Human-Centered Design

Video Research

- Don Norman Videos
    - HCD is an important concept when creating any product or tool that your users will interact with. The psychology and thinking of your users largely influence your design choices in HCD, and the testing process can be long and tedious. In order to account for various personalities and possibilities, it is important to create an application in the mindset of a user, not a developer.
    - There are 3 principles to Human-Centered Design
        - Focus on the people whenever developing a service/product such that these changes will benefit people, whether they are largely dependent on the product or will barely use it at all
        - Find the right problem. When fixing an issue, it is important to solve the core issue and cause of the difficulties being faced by your users. If your user accesses your website and can't find a specific laptop they want, don't just link them to the pages of the laptop, implement a feature in your system so that users can filter out various brands, models, prices, and more so that any individual in the future with this desire can easily find what they are looking for.
            - Sometimes, however, these core issues are impossible to solve and ultimately will sometimes be something that cannot be fixed
        - Optimization can provide benefits to your user in the short run, but ultimately singular additions and features can lead to a system that runs worse than your previous version. When developing a program, it is important to design your tool to its result. If you attempt to create features and addons that take away from the program/applications original purpose, then you will be left with a product that has strayed from what it was accomplished to do.
            - While user experience and opinion are important when designing an interface, there are times where you should step back and look at whether these changes would distract the user from the original purpose of the application/tool.
    - References
        - https://www.nngroup.com/videos/principles-human-centered-design-don-norman/
        - https://www.youtube.com/watch?v=Wl2LkzIkacM
- David Kelley TED Talk
    - Products are designed in modern times to satisfy the needs and personal goals of the individual. If a product is created with the intention of being easy to use, the interface for said product must be simple and quick to learn for the user to be happy. Goods and services across the globe have integrated the human perspective into their design process, and there are many features in applications and tools today that were made specifically to solve problems that people may have.
    - References

- https://www.ted.com/talks/david_kelley_human_centered_design?language=en#t-125892

Textbook Research (Interaction Design Beyond Human-Computer Interaction)

- Chapter 1
  - Section 1.1 (Introduction)
    - There are some products which are designed with the intent of being as easy and pleasing to use as possible for the user. There are other products, though, that focus on a design solely to achieve a specific goal in mind such as an alarm clock and a calculator. When designing a product, it is important to determine which aspects of your application/tool you should change based on user needs, and which aspects to keep intact. There are many different devices and tools out in the world today, and it is important to understand which situations are appropriate when applying Human-Centered Design.

Article Research

- Human centered design focuses on providing features and changes to a design to solve potential issues that a user may encounter. HCD was created to make applications and tools more user friendly to lower support costs and helper lines. In addition to lowering your cost, creating an interface that is easy to understand and use allows improves the brand's image and can be a declaration of public support by the business. The productivity of the user will increase drastically and could provide that slight nudge for many people to purchase your product over another.
- Some individuals criticize the HCD process due to its general application to the public. In some cases, HCD cannot cover specific groups of people that will still struggle with your tool despite your efforts. Some general examples can be young kids and older generations. Their issues are not focused entirely on the application itself, but with their inability and inexperience in learning these types of tools/applications. There have been newer models, mainly the D-UX model (Dependency User based Experience), which attempts to include co-dependent users and dependent users in order to bring together a wider range of opinions and preferences for a design.

User Personas

- Personas are fictional characters, which you create based upon your research in order to represent the different user types that might use your service, product, site, or brand in a similar way. Creating <u>personas</u> will help you to understand your users' needs, experiences, behaviors and goals. Creating personas can help you step out of yourself. It can help you to recognize that different people have different needs and expectations, and it can also help you to identify with the user you're designing for. Personas make the design task at hand less complex; they guide your <u>ideation</u> processes, and they can help you to achieve the goal of creating a good user experience for your target user group.
- Four Different Personas
  - Goal-Directed Personas

- **Goal-Directed** personas are created with intention of fulfilling some sort of goal that is desired by the user. The persona is created such that we focus on the sole purpose and destination the user desires to achieve by using our product. It is important to understand the reason why our user is purchasing our good/service, and to make sure we design the product so that the user can achieve their goal.
  - **Example**
    - A clock must be designed to tell time, and in some cases must be simplified enough so that the user can easily achieve this objective
- **Role-Based Personas**
  - Role-Based personas also focus on the purpose of the product but evaluate the role of the individual using the good. We must understand the position of our users, and how the user of this product will affect those around our consumers. Will the user be working with our product to create an important documentation, or is it a program that is simply designed to entertain? The position and perspective of our user based on their environment is vital to the design process.
  - **Example**
    - A user using a documentation application must be able to format their reports in way such that they create a satisfactory document for their superiors
- **Engaging Personas**
  - The purpose of engaging users is to look for the emotional and personal desire for a user to engage with your product. When developing personas, it is easy to create a stereotypical user persona with no emotion and unique attributes. As such, it is important we make personas that include personal goals and their understanding of what your product can accomplish for them. Engaging personas combine both goal-directed and role-based attributes while considering the unique behaviors of humans.
  - **Example**
    - A product must be made to satisfy the user and attract your consumer base. If a product does not please the user and be useful, then the consumers will not be interested in using your tool.
- **Fictional Personas**
  - These personas are created based on past experiences and knowledge of what the user may face when using your program. Some attributes of fictional personas can be quite flawed, and often is not a great guideline for complex design processes. It is recommended that fictional personas are created with simplicity in mind, and to only user them as a base opinion for your design when creating initial design prototypes.
- The focus of human-centered design is always to please the user when they interact with your product/service. As such, it is important we understand the needs of our consumer base. We must research the culture and background of our users, and understand the knowledge required

to use our goods. It is important to always consider the user's perspective when designing a product, and it is especially critical to format your architecture based on the user's end goal.

- o Personas are an important asset in HCD and are vital in understanding the product from the user perspective rather than as a developer.
- References
    - o https://www.interaction-design.org/literature/article/personas-why-and-how-you-should-use-them
    - o https://www.westmonroepartners.com/perspectives/in-brief/using-customer-personas-to-drive-human-centered-design#:~:text=Customer%20research%20is%20a%20critical,center%20of%20their%20design%20process.&text=One%20answer%20is%20to%20develop,behaviors%2C%20and%20%20motivations%20of%20customers.

Test Scenarios

- A user scenario simply describes a basic story of an action or goal that a user wants to accomplish. It might be how Kevin needs to buy a CD online for delivery today for his friend's birthday, for example. Of course, scenarios can be much more detailed too. The idea is to work out the: who, what, when, where, why and how of the user's scenario.
- Scenarios can be used to describe both what currently happens within a system or environment or more typically the intended behavior within a system or environment.
- User scenarios can be useful when defining usability testing too. They enable testers to focus on the key tasks within a system.
- Scenarios, which are built on the information gathered in UCD Workflow Analysis, vary widely. Some focus on the functional level, while others provide task-level detail. "Use case" is used to mean many different things, and some types of use cases are very similar to scenarios as described here. Generally high-level scenarios are used in the Analysis phase for new products and more detailed-level scenarios are used later in design of new products and when redesigning existing products.
- Just as personas are individual, fictional accounts of user group profile data, scenarios are individual, fictional accounts of workflow data. A scenario is a description of a persona using a product to achieve a goal. Scenarios are usually narratives that tell a story describing one or more tasks in a specific environmental situation.
- Developing scenarios often identifies important aspects of using a product in the real world that were not otherwise identified and considered; for example, that the workflow is likely to be disrupted by a phone call. Scenarios are useful throughout the design process, particularly in developing task descriptions for usability testing.
- When designing a test scenario, observe the actions performed by the user to achieve a goal, instead of asking for their thoughts. When doing user testing, it is important to observe actions, not words. Most times, people will show their true nature through the actions they take to achieve a task when given freedom.
    - o Ask the user "You are going on this airline website because you want to buy a ticket to New Jersey" instead of "Purchase a ticket to New Jersey on this website"

- o Avoid giving clues. Try to make the goal as simple as possible, while also making sense to the user what they have to accomplish. The user should be able to tell when they have accomplished their goal.
- If the task scenario is too vague, the participant will likely ask you for more information or will want to confirm that she is on the right path. Provide the participant with all the information that she needs to complete a task, without telling her where to click. During a usability test, mimic the real world as much as possible. Recruit representative users and ensure that each task scenario:
  - o Is realistic and typical for how people actually use the system when they are on their own time, doing their own activities
  - o Encourages users to interact with the interface
  - o Doesn't give away the answer.
- Scenario Mapping is a method used for test scenarios to determine the possible outcomes of the test. Based on the goal provided, the user may be able to achieve their objective through a list of means. It is important to understand which methods are difficult for the user to realize, and to determine if the process used is the intended one.
  - o Scenario Mapping uses UML Use Case diagrams to map out the possible actions and events for every person when the user accomplishes a task
- Important to understand the processes used by the user and how a persona will think in order to achieve a goal
- References
  - o https://www.interaction-design.org/literature/article/design-scenarios-communicating-the-small-steps-in-the-user-experience
  - o http://uiaccess.com/accessucd/scenarios.html

Weight Grading for Project

- The individual projects are grouped together as a clump of assignments that are worth 20% of your grade.
    - Skill Building Assignments
    - Each individual project is worth around 4%
- The group project is in a separate category worth 25%, with 2 projects counting towards the total.
    - Each group project is worth around 12.5%
- The rubrics for each project type will be modified to add the requirements for the honors portion of the project, and will likely count for around an additional half of the points for the assignment
    - If the project is originally 20 points, the new rubric may evaluate everything under 30 points with 10 being the honors portion.

Question Description

- When grading the projects, the student's performance will be graded based on these additional requirements on top of the original assignment. The individual project will add these requirements to the total grading rubric. For the group project, the individual will receive a separate rubric that will cover the additional components. In regards to their value, the individual project will be worth roughly 4% of the grade, and the group project 12.5%. Each project will be graded upon the normal parameters and the additional ones implemented by the professor for the honors work. An additional half of the original point total (10 is added to original 20 for 30 total) will be added on in order to include the honors portion. As such, roughly 1/3 of the project's grade will be on the honors portion of the work.