User Centered Design for Mobile Applications

BOB MORSE

DA VINCI USABILITY

What is user centered design?

- A process for incorporating user needs into the design of a product or system.
  - Who will use the product or system?
  - How will they use it?
  - How do you design the product/system to meet user needs?

My Background

- UI/UX Consulting

- I do: usability, user centered design, user experience design, information architecture, human factors, UI design, visual design...

- For: client applications, web applications, web sites, mobile apps, phone systems...

Key Principals of UCD (from ISO definition)

- The design is based upon an explicit understanding of users, tasks and environments.
- Users are involved throughout design and development.
- The design is driven and refined by user-centered evaluation.
- The process is iterative.
- The design addresses the whole user experience.
- The design team includes multidisciplinary skills and perspectives.
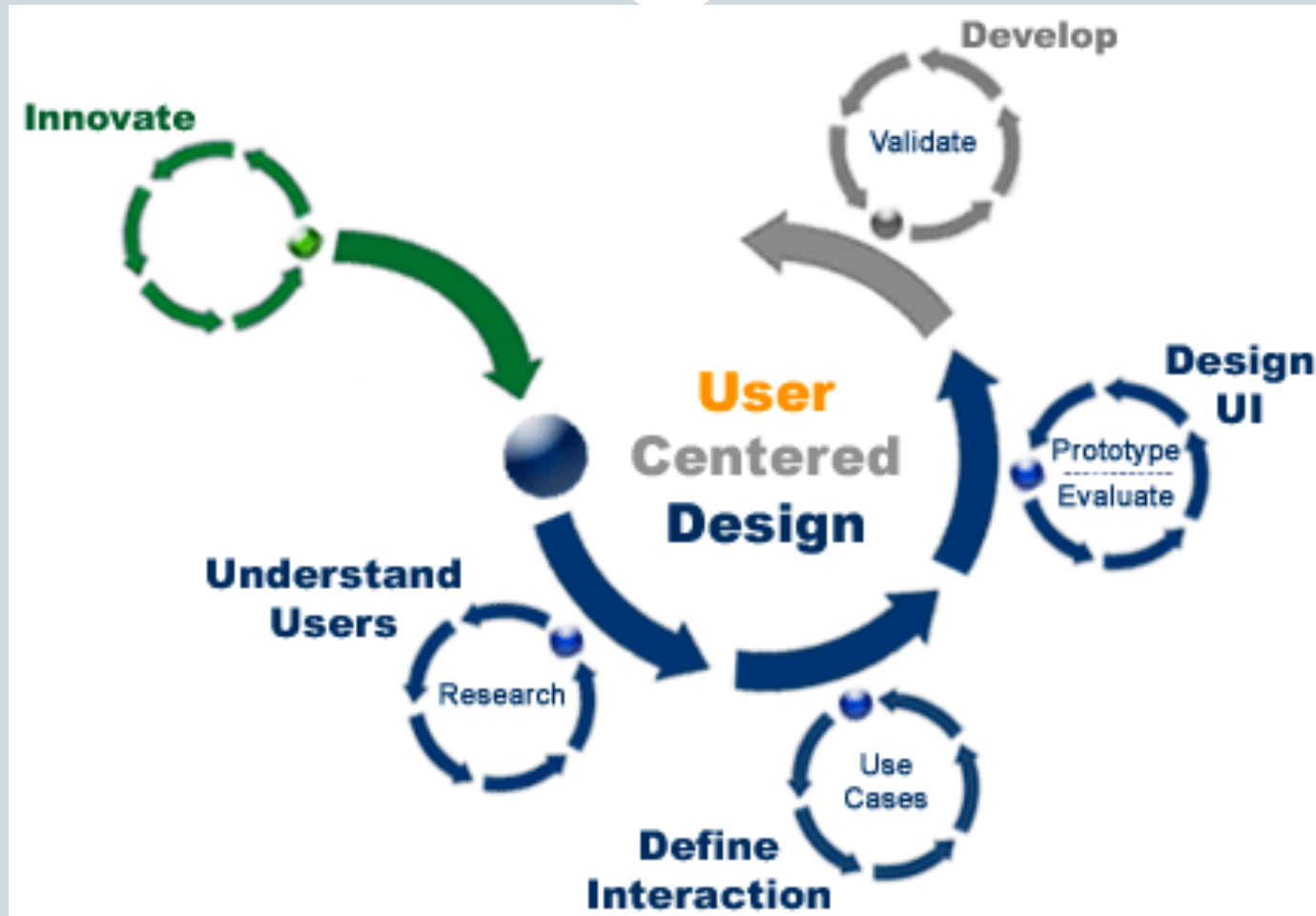- (ISO 9241-210, 2010)

UCD Process

- Create user profiles (also known as personas)
- Create a task analysis
- Create user scenarios
- Design wirefames/mockups
- Gather user feedback
- Specify UI design

The most important part

Iterate!

UCD Process Diagram

Case Study

- Problem: Design the user interface for a multi-modal mobile application that plays back recorded news stories from USA Today

- New UI must be integrated with existing USA Today app (for reading news stories)

- Target device: iPhone

- Multi-modal: Includes both a speech and touch user interface

User Profiles

- Who will be using this app?
  - Age
  - Gender
  - Location/mobility
  - Technology background
  - Experience with mobile device
  - Previous experience with USA Today app
  - Previous experience with speech recognition apps

User Profile - Martha

- Martha is 32 years old and works as a salesperson for a software firm. She travels a lot but mostly locally, so she is in her car 2 – 3 hours a day on most days. She owns an iPhone 5s. She is a news junkie and always needs to be up on current events. She likes USA Today, but doesn't have a subscription – she picks it up occasionally. She does a lot of travelling, so frequently has a Bluetooth headset on.

User Profile - John

- ???

Task Analysis

- What are the tasks that users will accomplish with the app?
  - Breakdown tasks into components.
  - Steal ideas from other apps or other domains.
  - Get a first draft done quickly – you can always add to the list later.
  - file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/USA Today Task Analysis.docx

User Scenarios

- Descriptive stories of how users will use the application
- Provide a picture of how the app will be used from beginning to end

Scenario 1 – Martha Listens to the News

- Martha is in her car driving to an appointment with a new client. Her iPhone is mounted on the dash. She wants to catch up on the days news. She opens the USA Today app and selects the audio player. The player starts playing the top news stories from that morning. She listens to all of the first story, but when she hears the headline of the next story she's not interested so she skips it. After she's listened to several news stories, she decides to listen to technology stories. In the middle of the first tech story, she gets a phone call. After the call she resumes listening to tech stories, and continues listening until she arrives at her client's office.

Scenario 2 – John listens to sports

- ???

Scenario 2 – John listens to sports

- John is commuting to work by bike on his local bike path. He has his phone in his pocket and is wearing a Bluetooth headset. He wants to catch up on yesterday's sports news. He opens the USA Today app, selects the audio player, and chooses to listen to the sports headlines. He listens to several headlines until he hears one about the Red Sox losing streak, and chooses to listen to the whole story. He then asks to hear stories about the Stanley Cup finals. He listens to 3 stories about the Stanley Cup, and then arrives at work.

UI Mockups

- Visual representations of the user interface
- Let you iterate on the design of the UI quickly and easily
- Initial versions (wireframes) give a general layout of screens and controls
- Later versions (mockups) fill in the details of each screen
- Interactive mockups show how the app will flow from screen to screen

UI Mockups

- Wireframes
  - file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/Screen Mockups/AccuNurse Wireframes.doc
- Initial screen mockups
  - file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/Screen Mockups/USA Today Initial Mockups.pdf
- Later screen mockups
  - file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/Screen Mockups/USA Today Later Mockups.pdf
- Interactive mockups
  - USA Today Demo Demo 1
  - USA Today Demo Mockup 2
- Demo movies
  - file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/USA Today Demo Movie.mp4

Gather User Feedback

- Mockup reviews and demos
- Interviews
- Usability testing

Usability Testing

- Easy way to gather feedback on an app
- Give use the app and ask them to use it for realistic tasks
- Watch while they are using it – observe for problems
- After they are done, ask about their experience:
  - What was easy to do?
  - What was confusing or difficult?
  - What was missing?
  - What should be done differently?

Usability Testing

- Identify users
- Write scenarios
- Run test
- Analyze results
- Updated UI based on results

UI Specification

- Document which captures the UI design in a format the developers can use to write the application.
- file://localhost/Volumes/Macbook HD/Users/Bob/Desktop/UCD Process/USA Today VA UI Spec (v1.5).docx

Questions?