

# Designing and testing a consumer digital camera

Micah Alpern

# Usability in Current Cameras

## – Multiple modes

- Auto mode, manual mode, review mode, setup mode, movie

## – Same Controls different Results



# Design Goal

- To reduce or eliminate modes
  - Makes the system state more visible
  - Helps the user learn the controls
    - the same buttons have the same results

# Design Challenge

- If no modes:
  - how switch between taking new pictures and reviewing old ones?
- Borrowing from a web browser metaphor I used forward and back arrows.

# Usability in Current Cameras



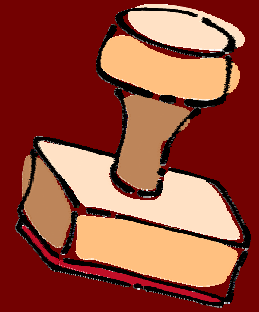
## ■ Design Goal:

- Stress physicality
- minimize menus

# Paper Based Design Iteration

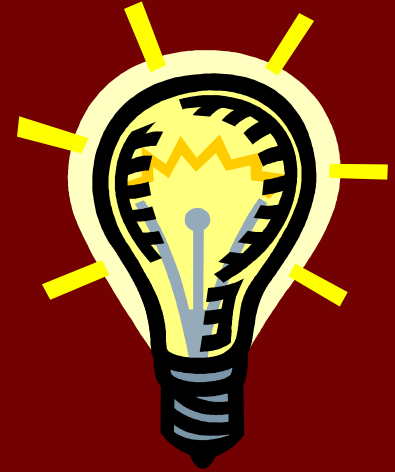
- Things Learned:
  - Labels are Important
  - Light isn't
  - 'Quality' is problematic

# Labels are Important



- Arrows were not initially labeled
  - Added 'Back' and 'Forward'
- Delete Button
  - Trash Icon
  - Added 'trash' label
  - Replaced with 'Delete' and a red X

# Light



- Difficulty turning on/off the flash
  - Relationship between button and screen icon
  - Wanted it automatic
- Quality?!
  - Users thought this meant light quality
  - A picture is a picture
    - Different resolutions are a foreign concept to novice digital camera users



- High water mark in design usability, but ..

Then came

# The Setup



# Steps for using Setup

- Enter setup
- Move focus  
between options
- Selection option
- exit



# User Errors

- Misinterpreted
  - Everyone hit setup
- Got stuck
  - Couldn't make selection
  - Couldn't exit



# Changes to Design

- Change from Setup to Prefs and Shrink button
- Move and Pause
  - 10 sec after a move and pause, auto select current option with visual and audio feedback
- Every button selects

# New Errors

- Pushing the screen



# Conclusions

- Adding the setup button was a mistake
  - reintroduces modes
    - inconsistent control mappings
    - overloaded function keys
  - with another iteration:
    - replaced setup with an, 'auto/off' flash switch
    - Remove ability to change resolution
- With proper labeling arrow keys worked well to reduce modes.