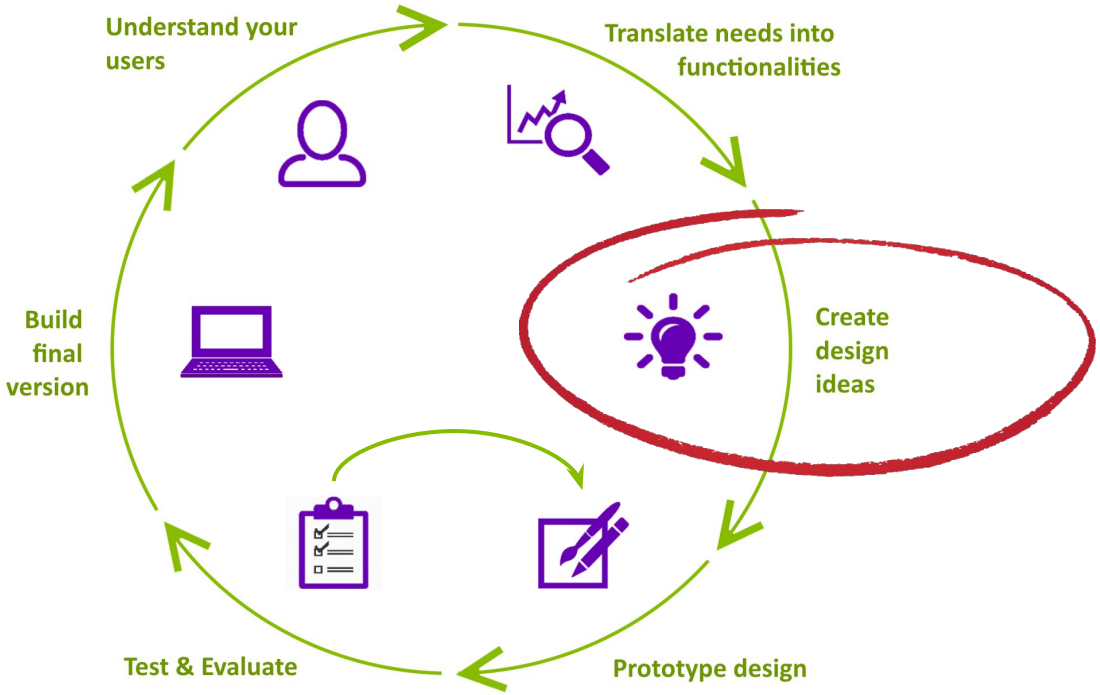
CS449/649:
Human-Computer Interaction

Winter 2018

Lecture VIII

Anastasia Kuzminykh


Understand your users
Translate needs into functionalities
Create design ideas
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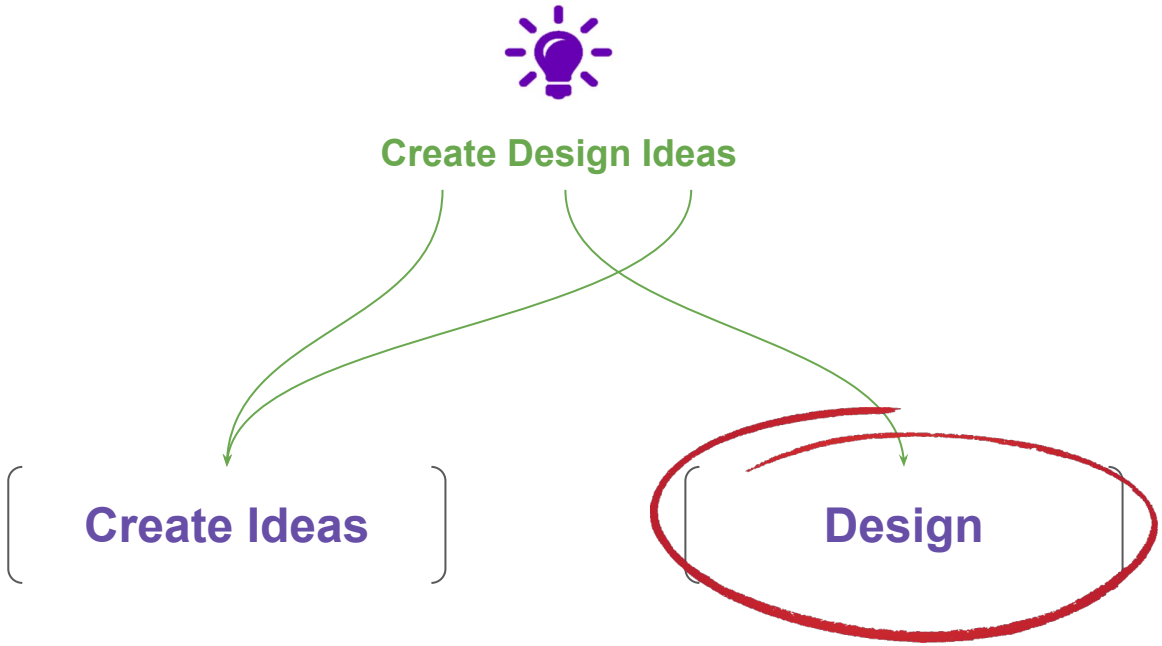
Create Design Ideas
Create Ideas
Design

Create Design Ideas

Gibson's Affordances:

- Offerings or action possibilities in the environment in relation to the action capabilities of an actor

- Independent of the actor's experience, knowledge, culture, or ability to perceive

- Existence is binary – an affordance exists or it does not exist

Norman's Affordances:

- Perceived properties that may or may not actually exist

- Can be dependent on the experience, knowledge, or culture of the actor

- Can make an action difficult or easy

McGrenere, J., & Ho, W. (2000). Affordances: Clarifying and evolving a concept. In Graphics interface.

Create Design Ideas

Design

Signifier - indicators of any type that communicate the action needed so the affordance can take place

Affordance - the possible use for an object when interacting with it

Constraints - restrictions that limit the possible actions available with an object

Feedback - conveys effects of user's actions

Create Design Ideas

Feedback - conveys effects of user's actions

- **Location:** where am I?
- **Current status:** what's happening?
- **Future status:** what's next?
- **Outcomes:** what just happened?

By David M. Hogue

Create Design Ideas

Feedback - conveys effects of user's actions

Location: where am I?

Current status: what's happening?

Future status: what's next?

Outcomes: what just happened?

By David M. Hogue

Time: How long is it going to take?

Reasons: why you do what you do?

Presence: Are you even there?

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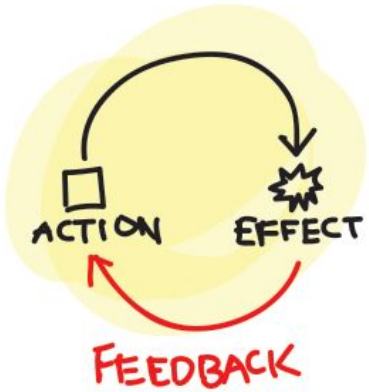
Feedback - conveys effects of user's actions

Feedback loop

Speed: Influence decisions

Context: Meaning of your feedback



Measurability: Provide comparisons

Motivation: should correspond

[How To Design Outstanding Feedback Loops]

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Discoverability - whether it's possible to figure out how to use an object by interacting with it

Create Design Ideas

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Findability - whether it's easy to find content

Learnability - whether it's easy to learn how to use functionality

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F-Shaped Pattern For Reading Web Content

- Make use of existing practices and familiar interactions
- Build around existing mental models
- Make use of signifiers and affordances

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Mapping - indication of the relationship between objects

Create Design Ideas

Mapping - indication of the relationship between objects (often controls)

Elevator buttons, Shane Adams via Flickr Creative Commons

- Make use of spatial gestalt principles
- In some cases culture-specific
- Build around existing mental models

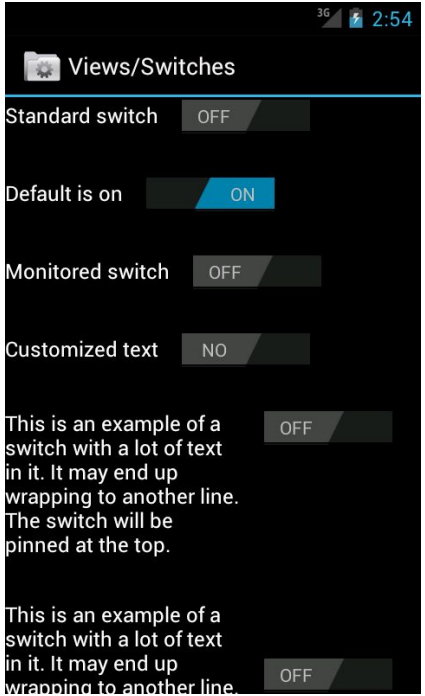

Image: https://stackoverflow.com/questions/9752760/slide-toggle-for-android

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Conceptual Model - user's understanding of how the system works communicated through the design

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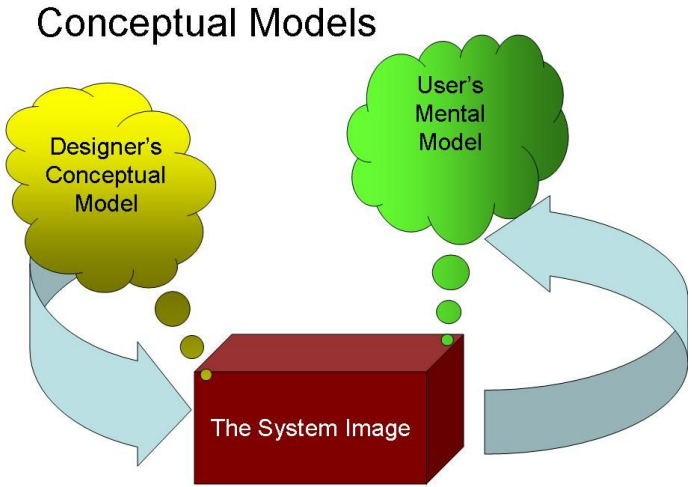
Conceptual Model - user's understanding of how the system works, communicated through the design



"For people to use a product successfully, they must have the same mental model (the user's model) as that of the designer (the designer's model). But the designer only talks to the user via the product itself, so the entire communication must take place through the "system image": the information conveyed by the physical product itself."

(Originally published in Norman & Draper's *User Centered System Design* (1986), and reused frequently thereafter: *The Design of Everyday Things* (1988, 2003) and *Emotional Design* (2004).

Source: Design as Communication by Don Norman

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Site/App Flows

User Flows

The **path** a user follows through an application. Does not have to be linear, can branch out

Goal - to optimize users ability to accomplish a task with the least amount of steps. Communicates transitions

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User Flows

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What pages/screens are **needed**

Which pages/screens should **link** to each other

Help to design a **navigation experience**

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What pages/screens are **needed**

Which pages/screens should **link** to each other

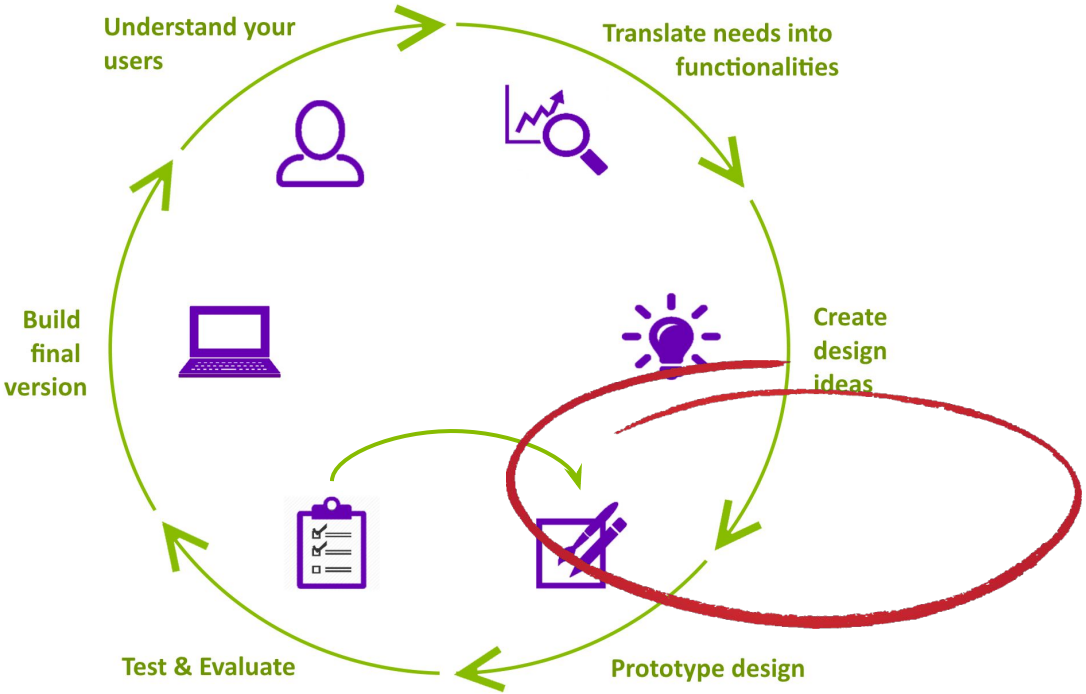
Help to design a **navigation experience**

User Flows

Microinteractions and **responses** to user's actions and errors

Help to analyze the **efficiency** of a task

Often attached to **personas**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Prototype Design

Information Architecture - structural design of shared information environments

Richard Saul Wurman

- Users flow through your product
- Catalog user's information
- Presentation of the information
- Decision driving function

Create Design Ideas

Prototype Design

Knowledge Organisation

Taxonomy

Folksonomy

Domain Analytics Approach

Create Design Ideas

Prototype Design

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Practice of classification based on hierarchical relationship.

Parent-child hierarchies

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Parent-child hierarchies

Folksonomy

Practice of classification based on non-hierarchical relationship.

Public tags and their frequencies

Domain Analytics Approach

Create Design Ideas

Prototype Design

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Public tags and their frequencies

Domain Analytics Approach

Practice of classification based on sociological - epistemological view.

Indexing to fulfill a task by specific group