User Interface Software Projects

Assoc. Professor Donald J. Patterson
INF 134 Winter 2012

Wednesday, January 11, 12

Interaction design basics

What is design?

Achieving Goals Within Constraints

Achieving Goals Within Constraints

- goals
  - who is it for?
  - why do they want it?
  - what is the designer trying to achieve?
- constraints
  - materials, platforms
- trade-offs

interactions and interventions

- Designing interactions not just interfaces
  - not just the immediate interaction
  - e.g. stapler in office – technology changes interaction style
    - manual: write, print, staple, write, print, staple, …
    - electric: write, print, write, print, …, staple

- designing interventions not just artifacts
  - not just the system, but also …
    - documentation, manuals, tutorials
  - what we say and do as well as what we make

Understand your materials

Understand your materials

Understand your materials

- For Human-Computer Interactions
  - understand computers
    - limitations, capacities, tools, platforms
  - understand people
    - psychology, social
    - expect human error
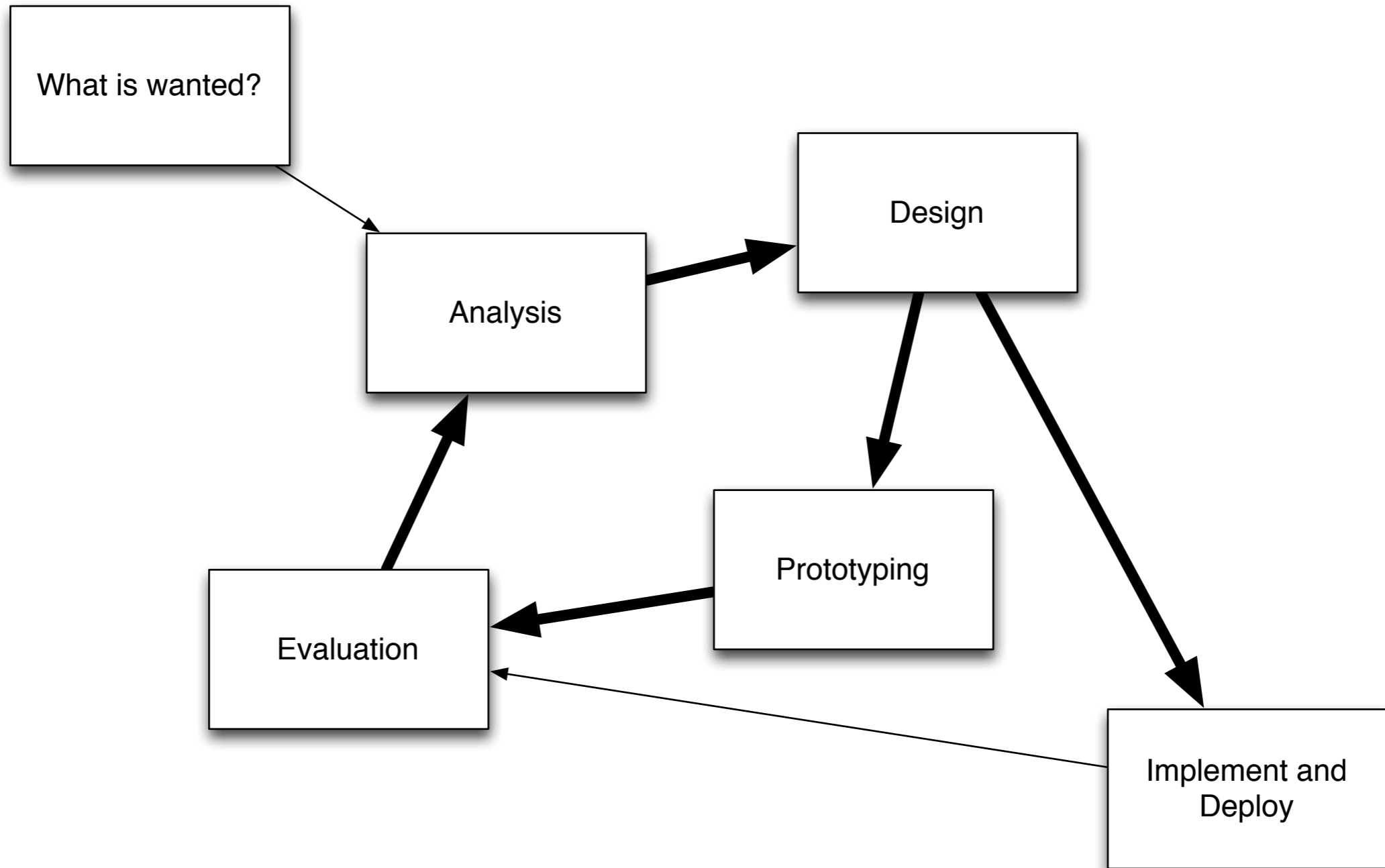 - understand the interaction between them

To err is human

- accident reports ..
  - air crash, industrial accident, hospital mistake
  - inquiry … blames … 'human error'
- but …
  - concrete platform breaks because too much weight
  - blame 'platform error' ?
    … no – it's a design error
    we know how concrete behaves under stress
- human 'error' is normal
  - we know how users behave under stress
  - so design for it!
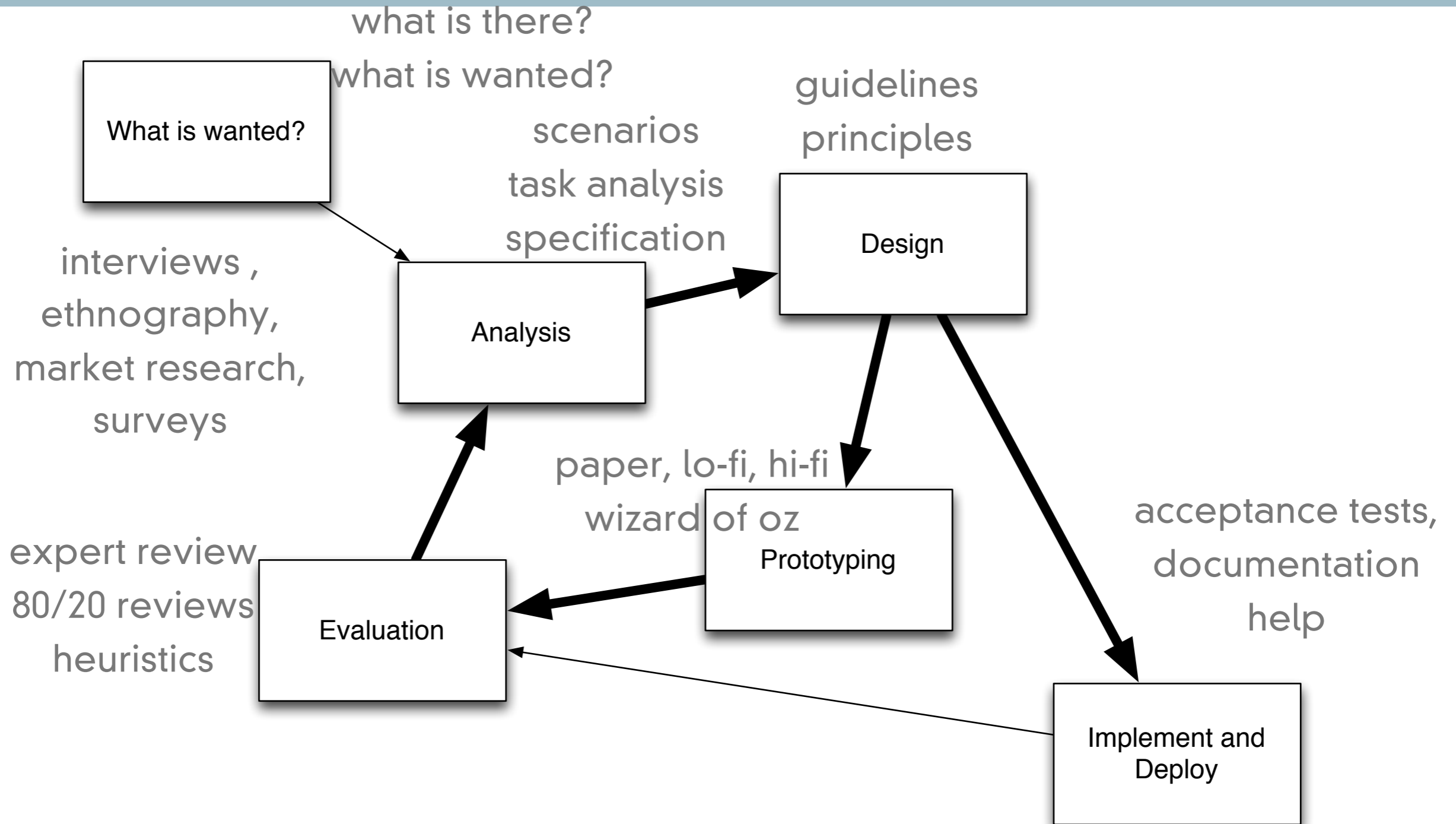- treat the user at least as well as physical materials

Focus on the user

Design Process

What is wanted? → Analysis → Design

Design → Prototyping

Design → Implement and Deploy

Prototyping → Evaluation

Evaluation → Analysis

Implement and Deploy → Evaluation

Design Process

What is wanted?

what is there?
what is wanted?
scenarios
task analysis
specification

guidelines
principles

Analysis

Design

interviews ,
ethnography,
market research,
surveys

paper, lo-fi, hi-fi
wizard of oz

Prototyping

acceptance tests,
documentation
help

expert review
80/20 reviews
heuristics

Evaluation

Implement and
Deploy

Steps...

- requirements
  - what is there and what is wanted ...
- analysis
  - ordering and understanding
- design
  - what to do and how to decide
- iteration and prototyping
  - getting it right ... and finding what is really needed!
- implementation and deployment
  - making it and getting it out there

What is interaction design?

Content derived from Rogers, Sharp and Preece http://www.id-book.com/

- Elevator controls and labels on the bottom row all look the same, so it is easy to push a label by mistake instead of a control button
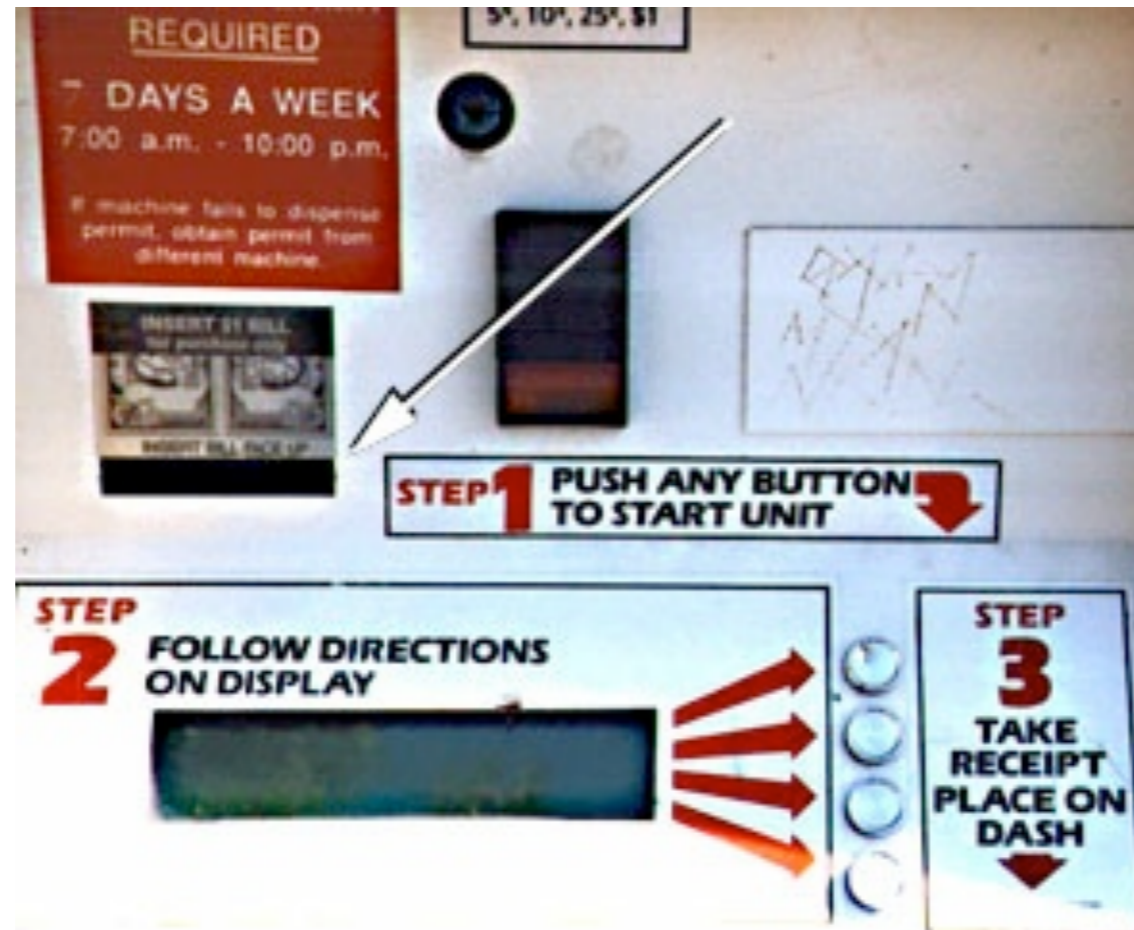

- People do not make same mistake for the labels and buttons on the top row. Why not?
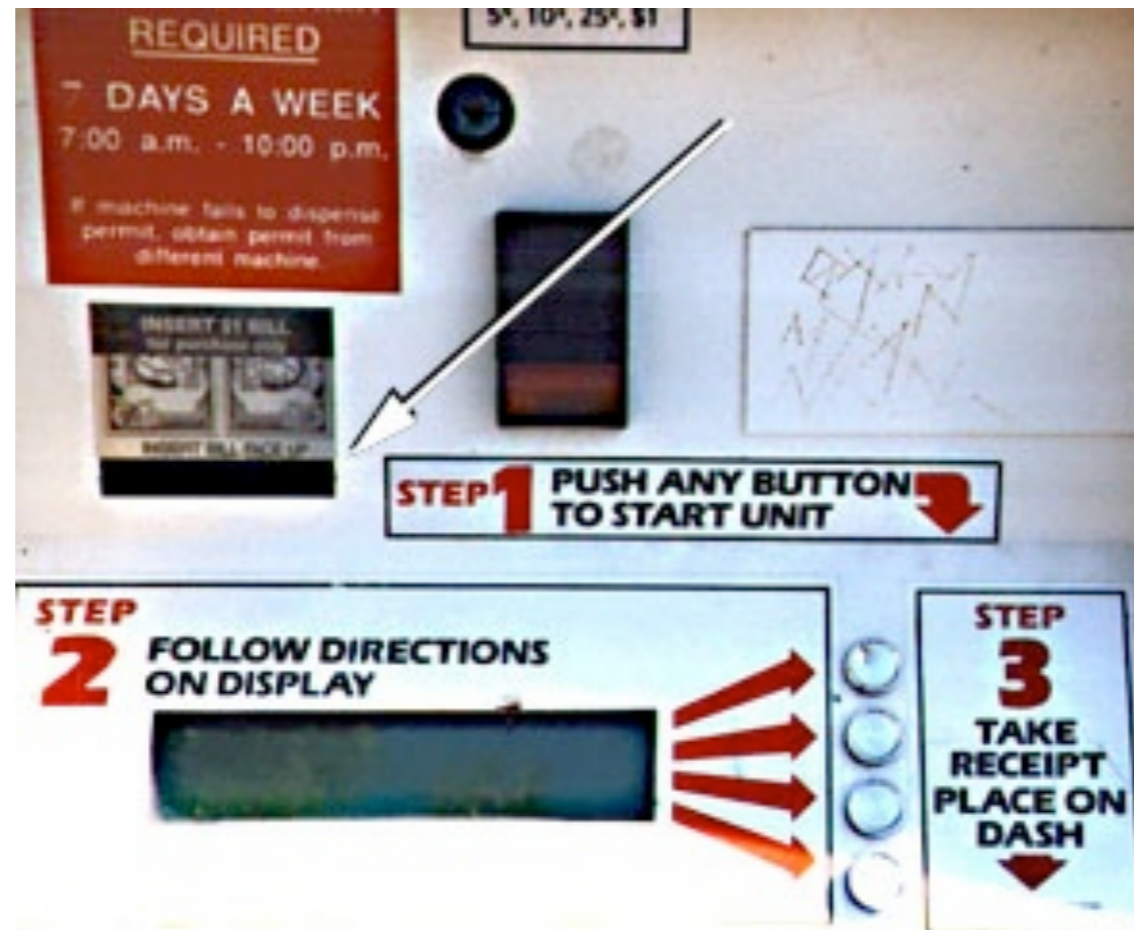
From: www.baddesigns.com

Bad Designs

- Why is this vending machine so bad?

Wednesday, January 11, 12

- Why is this vending machine so bad?

- Need to push button first to activate reader
- Normally insert bill first before making selection
- Contravenes well known convention

From: www.baddesigns.com

- Marble Answering Machine by Bishop

- Based on how everyday objects behave
- Easy, intuitive and a pleasure to use
- Only requires one-step actions to perform core tasks

http://vimeo.com/19930744

- Which remote is better designed?

Good and Bad Designs

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

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