

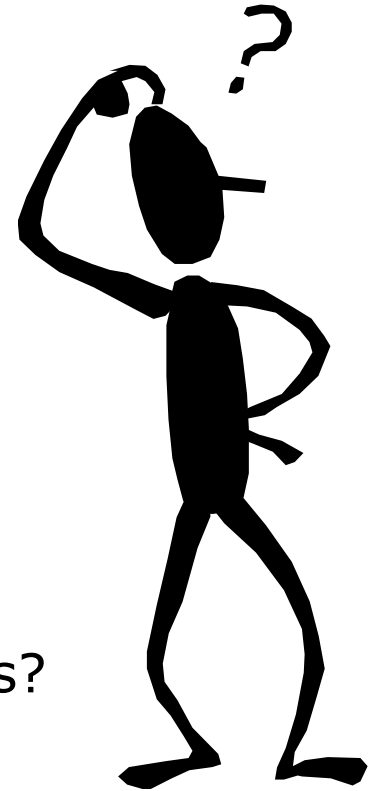
Chapter 9

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 do you choose among alternatives?



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
- 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

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 models?

Who are the users/stakeholders?

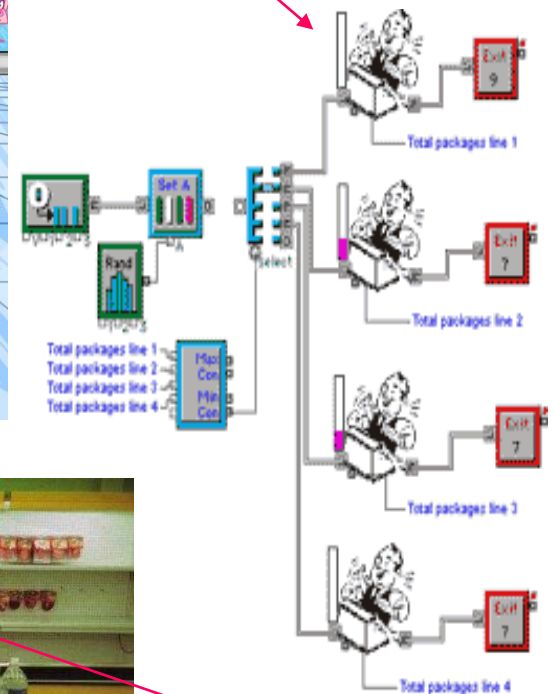
- Not as obvious as you think:
 - those who interact directly with the product
 - those who manage direct users
 - those who receive output from the product
 - those who make the purchasing decision
 - those who use competitor's products
- Three categories of user (Eason, 1987):
 - primary: frequent 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, 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

From: www.ideo.com/

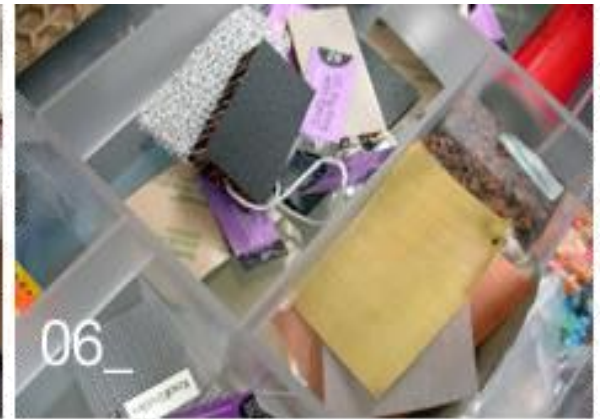
The TechBox



04_ Each drawer resembles a bento box



05_ The curator keeps order



06_ All the entries are tagged



07_ It really is used daily



08_ Two demonstration 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

Testing prototypes to choose among alternatives



How to integrate interaction design in other models

- Lifecycle models from other disciplines
- Agile software development promising
 - have development and design running in separate tracks
 - maintain a coherent vision of the interface architecture

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