L13 – User-Centered Systems Design As A Process

Bengt Göransson
bengt.goransson@it.uu.se
To Structure a Development Process

• Is it important to have an explicit process? Give five motives!
  – Two by two, 5 minutes.

• Main phases in a development process?

1st activity ➔ 2nd activity ➔ 3rd activity ➔ n... activity
In Order To...

- Explain and visualize...
- Understand what to do...
- Plan a project...
- Know what to do...
- Assure quality...
- Be able to repeat, in a controlled way...
- Learn by mistakes, improve by learning...
- Communicate and sell...
Process

Does the outline (syntax and semantics) of the process matter has it any impact?
The Usability Engineering Lifecycle – Deborah Mayhew
Usage-Centered Design

Contextual Design

- Contextual Inquiry
- Interpretation Session
- Work models & Affinity Diagramming
- Visioning & Storyboarding
- User Environment Design
- Paper Mock-ups
- Interaction Design

Procedures:

1. Talk to customers while they work
   - Provides reliable knowledge about what customers actually do and what they care about
2. Interpret the data in a cross-functional team
   - Develops a shared perspective of the data
3. Consolidate data across multiple customers
   - Creates a single statement of work practice for your entire customer population
4. Invent solutions grounded in user work practice
   - Provides a way to imagine and develop better ways to work
5. Structure the system to support the new work practice
   - Represents the system for planning, marketing, UI design, and specification
6. Iterate with customer through paper mockups
   - Offers early verification of design before any ideas are committed to code
7. Design the object model or code structure for implementation
   - Defines the implementation architecture and ensures support of work structure
8. Iterate visual designs with the customer
   - Design the implementation and final interaction and visual design
Dynamic Systems Development Method – DSDM

**Figure 1.1** DSDM process diagram.
Rational Unified Process – RUP

![Diagram of the Rational Unified Process (RUP)]
Usability Design Discipline
SCRUM

- Scrum is a project management method for agile software development.
Extreme Programming Project

User Stories

Architectural Spike

Spike

Release Planning

Iteration

Acceptance Tests

Customer Approval

Small Releases

Test Scenarios

New User Story

Release Plan

Latest Version

Next Iteration

Confident Estimates

Uncertain Estimates

System Metaphor

Requirements

Uncertain Estimates

Confident Estimates

XP
This and That…

- **Usability** is a quality in use. It measures how well a product or a system supports me, as a user, in getting my work done and reach my goals in a given context.

- **User-Centered Systems Design** is an attitude to development, and a process, that leads to usable products and systems.
A User-Centered Process

Vision and plan
- define business objectives and goals
- initial concept
- plan for UCSD

Construct and deploy
- continuous focus on users and usability
- usability testing and monitoring

Analyze requirements and user needs
- users, users’ context, tasks and scenarios
- users’ needs, usability requirements and design goals

Design for usability by prototyping
- conceptual design
- interaction design
- detailed design

Feedback
plan the next iteration
- suggestion for changes
- project planning based on the outcome

Evaluate use in context
- evaluate early and continuously
- measure usability, business goals and effects

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UCSD – In Retrospect
What’s Characteristic for a User-Centered Process?

• You will get answers as you ask -> the ”art” (competence) of doing interviews, **field** and user **studies** — analysis.

• It’s just by testing you really learn what’s going to work and not -> **prototypes** and ”simple” sketches.

• Measure if it works -> **usability evaluations**.
Analysis of Users’ Work Situation – Field Studies

Observing users’ in their real work situation, at their workplace.

• To understand needs and see potential improvements.
• To understand how information is used.
• To encounter things that the users are not aware of. Things they normally don’t express.
Context of Use is Crucial
Cooperative Design Sessions

• Team exercises.
• The users cooperate in the design, not just contributes.
• A usability person is running and facilitating the session.
• Not necessarily “correct” design, but a good way of eliciting needs and exploring possibilities.
• Easier to communicate and express in pictures than in words.
Prototype Driven Design

• Paper sketches, storyboards and prototypes, evolve over time.

• Usage descriptions — starts at task level, then more detailed, down to interaction sequences and events.
Evaluation with Users

- Let users do pre-defined and realistic work tasks.
- Observe and interview.
- Not just what the users thinks (subjectively), but what they really do and experience.
- Evaluate sketches, prototypes, beta versions and releases.
- Quantitative measures against metrics (summative) and qualitative design guiding informal evaluations (formative).
- In a controlled laboratory environment or in users’ working environment.
Exercise
Exercise: Describe a User-Centered Process

• You shall propose and describe a user-centered process — a project concept, tender, in order to get a contract on redesigning SJ’s Ticket-vending Machines.

• It’s a hypothetical procurement from SJ.

• You really want to get this assignment!

• Convince the client that you are the right company for the job and that your process promise to deliver business value.
Example: SJ’s Ticket-vending Machines
The Ticket-vending Machine
Describe the Tender and the Process

• What’s the first thing you would propose todo?

• Phases and activities?

• Resources?
  – Time
  – Money

• Involving users? How? Convincing SJ to let you involve users, how?

• Choice of methods?

• How should you sell-in your process and tender?
Thank You For Cooperating!

bengt.goransson@it.uu.se