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Introduction to User-Centered Design

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Allison Bloodworth, Senior User Interaction Designer, University of California, Berkeley

Gary Thompson, User Experience Leader, Unicon, Inc.



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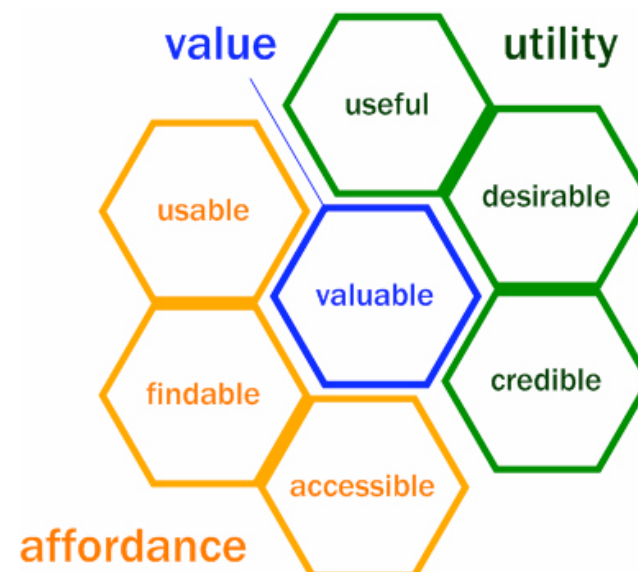
- What is User Experience?
 - What is Design?
 - What is User-Centered Design?
 - What do designers do?
 - What is our design process?
 - How to take it home
 - Questions
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What is User Experience (UX)?

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



- Peter Morville



- James Melzer

What is Design?



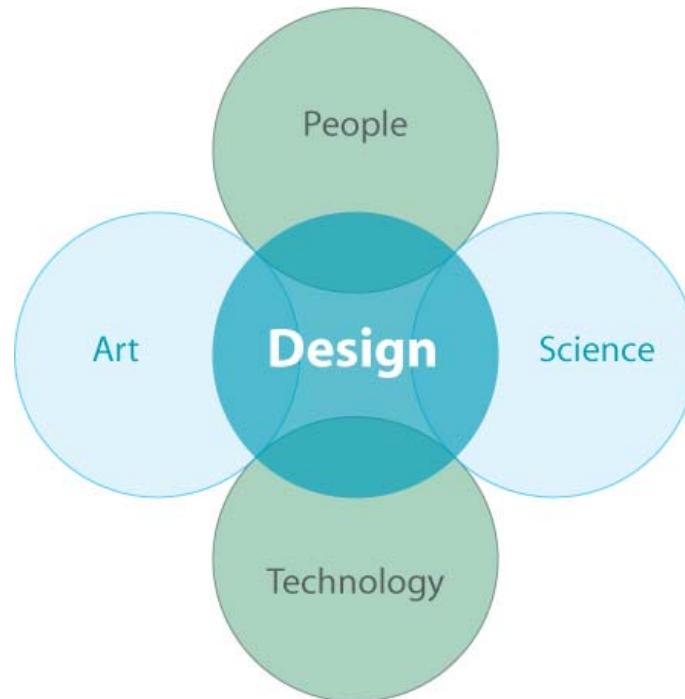
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- The aim of design is to create good user experiences.



What is Design?

- Design is a craft – an *artistic science* – that melds technology and humanity



What is User-Centered Design (UCD)?



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- The user is put in the center of the design



Why UCD/UX?



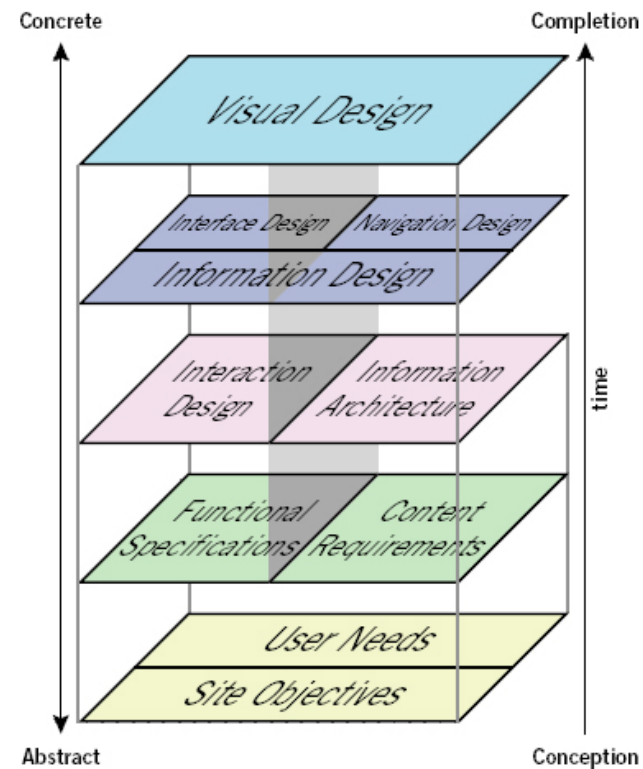
- Increased customer satisfaction
- Increased user productivity/efficiency/accuracy
- Increased service/site usage and adoption
- Decreased support and training costs
- Reduced development time and costs
 - Create only the features users need
- Reduced maintenance costs
 - Do it right the first time

What do designers do?

- User Research
- Usability Analysis
- Information Architecture
- Interaction Design
- User Interface Design
- Visual/Graphic Design



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- Jesse James Garrett

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
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1. User Needs Assessment

- Surveys
 - Interviews
 - Focus groups
 - Advanced observation techniques
 - Field studies
 - Contextual inquiries
 - Ethnography
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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
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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>
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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”
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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.
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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
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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



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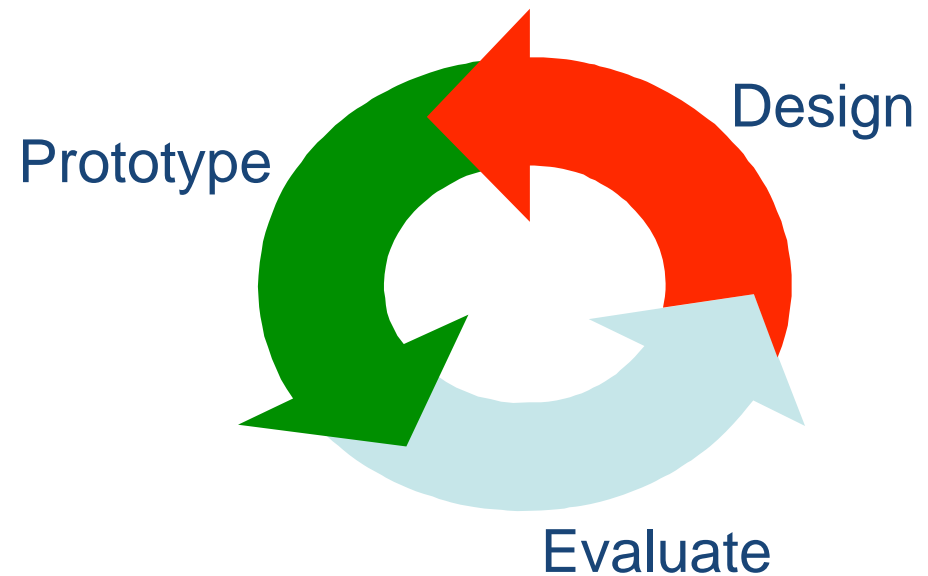


Image courtesy of James Landay

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?
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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
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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
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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?
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Questions?



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