
SIntS 11/12 – T5

Iterative HCI Design Process

Mestrado em Informática Médica

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Acknowledgements: Most of this course is based on the excellent course offered by Prof. Kellogg Booth at the British Columbia University, Vancouver, Canada. Please acknowledge the original source when reusing these slides for academic purposes.

Summary

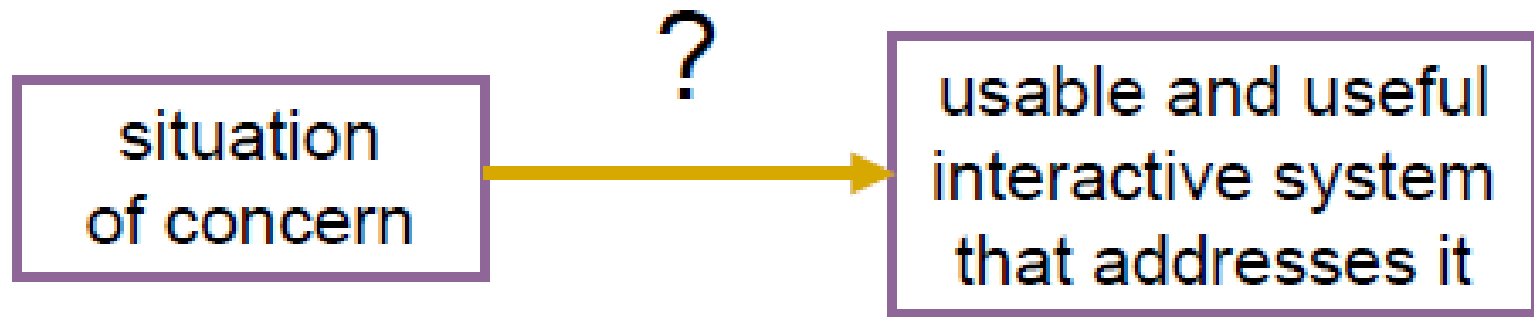
- Evaluation as the key to good design.
- Iterative HCI Design
- Design Methods
- Stakeholders

Review

Conceptual models: **Learning goals**

- People have “**mental models**” of how things work
- We **build** our conceptual models from **many things**, inc:
 - affordances
 - causality
 - constraints
 - mapping
 - positive transfer
 - population stereotypes/cultural standards
 - instructions
 - interactions (inc. w/ other people)
 - familiarity with similar devices (positive transfer)
- Models **may be wrong**, esp. if attributes are misleading
- Models allow us to **mentally simulate** device operation
- The designer has control over the **system image**

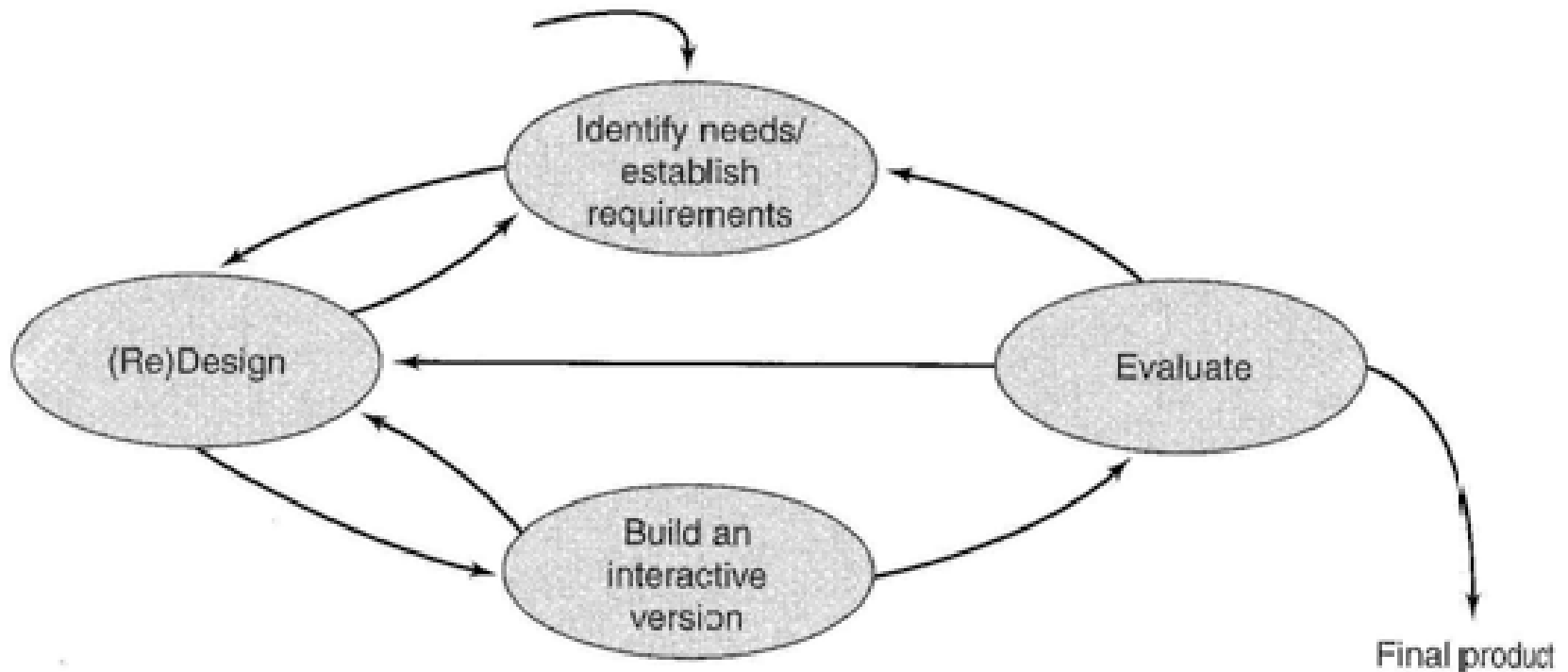
Design Process



Different design process models have been proposed

Who and what are these models for?

Simple interaction design model

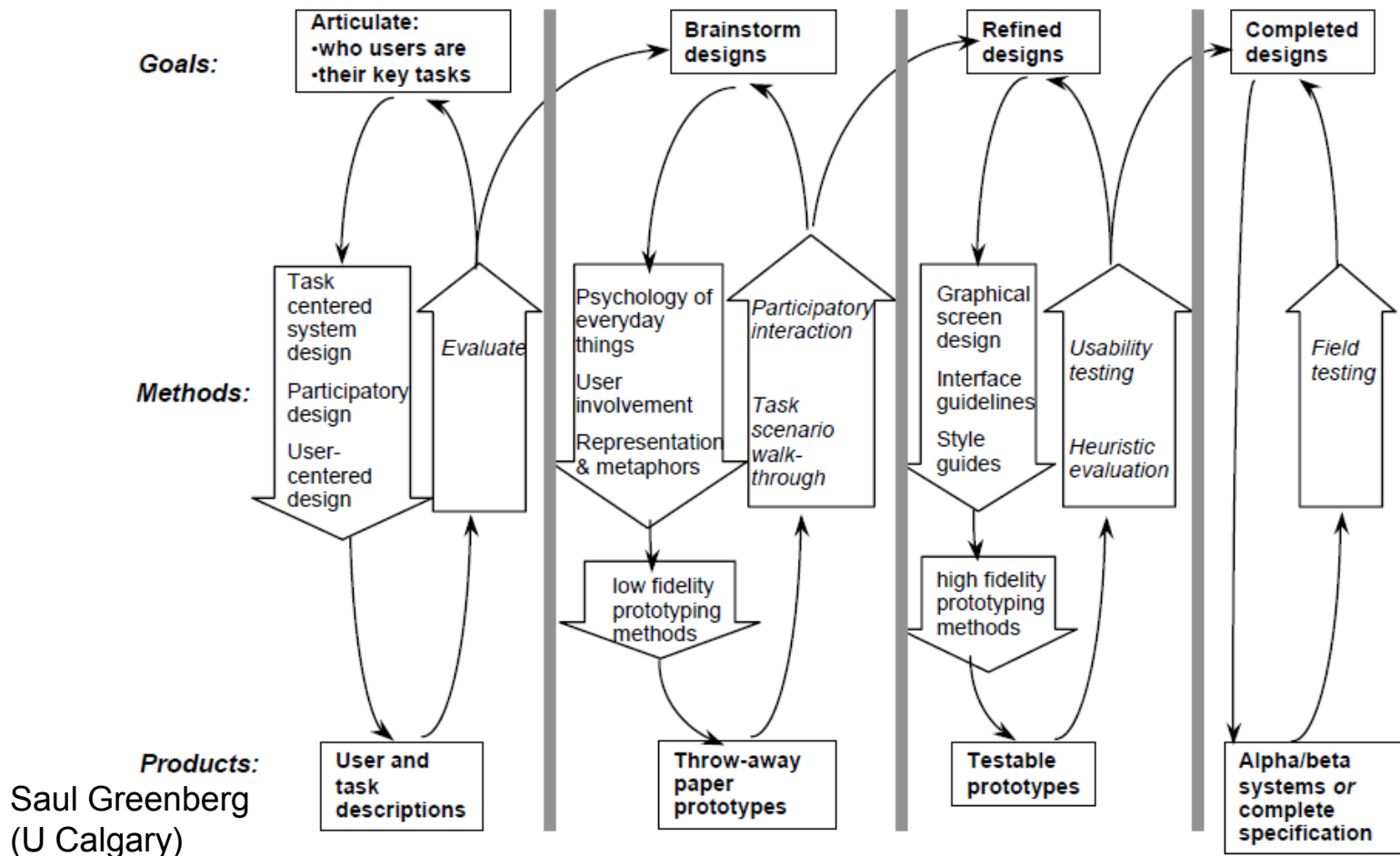


Interaction Design: Beyond Human Computer Interaction
Preece, Rogers & Sharpe, 2002

Four components

1. **Identify needs/establish requirements:**
 - Core to design process – know thy user!
2. **Developing alternative designs**
 - Includes both conceptual design and physical design
3. **Building interactive versions of the designs**
 - Not necessarily software: create prototypes (including simple mock-ups) that can be evaluated by users
4. **Evaluating designs**
 - Ideally involving users at every stage, feeding evaluations back into the design process
 - Much easier to do if clear usability and user experience goals have been identified up front

Interface Design and Usability Engineering



Products:
Saul Greenberg
(U Calgary)

Bowing to reality

- What makes it hard to follow the “ideal” process?
 - Deadlines
 - Budget
 - Access to appropriate users
 - Involvement late in design cycle
 - Valuation of HCI input by other parts of the organization

What do you do then?

Stakeholders

Stakeholder = anyone who has some reason to care about the interface

- Can be lots of them!
 - Needs may conflict
-
- User: convenience, functionality, ...
 - Boss: price, worker efficiency
 - Developer: ease of development - deadlines, budget
 - Manufacturer: cost of production
 - Advertiser: visibility
 - ... more

How to figure out who your stakeholders are

- Who will ask for it?
- Who will use it?
- Who will decide whether to use it (or if someone else will use it?)
- Who will pay for it?
- Who has to make (design / build) it ?
- Who has to make a profit from it?
- Who will otherwise make your life miserable if they don't like it?
- ???

roadmap to evaluation types

pre-design

ethnography
interviews,
focus groups
questionnaires,
surveys

early design

interviews,
focus groups,
observation
questionnaires,
surveys
contextual inquiry &
work modeling
task analysis,
task / cognitive
walkthroughs
participatory design
heuristic evaluation

mid-late design

observation,
interviews,
questionnaires
*using advanced
prototypes*
heuristic evaluation
formal
performance /
usability testing

→ *evaluation material (prototype) evolves* →

pre design

early design

mid-late design

Goals:

Articulate:
-who users are
-their key tasks

Brainstorm
designs

Refined
designs

Completed
designs

Methods:

Task
centered
system
design

Evaluate

Psychology of
everyday
things
User
involvement
Representation
& metaphors

*Participatory
interaction*
*Task /
Cognitive
scenario
walk-
through*

Graphical
screen
design
Interface
guidelines
Style
guides

*Usability
testing*
*Heuristic
evaluation*

*Field
testing*

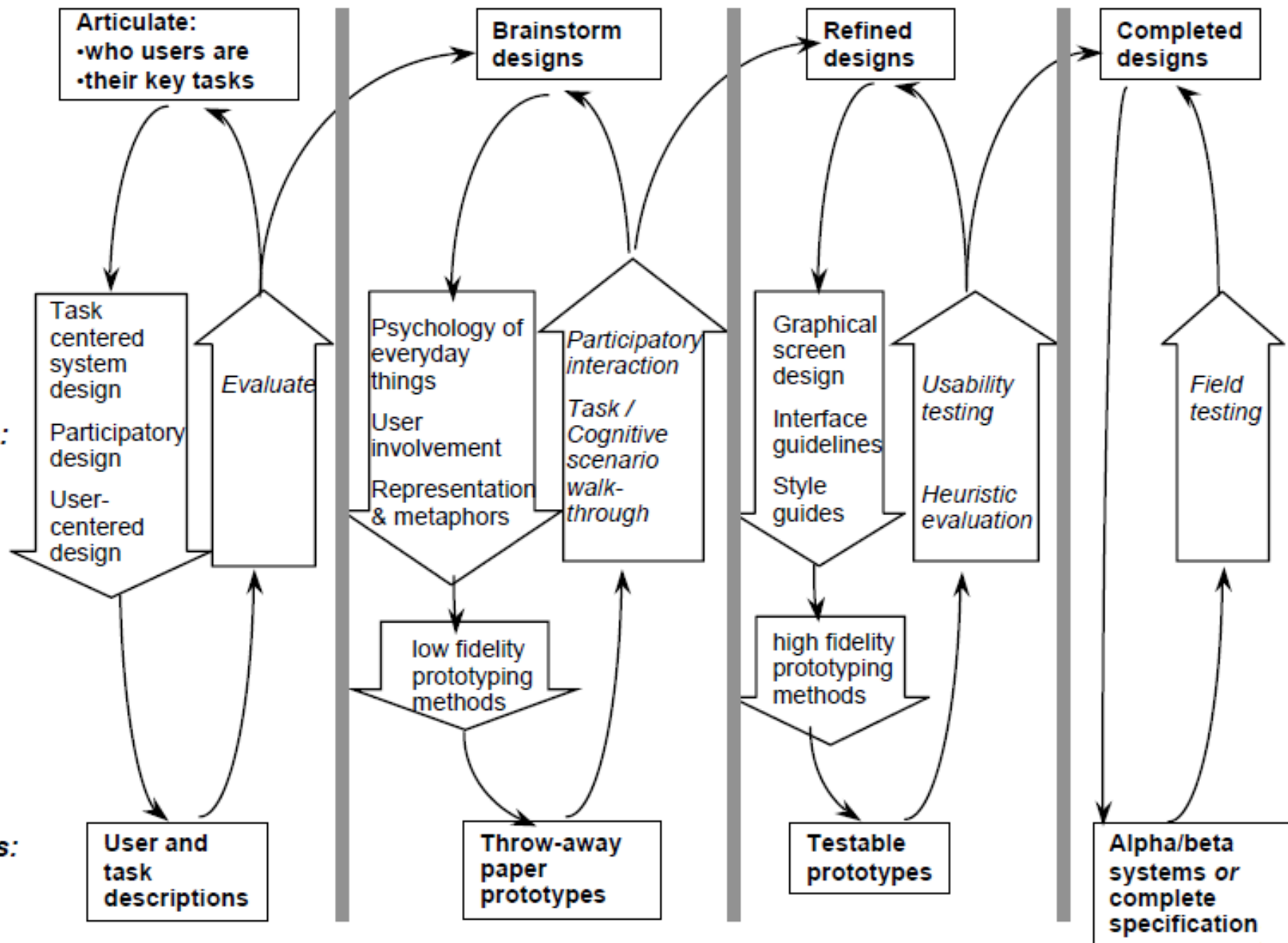
Products:

**User and
task
descriptions**

**Throw-away
paper
prototypes**

**Testable
prototypes**

**Alpha/beta
systems or
complete
specification**



Important things for today

- Design is an iterative process
 - Evaluation is key!
- There are several HCI design models
 - Choose one? Adapt one?
- Identifying stakeholders
 - Vital since they are the ones that **care**.

Next: Evaluation methods

Resources

1. Kellogg S. Booth, Introduction to HCI Methods, University of British Columbia, Canada
<http://www.ugrad.cs.ubc.ca/~cs344/current-term/>