

Chapter 4: Approaches for Interaction Design

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User-Centred Design

User-Centred Design

- **User-centered design** means working with your users all throughout the project.

(Norman)

- **User-centered design** means understanding what your users need, how they think, and how they behave – and incorporating that understanding into every aspect of your process.

(Jesse James Garrett)

- **User-centered design** is an iterative design process in which designers focus on the users and their needs in each phase of the design process.

(Interaction Design Foundation)



User-Centred Design

- **Being human-centred** is about
 - Putting people first

- Designing interactive systems to support people and for people to enjoy. ■
Thinking about what people want to do rather than what the technology can do
- Designing new ways to connect people with people
- Involving people in the design process
- Designing for diversity

(Benyon, 2014)



User-Centred Design

- **User-centered design principles**
 - A clear understanding of user and task requirements.

- Incorporating user feedback to define requirements and design.
- Early and active involvement of the user to evaluate the design of the product.
- Integrating user-centred design with other development activities.
- Iterative design process.

<https://usabilitygeek.com/>



Goal-Directed Design





- **Goal-directed design** encompasses the design of a product's behaviour, visual form and physical form. Its fundamental premise is that the best way to design a successful way isto focus on achieving goals.

(Kim Goodwin, *Designing for the Digital Age*)



Goal-Directed Design





- **Goal-directed design** combines techniques of ethnography, stakeholder interviews, market research, detailed user models, scenario-based design, and a core set of interaction principles and patterns. This process can be roughly divided into six phases: **Research, Modeling, Requirements Definition, Framework Definition, Refinement** and **Support**.



(Cooper, Reimann and Cronin,
2007)



Goal-Directed Design



- **Research:**

- The Research phase employs ethnographic field study techniques (observation and contextual interviews) to provide qualitative data about potential and/or actual users of the product.

- It also includes competitive product audits, reviews of market research and technology white papers and brand strategy, as well as one-on-one interviews with stakeholders, developers, subject matter experts and technology experts.

(Cooper, Reimann and Cronin, 2007)



Goal-Directed Design





■ **Modeling:**

- During the Modeling phase, behavior and workflow patterns discovered through analysis of the field research and interviews are synthesized into domain and user models.
- Domain models can include information flow and workflow diagrams.
- User models, or **personas**, are detailed, composite **user archetypes** that represent distinct groupings of behaviors, attitudes, aptitudes, goals, and motivations observed and identified during the Research phase.

(Cooper, Reimann and Cronin, 2007)



Goal-Directed Design



- **Requirements Definition:**

- Design methods employed by teams during the Requirements Definition phase provide the much-needed connection between user and other models and the framework of the design.

- This phase employs scenario-based design methods with the important innovation of focusing on the scenarios and on meeting the goals and needs of specific user personas.

(Cooper, Reimann and Cronin, 2007)



Goal-Directed Design





■ Framework Definition:

- In the Framework Definition phase, designers create the overall product concept, defining the basic frameworks for the product's behavior, visual design, and - if applicable - physical form. Interaction design teams synthesize an **interaction framework** by employing two other critical methodological tools in conjunction with context scenarios.
 - The first is a set of general **interaction design principles** that provide guidance in determining appropriate system behavior in a variety of contexts.
 - The second critical methodological tool is a set of **interaction design patterns** that encode general solutions to classes of previously analyzed problems.

(Cooper, Reimann and Cronin, 2007)



Goal-Directed Design



- **Refinement:**

- The Refinement phase proceeds similarly to the Framework Definition phase, but with increasing focus on detail and implementation.
- The culmination of the Refinement phase is the detailed documentation of the design, **a form and behavior specification**, delivered in either paper

or interactive media as context dictates.

(Cooper, Reimann and Cronin, 2007)



Goal-Directed Design



- **Development Support:**

- Even a very well-conceived and validated design solution can't possibly anticipate every development challenge and technical question.
- It's important to be available to answer developers' questions as they arise during the construction process.

(Cooper, Reimann and Cronin, 2007)



Design Pattern

- "A **design pattern** in architecture and computer science is a formal way of documenting a solution to a design problem in a particular field of expertise”.
- The idea was introduced by the architect Christopher Alexander in the field of architecture and has been adapted for various other disciplines, including computerscience.
- An organized collection of design patterns that relate to a particular field is called a **pattern language**.

<https://wiki.p2pfoundation.net/>



Design Pattern

- A **design pattern** is a solution to a problem in a context, i.e. a pattern describes a problem, a solution, and where this solution has been found to work.
- A key characteristic of design patterns is that they are generative, i.e. they can be instantiated or implemented in many different ways.
- Patterns on their own are interesting, but they are not as powerful as a pattern language.
- A **pattern language** is a network of patterns that reference one another and work together to create a complete structure.

(Preece, Sharp and Rogers, 2015)



Design Pattern

- **Example of Sitemap Footer pattern**



<https://www.interaction-design.org/>



Design Pattern

- Another form of pattern is **the dark pattern**.
- **Dark patterns** are not necessarily poor design, but they have been designed carefully in order to trick people.

(Preece, Sharp and Rogers, 2015)



Dark patterns

- **Dark patterns** (also known as “**Deceptive design patterns**”) are tricks used in websites and apps that make you do things that you didn't mean to, like buying or signing up for something.

- **Types of dark patterns:**

- Roach motel
- Privacy zuckering
- Misdirection
- Hidden costs
-

<https://www.deceptive.design/>



Dark patterns

- **Dark patterns - Roach motel**

<https://www.deceptive.design/>



Activity-Centred Design





- Norman describes a hierarchy in which activities are composed of tasks, which are in turn composed of actions, which are then themselves composed of operations.
- Using this scheme, Norman advocates “**Activity-centered design**”, which focuses first and foremost on understanding activities.
- His claim is that humans adapt to the tools at hand, and understanding the activities that people perform with a set of tools can more favorably influence the design of those tools.

(Cooper, Reimann and Cronin, 2007)



Activity-Centred Design



- **Activity-centred design** is a model of design that focuses on how a system produces an outcome as a result of activity.
- **Activity-centred design model** is an X-Ray into the social and technical workings of an activity. It considers the broader system

beyond a single user.

<https://medium.com/>



Activity-Centred Design







<https://medium.com/>



Participatory Design

- **Participatory design** (originally co-operative design, now often co-design) is an approach to design attempting to actively involve all stakeholders (e.g. employees, partners, customers, citizens, end users) in the design process to help ensure the result meets their needs and is usable.

<https://en.wikipedia.org/>

- **Participatory design techniques** - involving people closely in the design process - can be used, and stakeholders can participate in the design process through workshops, meetings and evaluation of design ideas.



Participatory Design

- **Participatory design research:**

- **Framing:** design researcher identifies goals, objectives, questions and hypotheses that serve as a starting point
- **Planning:** define the activities that will support you in (dis) proving your hypotheses
- **Facilitating:** moderation and running of participatory design research sessions
- **Analysing:** results from participatory research sessions are being

analysed, presented and documented

(Frog Design)



Framing

- Select your users
- Create your research goals
- Use your early ideas and assumptions to create hypotheses that serve as a starting point
- Identify the methods you use in participatory design sessions with user groups



Planning

- Location
- Participants
- Group size
- Data capture (notes, audio, video, other artefacts)
- Types of activities (e.g. creation of artefacts, experience narratives,

prioritisation)

- Mapping of activities to stages in the design process like narrative activities during needs analysis

(Frog Design)



Facilitation

- Be prepared
- Be reflective about your practice
- Adapt your delivery style to the audience
- Handling of difficult questions, situations (and sometimes

people) ■ Engage your audience like through open ended questions

- Be approachable
- Understanding and handling of group dynamics

(Frog Design)



Analysis

- Cull irrelevant, incomplete or unwanted data
- Normalise your data

- Review and summarise main points, create visualisations
- Document findings from activities

(Frog Design)



Summary

- We discussed about different approaches to interaction design, including

User-centered design, Goal-directed design, Activity-centred design and Participatory design. ■ **User-centered design** is an iterative design process in which designers focus on the users and their needs in each phase of the design process.

- The fundamental premise of **Goal-directed design** is that the best way to design a successful way is to focus on achieving goals.
- **Activity-centred design** is a model of design that focuses on how a system produces an outcome as a result of activity.
- **Participatory design** is an approach to design attempting to actively involve all stakeholders in the design process to help ensure the result meets their needs and is usable.



Additionalresources



- About Face 3: The Essentials of Interactive Design (Alan Cooper, Robert Reimann, Dave Cronin, 2007)
- Designing Interactive Systems: A comprehensive guide to HCI, UX and interaction design, 3rd Edition (David Benyon, 2014)
- Interaction Design: Beyond Human-Computer Interaction, 4th

Edition (Jennifer Preece, Helen Sharp, Yvonne Rogers, 2015)