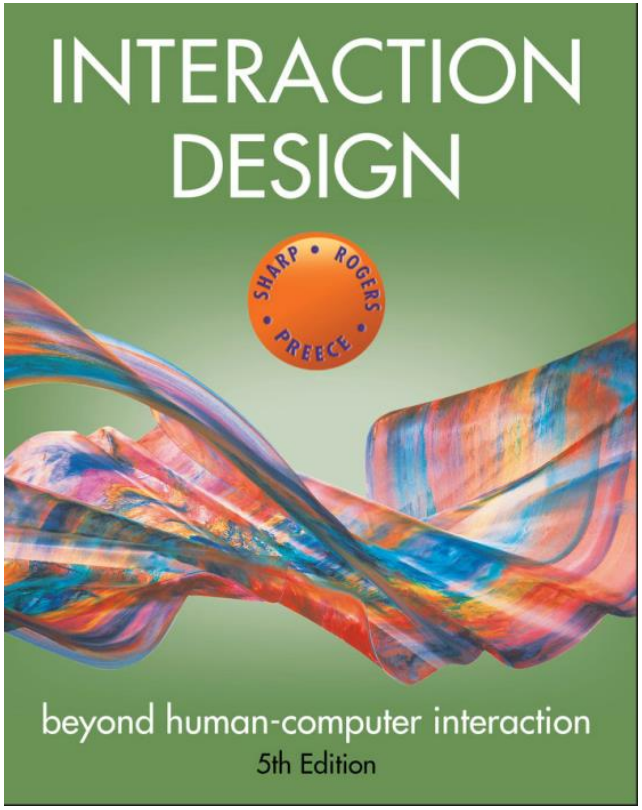
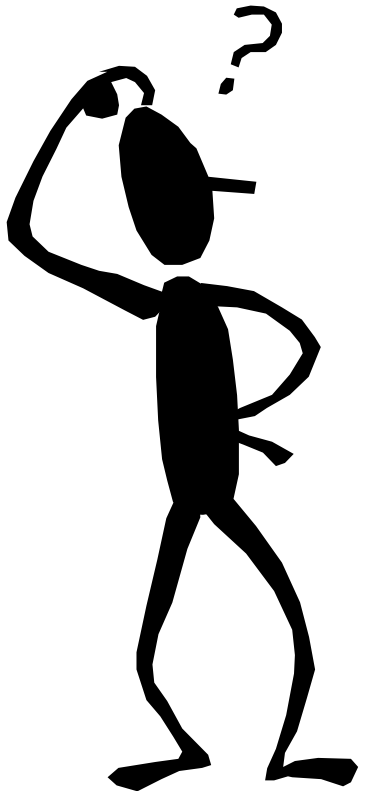


Chapter 2

THE PROCESS OF INTERACTION DESIGN

Overview



- What is involved in Interaction Design?
  - Importance of involving users
  - Degrees of user involvement
  - What is a user-centered approach?
  - Four basic activities
- Some practical issues
  - Who are the users?
  - What are 'needs'?
  - Where do alternatives come from?
  - How to choose among alternatives?
  - How to integrate interaction design activities in other lifecycle models?

What is involved in Interaction Design?

- It is a process:
  - a goal-directed problem solving activity informed by intended use, target domain, materials, cost, and feasibility
  - a creative activity
  - a decision-making activity to balance trade-offs
- Generating alternatives and choosing between them is key
- Four approaches: user-centered design, activity-centered design, systems design, and genius design

Importance of involving users

- Expectation management
  - Realistic expectations
  - No surprises, no disappointments
  - Timely training
  - Communication, but no hype
- Ownership
  - Make the users active stakeholders
  - More likely to forgive or accept problems
  - Can make a big difference to acceptance and success of product

Degrees of user involvement

- Member of the design team
  - Full time: constant input, but lose touch with users
  - Part time: patchy input, and very stressful
  - Short term: inconsistent across project life
  - Long term: consistent, but lose touch with users
- Newsletters and other dissemination devices
  - Reach wider selection of users
  - Need communication both ways
- User involvement after product is released
- Combination of these approaches

What is a user-centered approach?

User-centered approach is based on:

- Early focus on users and tasks: directly studying cognitive, behavioral, anthropomorphic & attitudinal characteristics
- Empirical measurement: users' reactions and performance to scenarios, manuals, simulations & prototypes are observed, recorded and analysed
- Iterative design: when problems are found in user testing, fix them and carry out more tests

Four basic activities in Interaction Design

1. Establishing requirements
2. Designing alternatives
3. Prototyping
4. Evaluating

A simple interaction design lifecycle model

Exemplifies a user-centered design approach

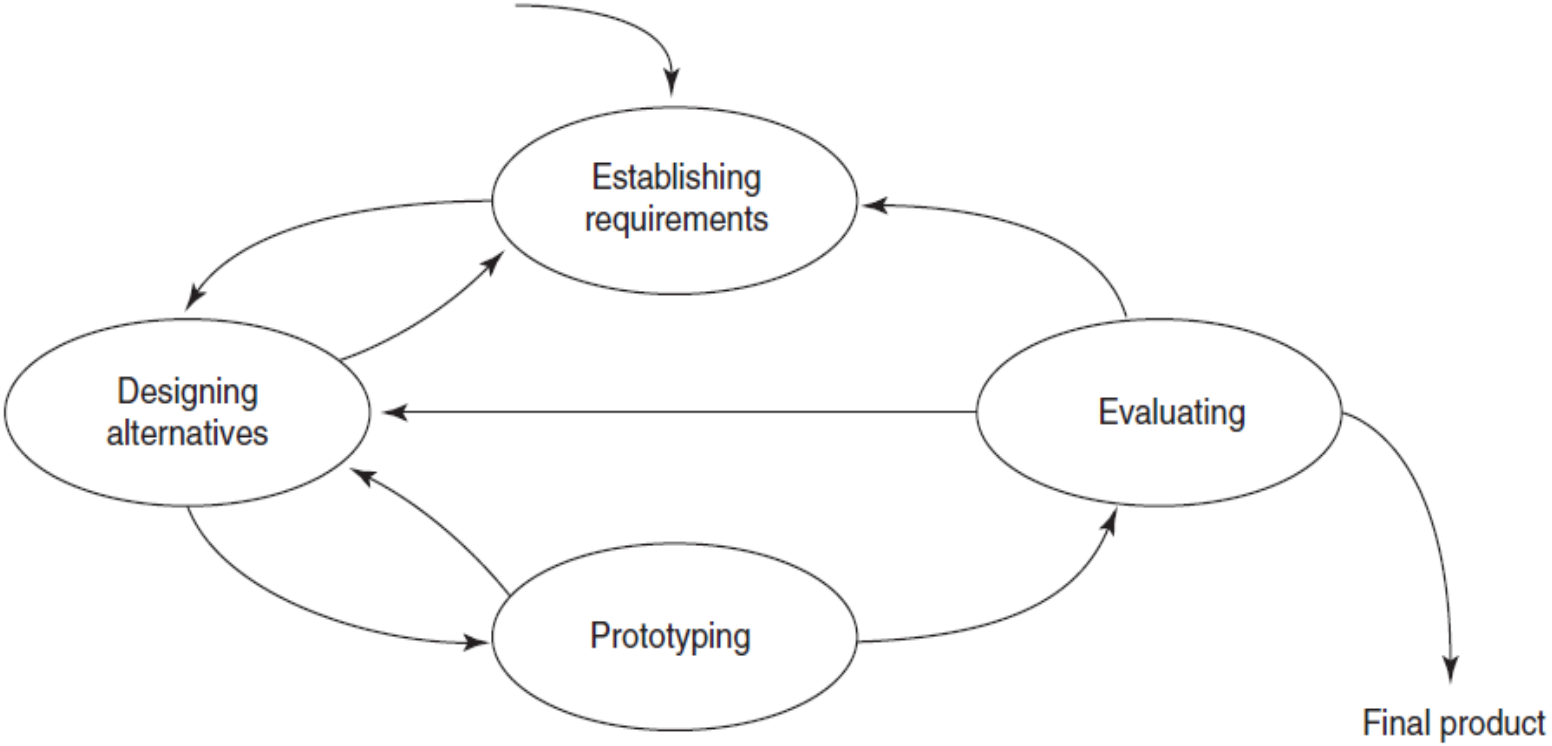


Figure 9.3 A simple interaction design lifecyle model

Some practical issues

- Who are the users?
- What do we mean by ‘needs’?
- How to generate alternatives
- How to choose among alternatives
- How to integrate interaction design activities with other lifecycle models?

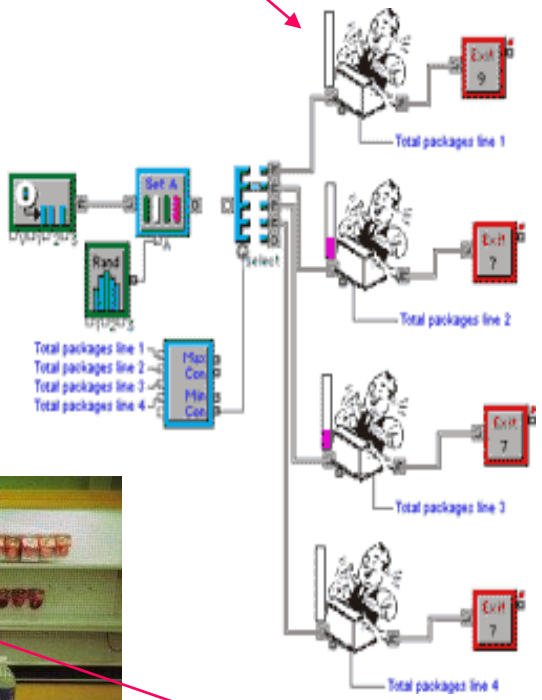
Who are the users/stakeholders?

- Not as obvious as you think:
  - those who interact directly with the product
  - those who manage direct users
  - those who receive output from the product
  - those who make the purchasing decision
  - those who use competitor's products
- Three categories of user (Eason, 1987):
  - primary: frequent hands-on
  - secondary: occasional or via someone else
  - tertiary: affected by its introduction, or will influence its purchase

Who are the stakeholders?

- Suppliers
- Local shop owners

Check-out operators



Managers and owners

Customers

What do we mean by ‘needs’?

- Users rarely know what is possible
- Users can’t tell you what they ‘need’ to help them achieve their goals
- Instead, look at existing tasks:
  - their context
  - what information do they require?
  - who collaborates to achieve the task?
  - why is the task achieved the way it is?
- Envisioned tasks:
  - can be rooted in existing behaviour
  - can be described as future scenarios

How to generate alternatives

- Humans stick to what they know works
- But considering alternatives is important to ‘break out of the box’
- Designers are trained to consider alternatives, software people generally are not
- How do you generate alternatives?
  - ‘Flair and creativity’: research and synthesis
  - Seek inspiration: look at similar products or look at very different products

IDEO TechBox

- Library, database and website all-in-one
- Contains physical gizmos for inspiration

The Tech Box is centrally located

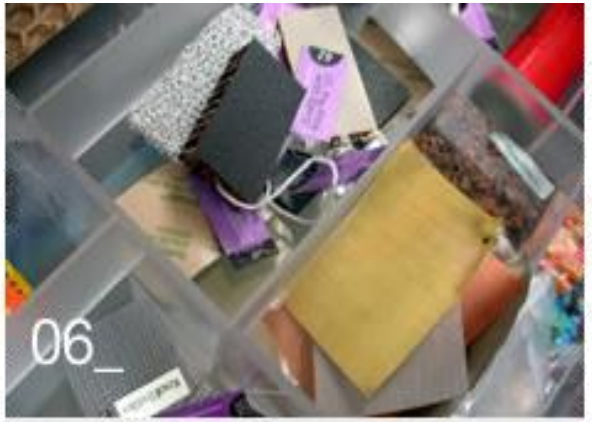
An item on the intranet website

The drawers are sorted by categories

The TechBox

Each drawer resembles a bento box

The curator keeps order



All the entries are tagged

It really is used daily

Two demonstrations units on top

How to choose among alternatives

- Evaluation with users or with peers, e.g. prototypes
- Technical feasibility: some not possible
- Quality thresholds: Usability goals lead to usability criteria set early on and check regularly
  - safety: how safe?
  - utility: which functions are superfluous?
  - effectiveness: appropriate support? task coverage, information available
  - efficiency: performance measurements
  - learnability: is the time taken to learn a function acceptable to the users?
  - memorability: can infrequent users remember how to achieve their goal?

Testing prototypes to choose among alternatives

How to integrate interaction design in other models

- Integrating interaction design activities in lifecycle models from other disciplines needs careful planning
- Several software engineering lifecycle models have been considered
- Integrating with agile software development is promising
  - it stresses the importance of iteration
  - it champions early and regular feedback
  - it handles emergent requirements
  - it aims to strike a balance between flexibility and structure

Summary

Four basic activities in the design process

1. Establishing requirements
2. Designing alternatives
3. Prototyping
4. Evaluating

User-centered design rests on three principles

1. Early focus on users and tasks
2. Empirical measurement using quantifiable & measurable usability criteria
3. Iterative design