THINK!
DESIGN

Contextual Inquiry

Design Thinking & Innovation Tools

Section: T5, Week 5

D'source Project

Open Design School

MoE's Innovation Cell

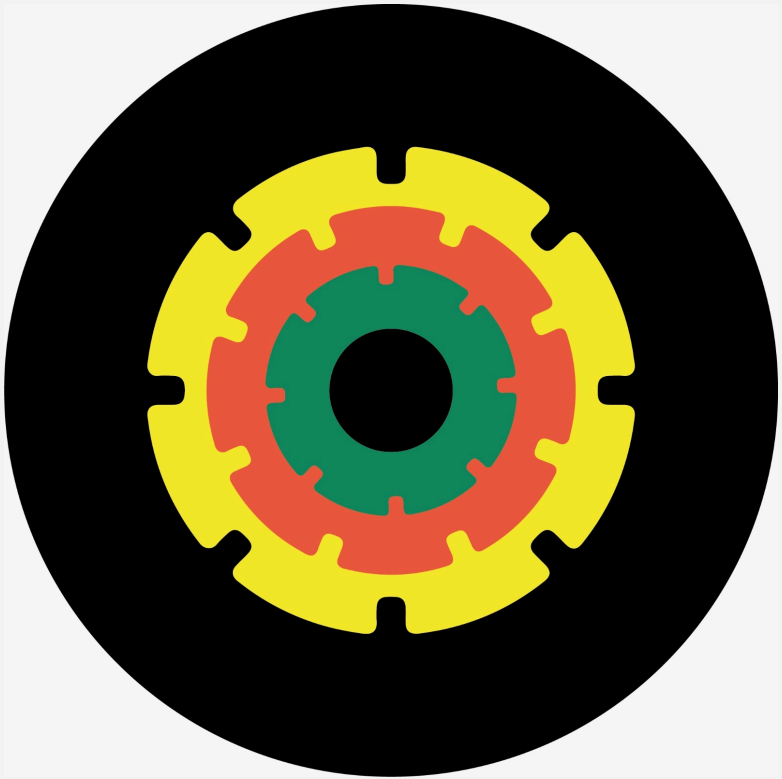
Design Thinking & Innovation (DT&I)

Section: T5.0

Week 5

Design Thinking & Innovation (DT&I)

Prof. Ravi Poovaiah
IDC School of Design, IIT Bombay



DT&I Tools

T5 Contextual Inquiry

Module T5:

T5.1

Contextual Inquiry

What is Contextual Inquiry?

Contextual Inquiry is a primary research method to **understand the needs of the user** through **observations and conversations** at the **user's own location or environment** while the **person is doing/performing the activity**.

Observe the user while he/she is doing the task or activity. The observations are documented. Observing users in action while they are using and interacting with the product/services can lead to interesting inferences.

Converse with the user to seek feedback/opinions about the activity, decisions, challenges, interests, backgrounds, context, etc. You can request them to narrate their experiences.

Contextual Inquiry:

Individually or in groups?

Contextual Inquiry can be done individually or in small groups.

It helps when done in groups with people from diverse backgrounds and opinions are involved. One can share responsibilities while doing the study.

How does it help?

Contextual Inquiry can get you **detailed information**.

Contextual Inquiry involves you to be at user's natural environment while the person is doing/performing the activity. This can lead to **experiential understanding** of the Topic.

Contextual Inquiry (CI):

1. Observe and converse at users location while the user is performing the activity

2. These have been documented through **text notes, images and video**

3. Go through this information and **write the summary as key phrases on Sticky Notes/cards**

4. You could **use different colors** to denote Observations, Problems, Suggestions, etc.

5. Sort those with affinities into categories through open card sorting

6. Give a **title** for each of the categories and **mark the ones that are important**

Contextual Inquiry Steps:

1a. Identifying the Users:
Identify appropriate **users relevant for your Topic** (you can use User participant Mapping).

1b. Locating the User:
Find the **location of the user** and contact them so that you can go and do user studies at their place.

1c. Observation:
Observation involves **observing the Users** at their natural location while using the product or the service.
A. Sketchbook/ Notebook to take down points will be quite useful.

1d. Documentation:
These observations are **documented through text, images and video** using a sketchbook/ notebook and a mobile camera. Get users permission to document.

Contextual Inquiry Steps . . .

1e. Points for Conversation:

Note down as points a list of key issues that you intend to discuss on your notebook. A simple practical method is to use separate cards to write the points down and refer to them one by one during the discussions.

1f. Converse with the Users:

Converse with the User while he/she is doing the activity. This is to get the user's thoughts, opinion, feedback, challenges while using the product or service. Requesting them to narrate their experiences could provide useful information.
Do remember that listening to the users is very important.

1g. Documentation of conversation:

Get users permission to document and record. These conversations can be recorded to refer to it later on.
Also, take down notes as points during the discussions.

Contextual Inquiry Steps . . .

1h. Summary as Key Phrases:

Go through the information (both observation and through conversations) and **write the summary as key phrases on Sticky Notes**

1i. Use colours to differentiate:

Make use of coloured sticky notes to denote different aspects. It could be for Observations, Inferences, Problems, Suggestions, etc.

1j. Affinity Sorting:

Sort these with **affinities into categories** through open card sorting

1k. Titling and importance:

Give a **title** for each of the categories and go through the notes and mark the ones that are important/relevant in **levels of importance**.

Contextual Inquiry - Introduction

//Initial Brief

Guided by
Prof. Anirudha Joshi

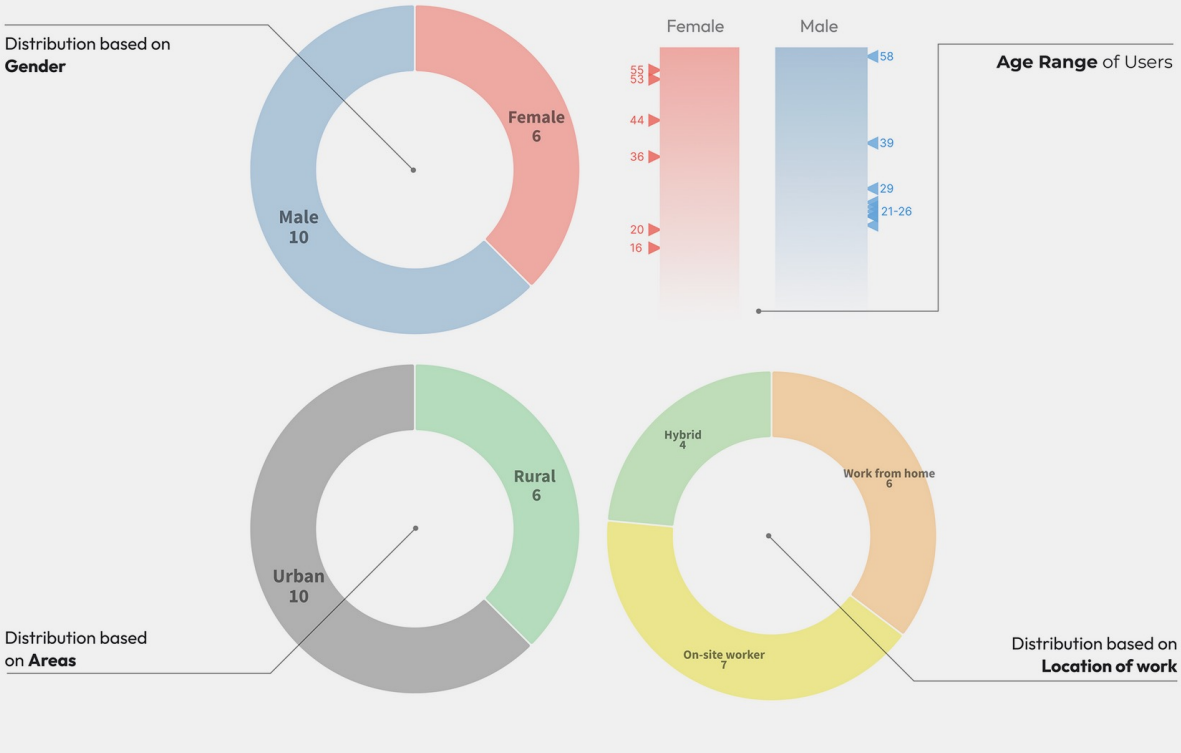
Laksh Rajpal Samarth Dhanuka
Manu Krishnan Anuj Ambhore

Design a bedroom automation system controller that can be retrofitted in a typical Indian middle class bedroom. The controller needs to be wall-mounted and will look similar to a fan regulator.

//Contextual Inquiry

To gain deeper insights into the challenges users encounter, we conducted in-home interviews with a sample of **16 individuals**. These interviews allowed us to not only understand their daily routines and how they utilize their living spaces but also to empathize with their unique problems and needs more effectively. The demographics of the users vary as follows:

Contextual Inquiry - Demographics



Contextual Inquiry - Interpretations

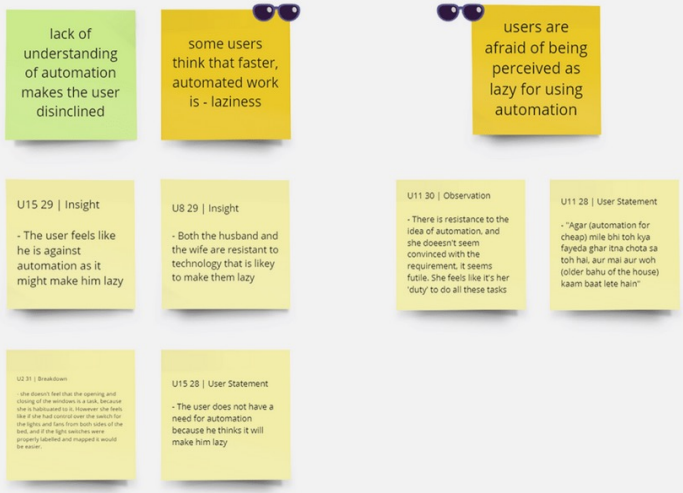
Statement no.	Statements	Classifiy
U8 01	52-year-old doctor residing at IIT Bombay campus. User is a radiologist and practices as a general physician. been staying in this space for a year	Demographics
U8 02	The AC in use is a window AC mounted on a 3 pane window (on the second one)	User Statement
U8 03	AC is below knee height so it keeps the marble floor very cold when turned on and it can cause a certain mount of discomfort while walking	Observation
U8 04	Because the user lives on the 15th floor, there is no mosquito problem.	User Statement
U8 05	User typically sleeps for 6-7 hours each night.	User Statement
U8 06	Today, she woke up at 8 AM, whereas the usual wake-up time is 6-6:30 AM.	User Statement
U8 07	The variability in the time the user wakes up highly depends on the demand of their work	Observation
U8 08	The user's occupation as a doctor with a variable schedule highlights the need for flexible automation that can adapt to changing daily routines.	Insight
U8 09	User leaves home for work at 12:15 PM, but today, User left at 1 PM.	User Statement
U8 10	Returning home usually occurs at around 6-6:15 PM, but today, User returned at 7 PM.	User Statement
U8 11	User prefers to keep the windows open even at night, but she keeps the one with the mosquito mesh closed	User Statement
U8 12	The user's preference for open windows at night suggests a desire for automation that can maintain a pest-free environment while allowing natural ventilation.	Insight

Contextual Inquiry – Summary on Cards

Contextual Inquiry – Sorted Cards

Some users believe that faster, automated work **is 'laziness'** or **will make them lazy**, while other users are afraid of being **perceived** as lazy for using automation

users may or may not exhibit cost consciousness, but ignore it when it comes to usage habits



Contextual Inquiry – Key Inferences

Social and **cultural factors** also tend to dictate the interaction of different users with several elements of their room

For users with medical conditions, or their dependants, bedrooms should be spaces that **prioritize protection, mobility, accessibility, cleanliness, and rest**. And allow for control over elements with ease to facilitate the same, along with **trackability**

The physical layout and **placement of elements** in the room limits the user and controls/ **lengthens their movements**

Some users are passive when it comes to manual daily actions (like opening windows for ventilation) while **some of them like to take up that responsibility** and manage actions in their room

Users may or may not exhibit **cost consciousness** but ignore it when it comes to usage habits

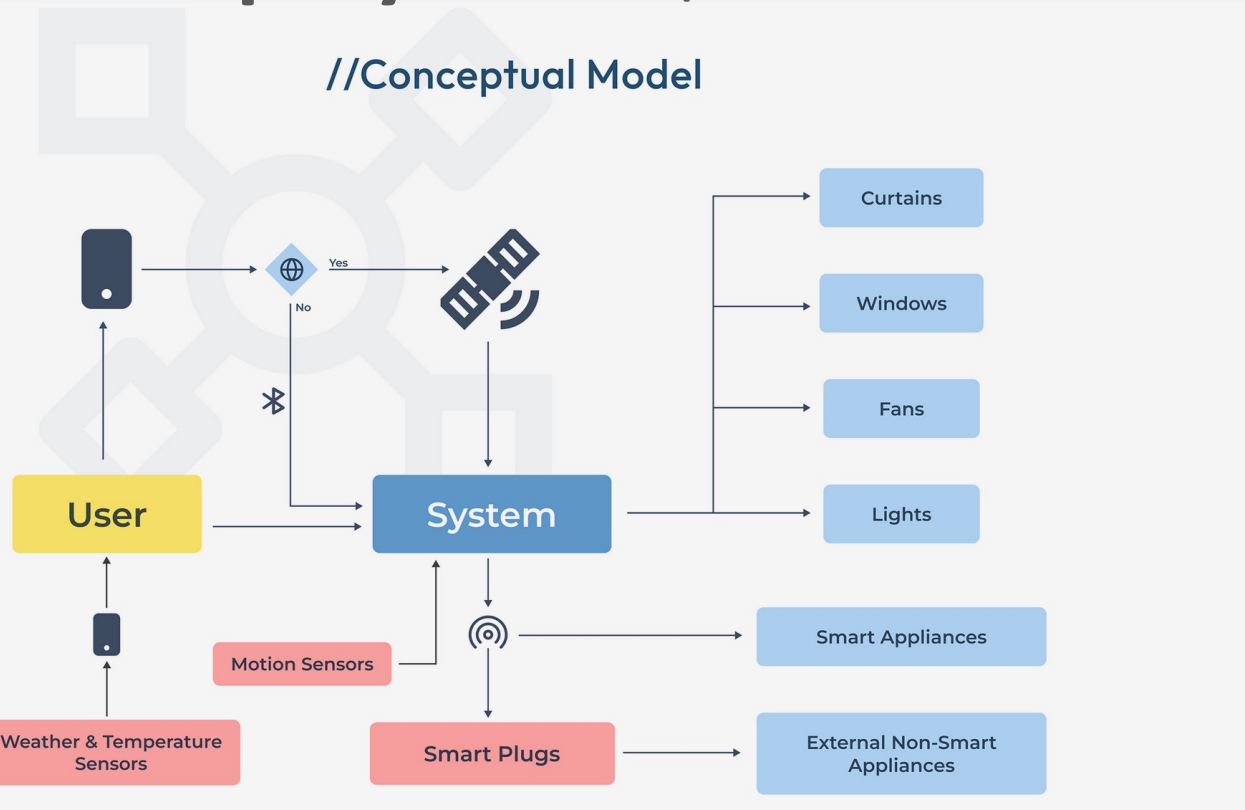
Safety concerns and convenience drive the users interaction with their windows

Some users believe that faster, automated work is **'laziness' or will make them lazy**, while other users are afraid of being perceived as lazy for using automation

Users negotiate **needs vs preferences** and exhibit divisions in control/power (power distance) which may also be influenced by gender perspectives

Quantities of control (such as degree of temperature or intensity of light) are **less important** to the user than quantified expenditure

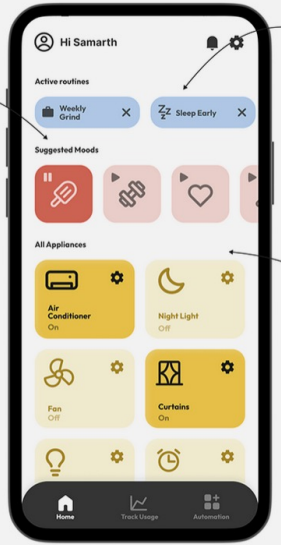
Contextual Inquiry – Conceptual Model



Contextual Inquiry – Final Solution

Law of Proximity

Similar buttons are grouped together for better understanding and differentiation.



Hick's Law

Den-Z presents the most important and frequent actions on the home screen to ease decision making.

Fitts's Law

The buttons for appliances are large and within fingers' reach so that users can easily and quickly toggle them.

Why do ‘Contextual Inquiry’?

How does it help? (mentioned in DT&I process)

Primary Research based on first hand information/data becomes useful and necessary **to fill-in the gaps** that secondary research did not reveal.

As a designer, when you go to the environment where the issues are, **you experience the problem space** and this is an invaluable asset to the understanding of the problem.

Primary Research is about **finding minor details and specific information** that can make a major difference to your understanding of the problem and issues connected with it.

Contextual Inquiry can provide both **qualitative and quantitative** information/data.

Persons behind Contextual Inquiry:

Karen Holtzblatt and Hugh Beyer:

Karen Holtzblatt and Hugh Beyer conceived of the user centered design process ‘Contextual Inquiry’ in 1988.

According to Karen Holtzblatt and Hugh Beyer,
“Contextual Design is a user-centered design process that uses in-depth field re-search to drive innovative design”

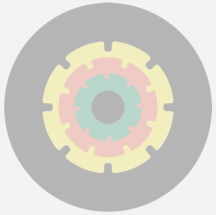
Thanks for Listening

DT&I Tools
Section: T5
Week 5

DT&I Course – Week 5:

DT&I
Process
(20%)

> Primary Research Part 1
> Interacting with Users



DT&I
Tools
(20%)

> Contextual Inquiry

DT&I
Project
(50%)

> Primary Research
> Contextual Inquiry

DT&I
Case Study
(10%)

> Case Study Project 'IxD Project'

THINK!
DESIGN

Supporting Organizations:

D'source

D'source Project
IDC, IIT Bombay

Open Design School
IDC, IIT Bombay

MoE's Innovation Cell
AICTE, New Delhi

Credits:

Content:

Prof. Ravi Poovaiah

D'source Project

Open Design School

MoE's Innovation Cell

D'source Project

Open Design School

MoE's Innovation Cell

Credits:

Mentor for CI Example:

Prof. Anirudha Joshi

Students:

Anuj Ambhore, Laksh Rajpal,
Manu Krishnan, Samarth Dhanuka

Credits:

Camera & Editing:
Santosh Sonawane

D'source Project

Open Design School

MoE's Innovation Cell

Credits:

Think Design Animation:
Rajiv Sarkar

D'source Project

Open Design School

MoE's Innovation Cell

THINK!
DESIGN

D'source Project

Open Design School

MoE's Innovation Cell

Credits:

End Title Music:
C P Narayan

Credits:

Produced by:

IDC School of Design

IIT Bombay

D'source Project

Open Design School

MoE's Innovation Cell