CS 352
Introduction to Usability Engineering

Foundations & Strategies

Attention Investment

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Attention Investment

- How users behave in problem-solving situations

- Deals with "deeper" problem-solving
  - Not how a user finds the right button given the goals/subgoals we wish he/she had

- One example of "deep" problem-solving:
  - Programming

Attention Investment (cont)

- In getting things done, **attention** (not information) is a scarce resource
- **Cost** is in attention units (i.e. time)
  - Some costs are **investments**, with (hopefully) **payoff** of reduced future cost of your work
  - Not all costs are investments
    - Eg reading flash advertisements that appear while I'm doing something else
- **Risk**: probability that cost will be lost (i.e. no payoff)

Attention Investment (cont)

- Based on attention units and probabilities:
  - (perceived) Cost = attention units to get work done
    - Investment: has a cost and potential reward
  - (perceived) Payoff = reduced future cost
    - There is also a reward for getting work done, but we have no units for this
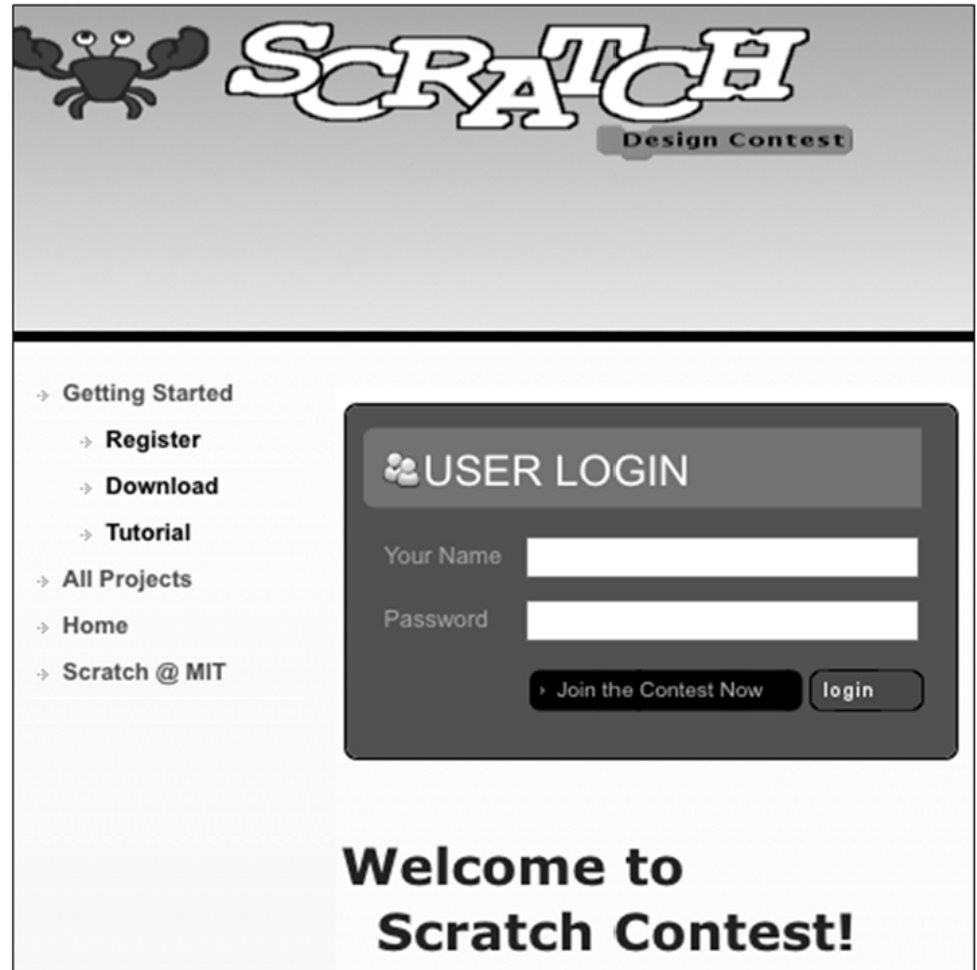 - (perceived) Risk = probability of no payoff, or a future cost imposed as a result

Example #1

I am thinking of creating a spreadsheet

- This will **cost** me some **attention**

- This is an **investment** because there is a potential **payoff**:

  – Note the **units** of costs and payoffs

- There is a **risk** (probability) I'll get formulas wrong, costing future attention to fix.

Example #2

- Early version of Scratch programming contest

Example #2 (cont)

- Perceived amount of cost/investment (time)?

- Perceived payoff and/or external reward?

- Perceived risk (probability)?

Example #2 (cont)

- Thought Experiment

- What would you change to improve the attention investment payoff?

Conclusion:
Attention Investment is…

- A way to understand user's action choices.

- A design-time mechanism for making informed design choices.

  - **Much cheaper than finding problems after building a system**.

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Activity

- In your team:
  - Use your prototype to walk through what a user would do to perform the task in your UI
  - At each step where a user has a choice list-
    - PERCEIVED cost of each choice
      - Is ti an outright cost or an investment?
    - PERCEIVED payoff and/or external reward
    - PERCEIVED risk