IPM 12/13 – T1.5
Iterative HCI Design Process

Licenciatura em Ciência de Computadores

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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
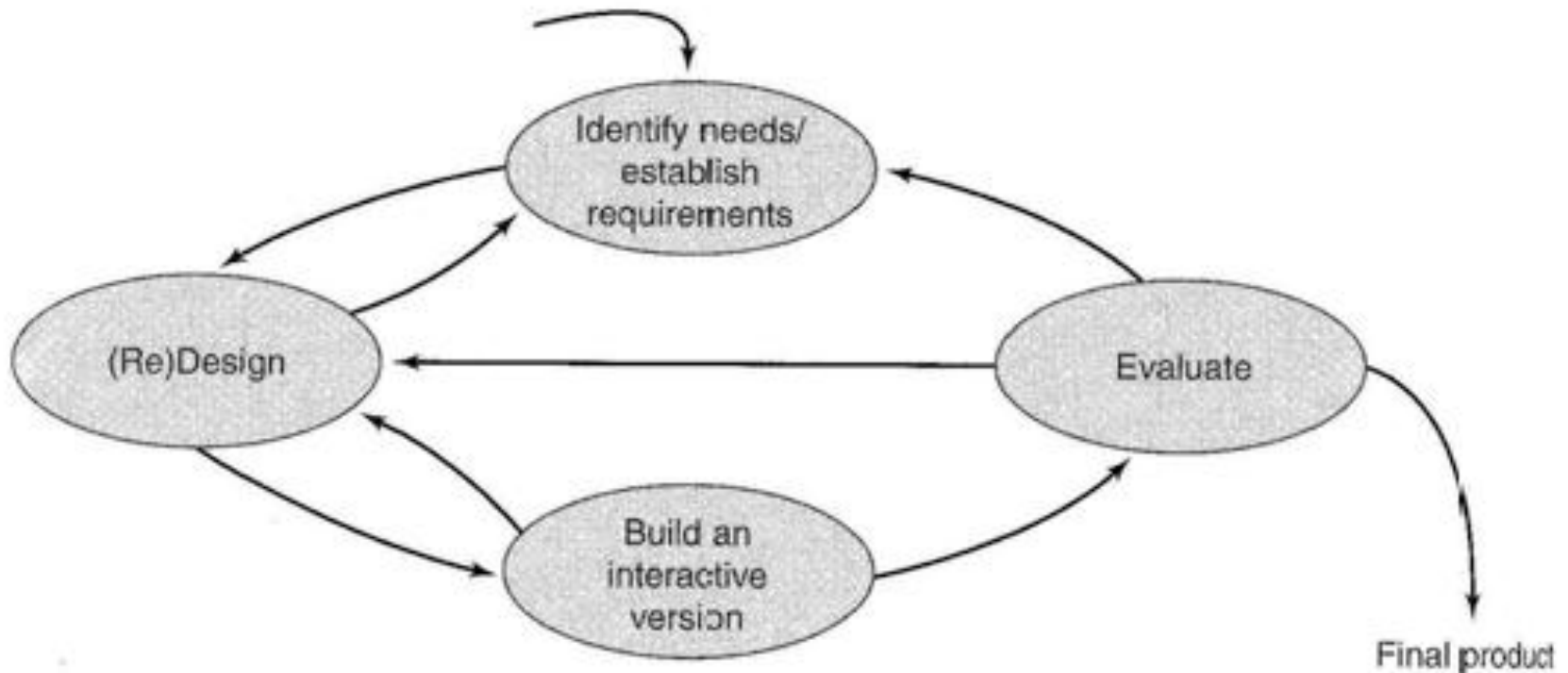- The designer has control over the **system image**

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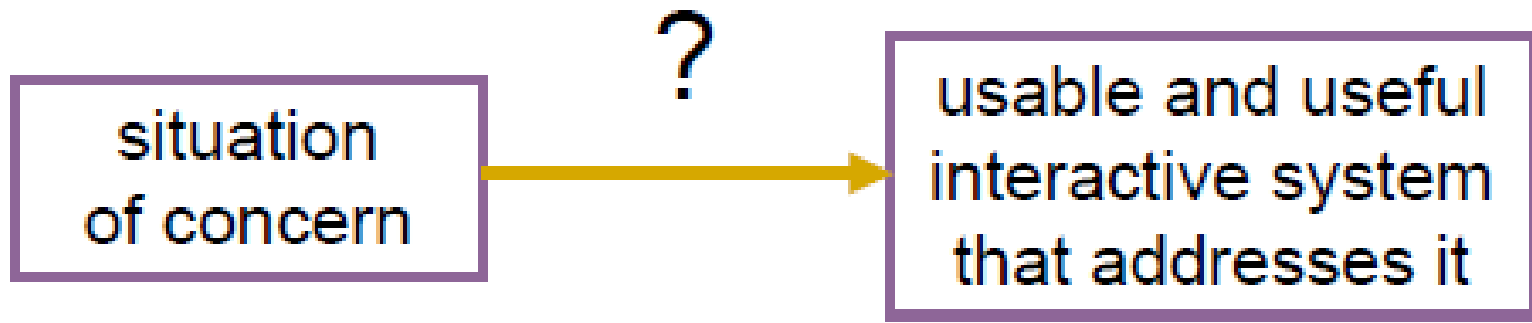
Design Process

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
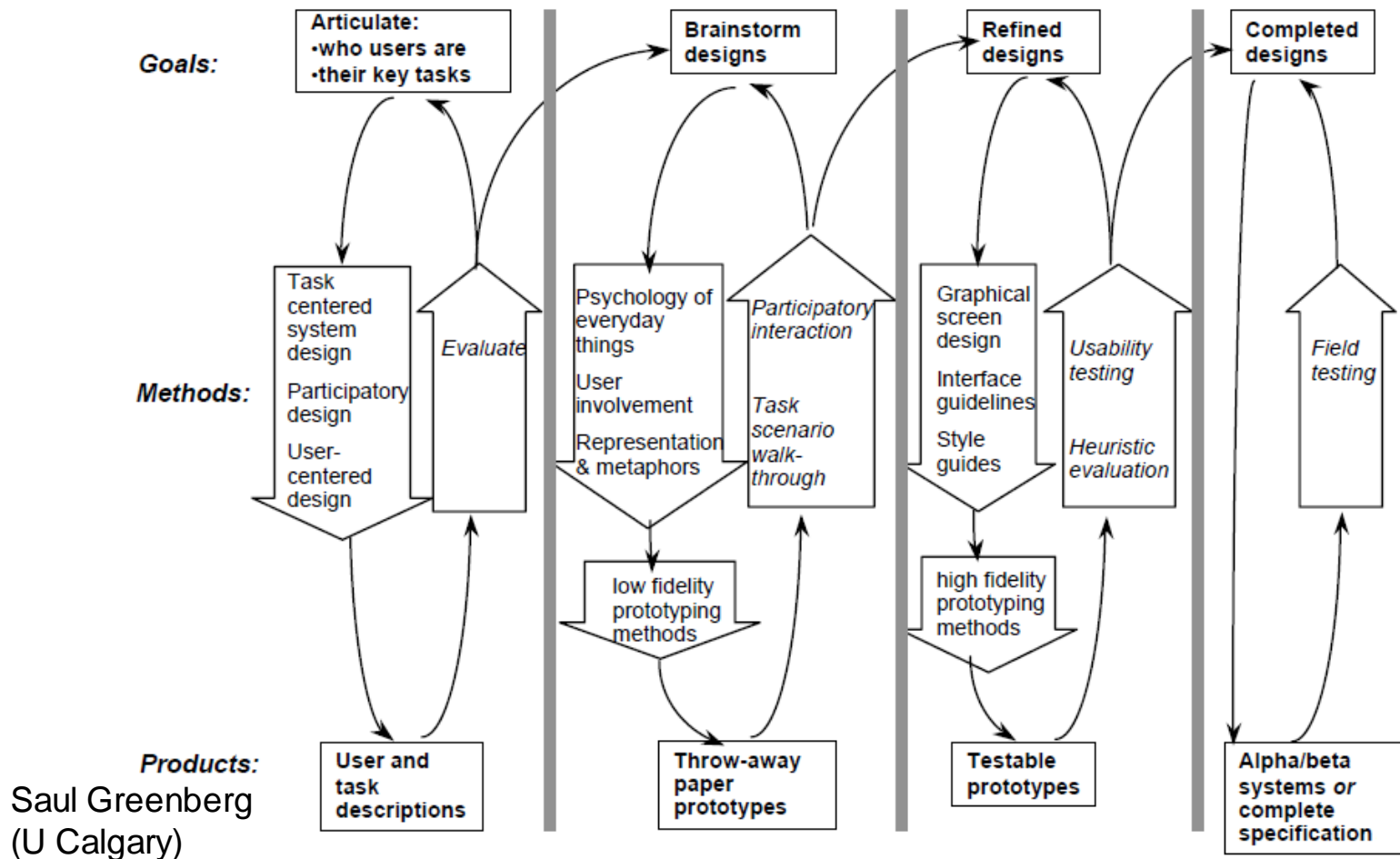
Saul Greenberg
(U Calgary)

U.PORTO FC

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?

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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

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
prototoypes*

heuristic evaluation

formal
performance /
usability testing

pre-design

ethnography

interviews,
focus groups

questionnaires,
surveys

→ *evaluation material (prototype) evolves* →

Goals:

Articulate:
- who users are
- their key tasks

Brainstorm designs

Refined designs

Completed designs

Methods:

Task centered system design

Participatory design

User-centered design

Evaluate

Psychology of everyday things

User involvement

Representation & metaphors

Participatory interaction

Task / Cognitive scenario walk-through

Graphical screen design

Interface guidelines

Style guides

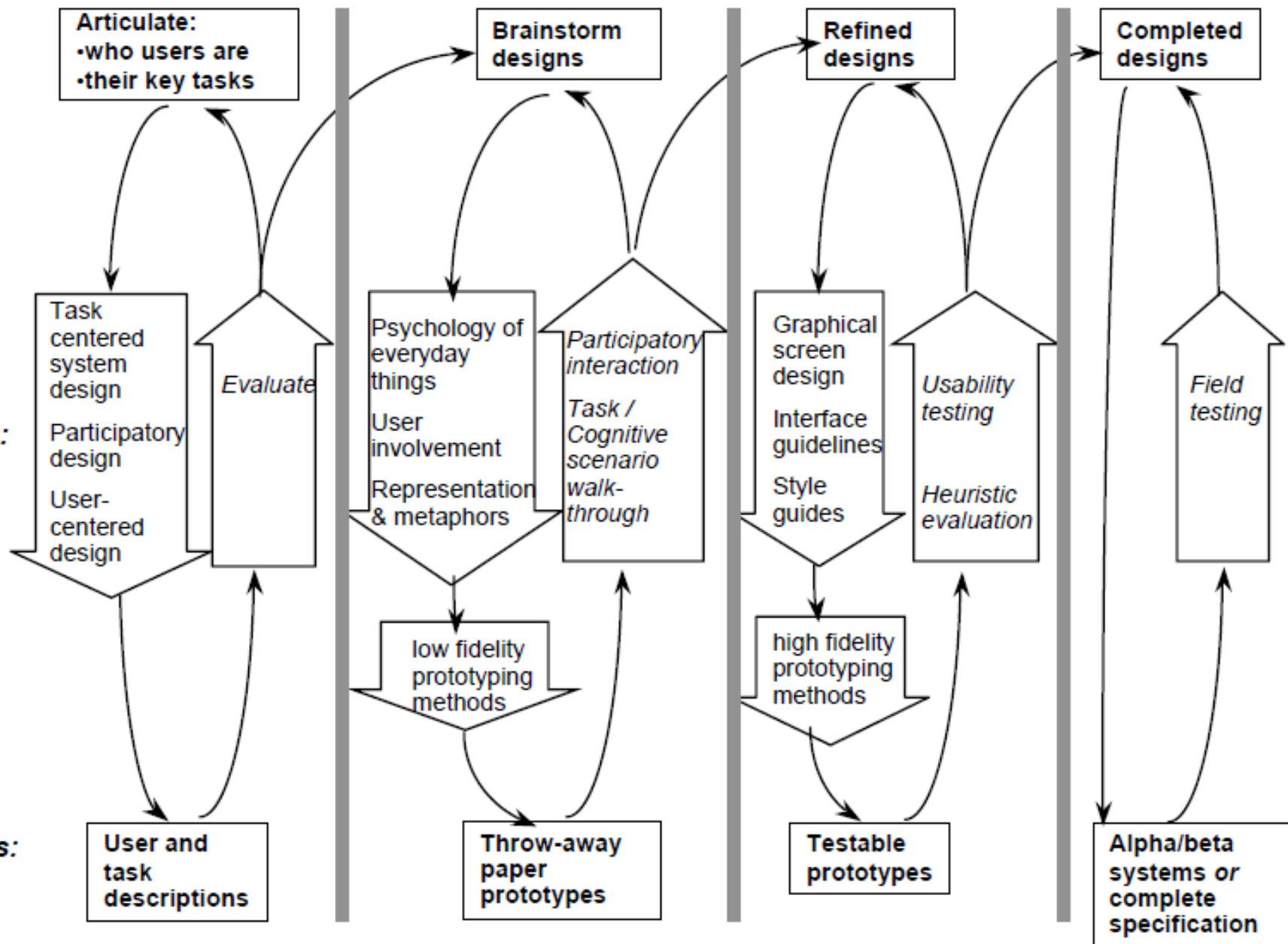*Usability testing*

Heuristic evaluation

Field testing

low fidelity prototyping methods

high fidelity prototyping methods

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/~current-term/