Introduction to User-Centered Design
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• What is User Experience?
• What is Design?
• What is User-Centered Design?
• What do designers do?
• What is our design process?
• How to take it home
• Questions
What is User Experience (UX)?

- User Experience is the sum experience of a user interacting with a product.

- Peter Morville

- James Melzer
What is Design?

- The aim of design is to create good user experiences.
What is Design?

- Design is a craft – an *artistic science* – that melds technology and humanity
What is User-Centered Design (UCD)?

- The user is put in the center of the design
Why UCD/UX?

- Increased customer satisfaction
- Increased user productivity/efficiency/accuracy
- Increased service/site usage and adoption
- Decreased support and training costs
- Reduced development time and costs
  - Create only the features users need
- Reduced maintenance costs
  - Do it right the first time

Adapted from Usability Professionals' Association website,
What do designers do?

- User Research
- Usability Analysis
- Information Architecture
- Interaction Design
- User Interface Design
- Visual/Graphic Design
What is our design process?

1. User Needs Assessment
2. Competitive/Comparative Analysis
3. Heuristic Evaluation
4. Personas
5. Goals, Tasks & Scenarios
6. Design Concepts
7. User Testing
1. User Needs Assessment

- Surveys
- Interviews
- Focus groups
- Advanced observation techniques
  - Field studies
  - Contextual inquiries
  - Ethnography
2. Competitive/Comparative Analysis

• Try using similar services or products in order to find out:
  – Current trends in the marketplace
  – What expectations your users will have
  – What *to* do, what *not* to do
  – Interface conventions
  – “Must have” standard features
3. Heuristic Evaluation

- Evaluate an existing interface (or new interface concept) based on set of usability criteria
- Mostly used to highlight usability problems and deficiencies
- May or may not propose usability solutions
- Identified problem areas are addressed by subsequent design work
- Normally done with expert evaluators, but it can be a valuable tool for anyone
- One detailed checklist: [http://www.stcsig.org/usability/topics/articles/he-checklist.html](http://www.stcsig.org/usability/topics/articles/he-checklist.html)
3. Heuristic Evaluation

- Visibility of system status
- Match between the system and the real world
- User control and freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- Help users recognize, diagnose, and recover from errors
- Help and documentation

4. Personas

- Models of “archetypical” users culled from user research
- Each persona is a description of one particular “typical” user of your system
- Personas may be combined if they have the same (or sometimes overlapping) goals
- Be specific, make them real
  - Pictures, posters
  - Include details about their life—humanize them
- Places the focus on specific users rather than on "everyone"
- Helps avoid “the elastic user”
4. Sample Persona

Edward (Eddie) Calhoun
- 35 years old
- IT Person, Computational Physics Department
- Came to UC Berkeley for his masters degree in CP, graduated in June of 2005.
- Hired to continue working as an IT person for the CP department, where he had done some work as a student.
- Is very good with computers (even builds his own PCs), but they aren’t his whole life
- Fell in love with Angie while a student, they are busy planning a wedding for June of 2007.
5. Goals, Tasks & Scenarios

- **Goals:**
  - Are what the user wants to do, but not how the user achieves them

- **Tasks:**
  - Describe the steps necessary to achieve the goals
  - Can vary with the available technology
  - Are broken down into steps for task analysis, and are recombined into sequence of steps for scenario development
  - Designers can reorganize, combine, or remove tasks currently performed to help users achieve their goals more efficiently

- **Scenarios:**
  - Written description of a persona achieving a goal through a set of tasks in a specific context
  - Should start technology-neutral and become more specific as the design progresses
6. Design Concepts

- Start rough
- Explore!
- Use personas to keep the users in view
- Use scenarios to inform the design
- Get frequent feedback
- Note user conventions
- Make design artifacts public
- May be expressed in a prototype for usability testing
6. User Testing

- Let users validate or invalidate the design
- Ask the user to complete selected typical tasks (from scenarios) and think aloud while they do it
- Test early in the process
- Can test with 3-5 users (or less!)
- “Formal” testing
- Measures “success”
  - Set success criteria prior to testing (best done at the project outset)
  - Compare to baseline if you have one
  - Have usability problems revealed in the heuristic evaluation been addressed?
6. User Testing

- Define what is to be tested
- Select users based on personas
- Administer the tests
- Analyze the data
- Document the findings in a brief
- Share the findings with the development team
- Determine what design changes will be made based on test results
6. Facilitating a User Test

- Explain that you are testing the product, not the user
- Distance yourself from the product
- Don’t react
- Don’t help
- No need to write down exactly what each user does – trends will emerge
- Save discussion or explanations for the end
How to take it home

• What is the climate of your institution when it comes to design?
• Do you have resources with the right skillsets for a UCD process?
• How much UCD can you reasonably accomplish in your current reality?
• Can you support UCD activity with tools and/or budget?
• Who is your primary audience?
Questions?