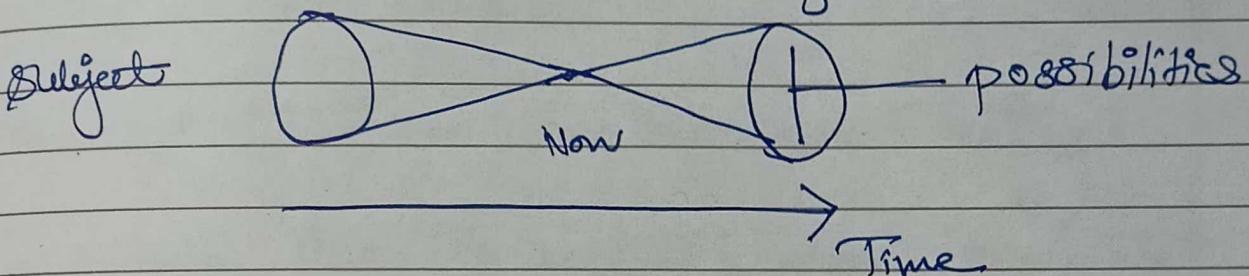
Define Success:

Vision Cone: Past Present Future



Vision Cone is tool for connecting past development with future development

future



Critical Items diagram: ~~just~~ Described elements in critical items are questioned again & again.

Ideation → classic way is Brainstorming-

generation of ideas sorted, combined, clustered

Dot Voting, 2×2 matrix

↓
Rate,
Clear decision
for Selection.

P - S - 5
↓
Team ideas rounds

Categorization for members
prioritization

Special Brainstorming:-

↓
Generation of large no. of ideas in less amount of time. Benefit Competition

NABC



Need Approach

↓
Benefit Competition

Prototypes

- ④ Service Blueprint: more focus on customer satisfaction, target achievement & efficiency.
- ⑤ Minimum Viable Product: It is the product which is built after iterative process when solution found in meaningful way.

Test Phase

- ⑥ Powerful Questions in Experience Testing:

I would like to evaluate ideas, evaluates prototypes by testing them with real customers or users.

This tool is used for gathering more information of test.

- ⑦ Solution Interview:

I would like to find out whether solⁿ is accepted by the user or not.

Solutions interviews are a tool used in the test phase with advanced prototypes.

- ⑧ Structured Usability Testing:

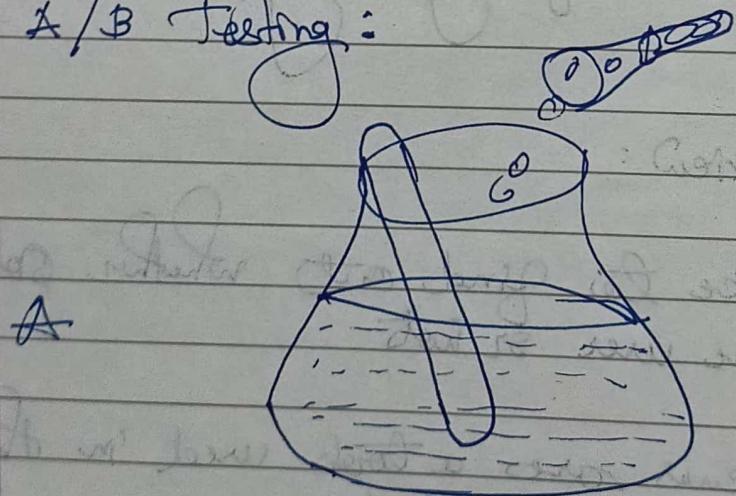
I would like to test my prototypes under unopen conditions.

ii. With usability testing, it can be checked whether something works effectively, efficiently & satisfactorily for user.

Template : SUT

Planning Phase	Test Phase	Conclusion Phase
Concept	welcome	<input type="checkbox"/> doesn't
data	Setup - explain ^h	
location	Questionnaire	
test person	possibilities	

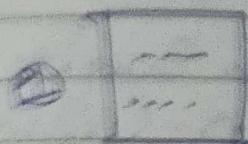
#③ A/B Testing:



Testing

To review & compare two variants in terms of quality / quantity to find out user preference

Procedure of A/B Testing:



Basic Prototype

Select preferred variant

Create Variants

A/B Testing

analyze results

Assign it to testers at random

④ I like, I wish, I wonder

I would like to provide constructive feedback.

Template: IL, IW, IW

Team

IL

IW

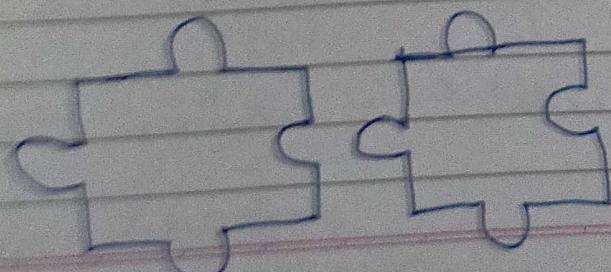
IW

Paul

✓

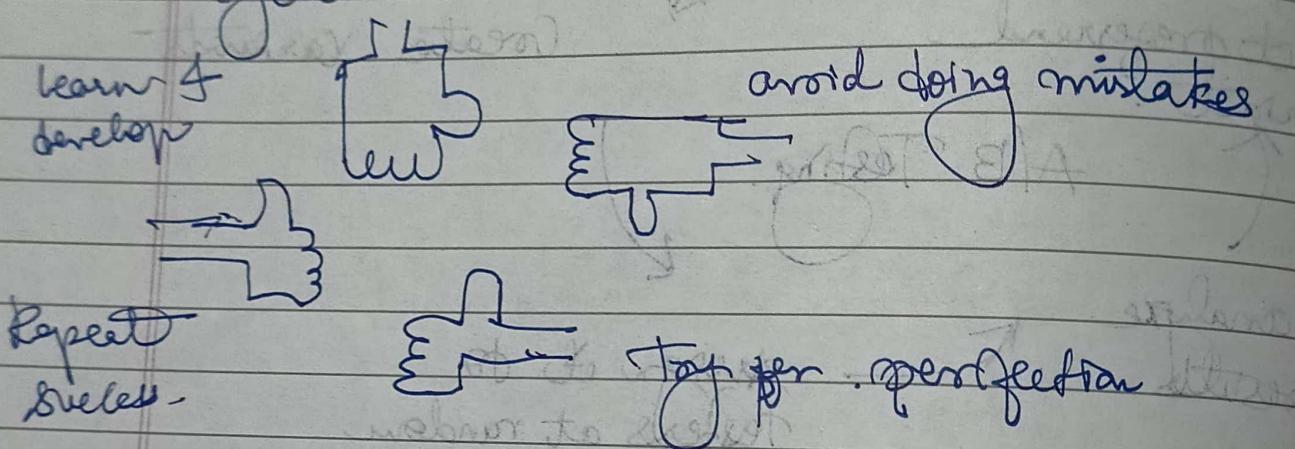
⑤ Team Goals:

I would like to translate problem into solution which benefits me as well as customer needs



#⑥ Lesson Learned

I would like to reflect on insight gained after successful implementation of Design thinking cycle.



W.I., W.T., J.T. : at sign

W.I.

W.T.

J.T.

UNIT 6.

How IBM overhauled its trade

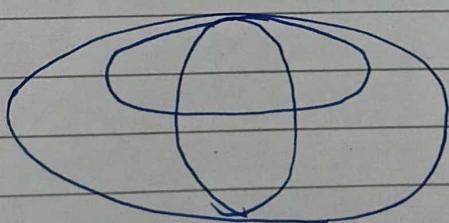
Big Idea: A D.T. idea helped IBM to reimagine its trade show experience deeper customer relation with dynamic problems

Sopharcs: IBM's Smarter Planet initiative inspired the development from its global customers.

Resolution: Senior leaders with responsibility for IBM's marketing & trade shows teamed up with long-time partner.

Lesson: Design Thinking helped teams to focus on building & iteratively testing environment that encouraged customers to engage in meaningful dialogues with IBM experts.

Redesign the customer Contact Centre at Toyota.



- Low availability of digital access information.
- Past failures → New Challenges.
- New Strategy
- The Results

* Social Networks for you?

websites

* Design Thinking in IDEO

IDEO is a design company known for its human centred, interdisciplinary approach.

Background:

Design Thinking describes the in detail.

IDEO Steps for Design Thinking:

- ① Inspiration
- ② Synthesis
- ③ Ideation
- ④ Testing
- ⑤ Implementation

Brainforming Process: The creative process is about divergent thinking, making associations and connecting dots.