



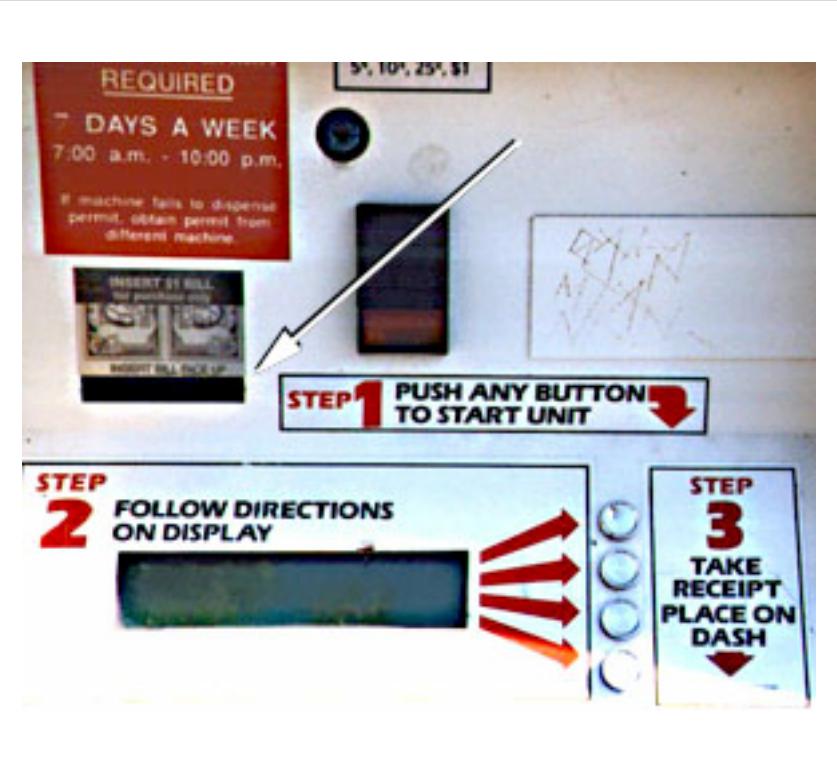
Overview of HCI/ID

8/28/18

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What makes bad design?

- Not intuitive
- Inconsistent
- Inefficient
- Lack Familiarity



What makes good design?

Marble answering machine
(Bishop, 1995)

Based on how everyday objects behave

Easy, intuitive and a pleasure to use

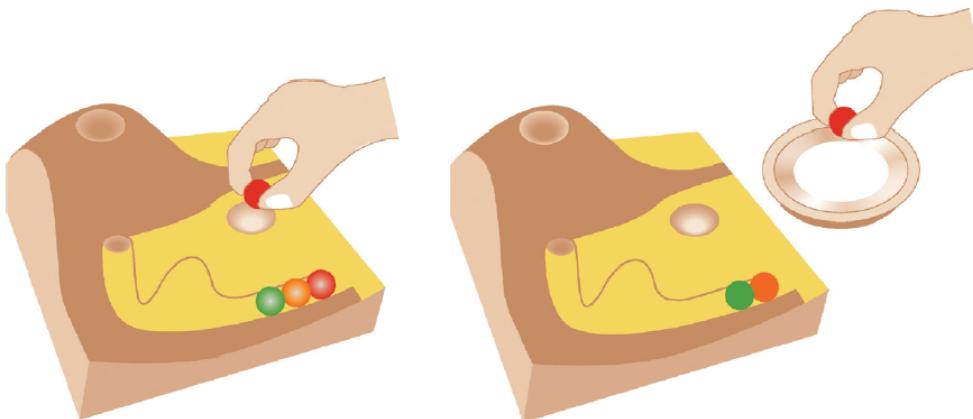


Figure 1.1 The marble answering machine

Source: Adapted from Gillian Crampton Smith: "The Hand that Rocks the Cradle" *ID Magazine*, May/June 1995, pp. 60–65.

Good and bad design

Why is the TiVo remote so much better designed than standard remote controls?

- Peanut shaped to fit in hand
- Logical layout and color-coded, distinctive buttons
- Easy to locate buttons

See:

<http://gizmodo.com/5017972/story-of-a-peanut-the-tivo-remotes-untold-past-present-and-future>



What to design

Need to take into account:

- Who the users are
- What activities are being carried out
- Where the interaction is taking place

Need to optimize the interactions users have with a product:

So that they match the users' activities and needs

Understanding users' needs

- Need to take into account what people are good and bad at
- Consider what might help people in the way they currently do things
- Think through what might provide quality user experiences
- Listen to what people want and get them involved
- Use tried and tested user-centered methods

| What is interaction design and how is it different than HCI for our purposes? It's not.

“Designing interactive products to support the way people communicate and interact in their everyday and working lives.”

Preece, Sharp and Rogers (2015)

“The design of spaces for human communication and interaction.”

Winograd (1997)

The many flavors of HCI

- Human Computer Interaction
- Human-centered Computing
- Interaction Design
- Usability Design
- Usability Engineering
- User-centered Design
- Experience Design

Relationship between HCI and other fields

Academic disciplines contributing to ID:

- Psychology
- Social Sciences
- Computing Sciences
- Engineering
- Ergonomics
- Informatics

Relationship between HCI and other fields

Interdisciplinary fields that ‘do’ HCI:

- Ubiquitous Computing
- Human Factors
- Cognitive Engineering
- Cognitive Ergonomics
- Computer Supported Co-operative Work
- Information Systems

What do professionals do in the ID business?

- **interaction designers** - people involved in the design of all the interactive aspects of a product
- **usability engineers** - people who focus on evaluating products, using usability methods and principles
- **web designers** - people who develop and create the visual design of websites, such as layouts
- **information architects** - people who come up with ideas of how to plan and structure interactive products
- **user experience designers (UX)** - people who do all the above but who may also carry out field studies to inform the design of products

The User Experience

How a product behaves and is used by people in the real world

- the way people feel about it and their pleasure and satisfaction when using it, looking at it, holding it, and opening or closing it
- “every product that is used by someone has a user experience: newspapers, ketchup bottles, reclining armchairs, cardigan sweaters.” (Garrett, 2010)
- “all aspects of the end-user's interaction with the company, its services, and its products. (Nielsen and Norman, 2014)

Cannot design a user experience, only design *for* a user experience

Activity 1: The User Experience

- May do this individually or in a team
- Identify a good and bad user experience (can be a technology, a product, a store, etc.)
 - What makes it good or bad?
 - Is your user experience subjective?
- 10 minutes

Activity 2: The User Experience: Disney World

- Disney World is often identified as the ultimate user experience (Don Norman)
- Highlight every detail you can think of that would lead one to identify Disney World as an optimal user experience?
- 10 minutes



Core characteristics of interaction design

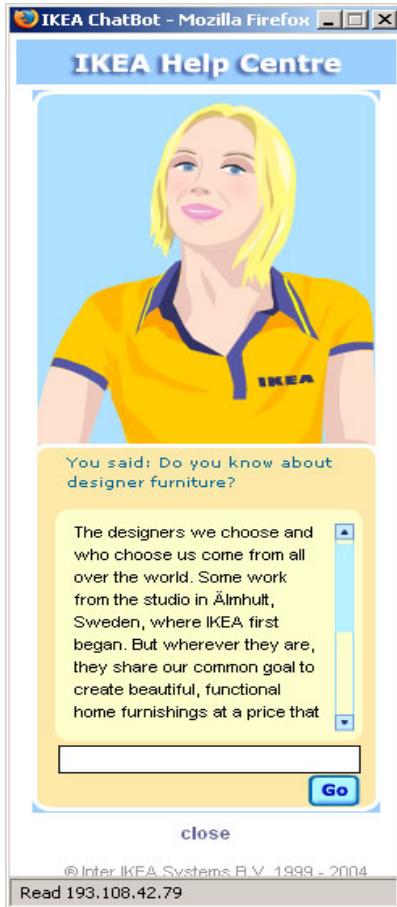
Users should be involved through the development of the project

Specific usability and user experience goals need to be identified, clearly documented and agreed at the beginning of the project

Iteration is needed through the core activities

Important aspects to consider...

- Culture
- Accessibility



Usability goals

- Effective to use
- Efficient to use
- Safe to use
- Have good utility
- Easy to learn
- Easy to remember how to use

User experience goals

Desirable aspects

satisfying	helpful	fun
enjoyable	motivating	provocative
engaging	challenging	surprising
pleasurable	enhancing sociability	rewarding
exciting	supporting creativity	emotionally fulfilling
entertaining	cognitively stimulating	

Undesirable aspects

boring	unpleasant
frustrating	patronizing
making one feel guilty	making one feel stupid
annoying	cutesy
childish	gimmicky

Design principles

- Generalizable abstractions for thinking about different aspects of design
- The do's and don'ts of interaction design
- What to provide and what not to provide at the interface
- Derived from a mix of theory-based knowledge, experience and common-sense

Visibility



- This is a control panel for an elevator
- How does it work?
- Push a button for the floor you want?
- Nothing happens. Push any other button? Still nothing. What do you need to do?

It is not visible as to what to do!

Visibility



...you need to insert your room card in the slot by the buttons to get the elevator to work!

How would you make this action more visible?

- make the card reader more obvious
- provide an auditory message, that says what to do (which language?)
- provide a big label next to the card reader that flashes when someone enters
- make relevant parts visible
- make what has to be done obvious

Feedback

- Sending information back to the user about what has been done
- Includes sound, highlighting, animation and combinations of these
 - e.g. when screen button clicked on provides sound or red highlight feedback:

 → “ccclichhk”

 → 

Constraints

- Restricting the possible actions that can be performed
- Helps prevent user from selecting incorrect options
- Physical objects can be designed to constrain things
 - e.g. only one way you can insert a key into a lock

Consistency

Design interfaces to have similar operations and use similar elements for similar tasks

For example:

- always use ctrl key plus first initial of the command for an operation – ctrl+C, ctrl+S, ctrl+O

Main benefit is consistent interfaces are easier to learn and use

Affordances

- Refers to an attribute of an object that allows people to know how to use it
 - e.g. a mouse button invites pushing, a door handle affords pulling
- Norman (1988) used the term to discuss the design of everyday objects
- Since has been much popularised in interaction design to discuss how to design interface objects
 - e.g. scrollbars to afford moving up and down, icons to afford clicking on

Activity 3: Affordances of Websites

- Go to any website
- Identify every affordance on the website
 - Explain why it is an affordance
 - Explain if it is well designed affordance or not
- 10 minutes

