CO6210 Written Report

Introduction

Human-Centered Design (HCD) is used as a tool to enhance the design thinking process. HDC is a mindset that focuses beyond the primary user and works to better adjust for the needs of their further audience over what the companies wants and needs are with concurrent testing and iterating. HDC is addressed in the International Organisation of Standardisations (ISO) 9241-210, which analyzes the best techniques for ergonomics in Human System Interaction. Section 210 specifically covers HCD for interactive systems (ISO 9241-210).

Review on Human-Centered Design and User Experience (UX)

HCD draws its concepts from ethnography, sociology, and cognitive psychology (Nemeth, 2019) which have been adapted over time to fit for current interactive system design problems. The idea of HCD became a coherent idea around the 1950's which was brought up as an application of design principles while also being conscious of the planet and its resources. That idea has since evolved to apply design principles in interactive systems while also taking into account the humans involved and human rights.

HCD enhances the overall UX for a product by ensuring that the user's experience is the focus of the design process. It includes user feedback as a constant part of the design and development process, which is critical to create an enjoyable UX.

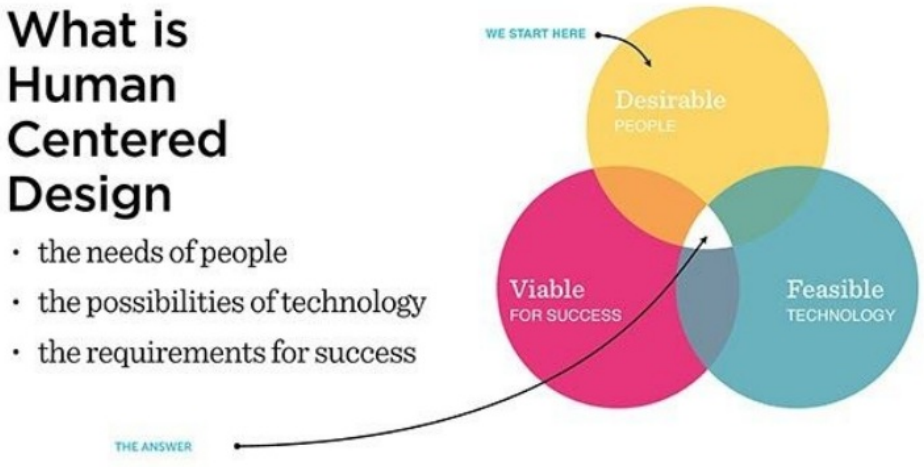

Figure 1.1 from GlobalWA, 2018, showing the HCD blend

HCD looks at what is desirable, feasible and viable for an interactive system, as displayed in Figure 1.1 above. Starting with the human's needs first forces the creative process to be human centered at its core which makes HDC a useful tool that helps boost the design thinking process. Companies have to also be aware of what is feasible and viable from a business standpoint. Figure 1.2 below shows how design thinking and HCD's workflows enhance one another shown in the social enterprise thinking chart. HCD takes the important points of design thinking and ensures that the process is iterative resulting in a better workflow, constantly testing at each step along the way.

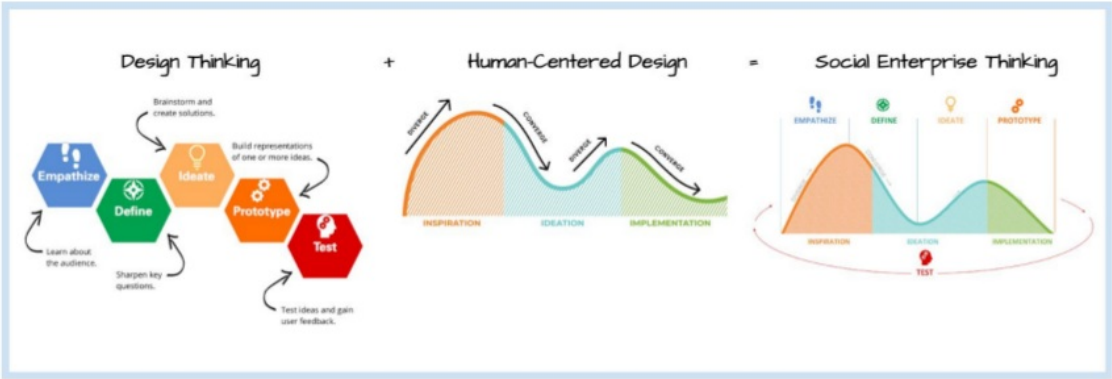

Figure 1.2 from Cole Hoover, 2018, depicting the HCD and design thinking combination

Alternate Methodologies

Another type of commonly used software methodology is Agile. Agile works similarly to HCD as it is an intensely interactive focus methodology. Figure 2.1 below breaks down the Agile workflow into its main parts, planning, collaborating, and delivering. Agile workflows are able to release software in iteration which allows for quick feedback and a smooth updating plan, that ensures that the user's feedback is taken into account. (Synopsis Editorial Team, 2017)

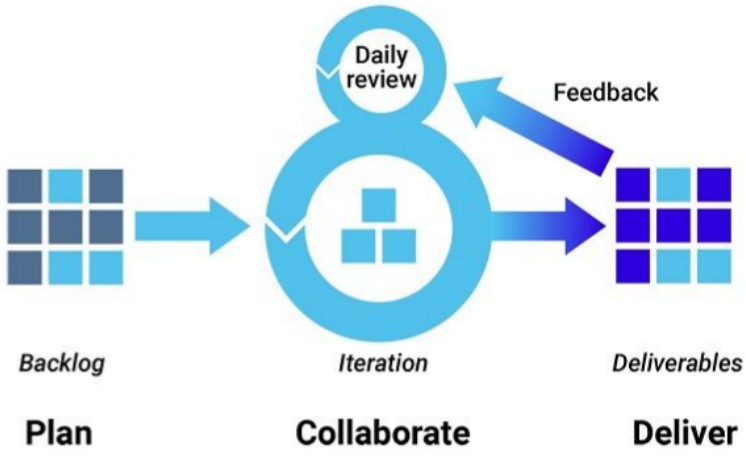

Figure 2.1 from Synopsis Editorial Team, 2017 depicting the agile workflow

Agile methodologies differ though from HCD as it is released as it is being developed. Figure 2.2 shows a breakdown of the HCD lifecycle which focuses on analysis, design, evaluation, and implementation. Like the agile workflow, HCD has an iterative process that ensures that the development of a product is being tailored properly to the users wants and needs. HCD though "believe[s] in a dedicated Discovery phase which precedes the beginning of development" (Read, 2017) versus agile's concurrent design and development. By having a clear starting point that has been well evaluated before going into development saves a business more resources and results in a more efficient workflow.

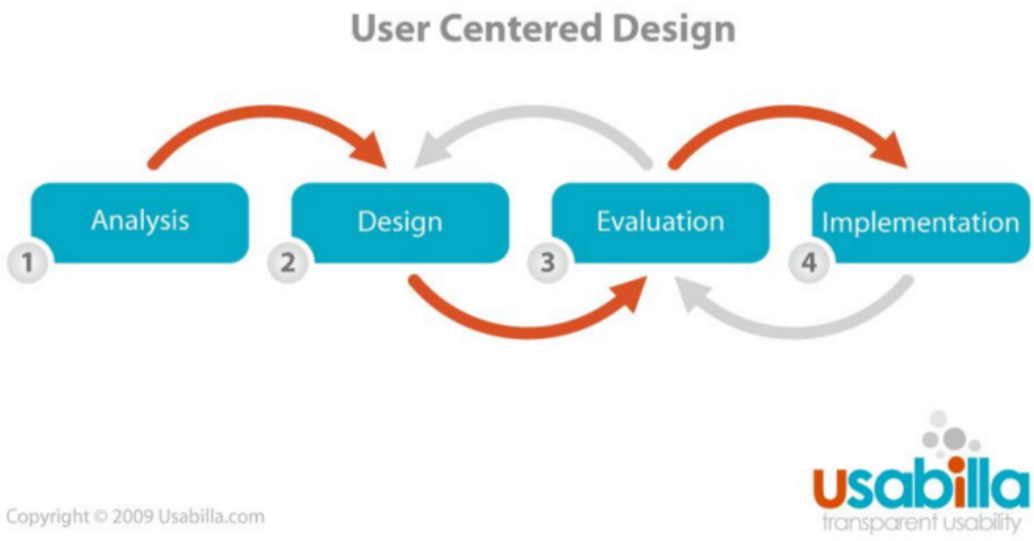

Figure 2.2 from Interaction Design Foundation looking at the HCD workflow

ISO Discussion

There are 6 key principles that make up HCD in the ISO. The first principle ensures that all users are taken into consideration, something that might work for one person might not work for another. The second principle makes sure that users are a constant part of the design and development process. Having users as a constant source of feedback allows for clearer and more beneficial design iterations. The third principle mentions that user testing should be done throughout the project instead of just the end. The fourth states that the process is iterative, which can be seen in Figure 2.2 above as the implementation, evaluation, and design processes loop with each other. The fifth principle defines that good usability doesn't have to be the easiest version but instead the simplest version for the user, having 5 pages to get to an end point by clicking one button through those pages would be outdone by having 1 button to press even if there might be more options available. The final principle addresses that companies need to be sure to include a wide range of designers, developers and users in the HCD process (ISO 9241-210).

Case Study: Successful Adoption of a User-Centered Design Approach During the Development of an Interactive Television Application

Microsoft developed their Microsoft TV Interactive Program Guide (IPG) to help users navigate around the TV guide with more ease. During their development phase they used HCD ideas to help them develop their IPG using simplicity, usability, accuracy and objectivity to further analyze and address the problem users were facing. After getting user feedback Microsoft found that their primary focus needed to be on simplicity and usability.

Microsoft ran into this issue as they became aware that as a whole there was a "lack of usability's awareness of what milestone the was at in the development process and how each milestone was defined" (Lamont, n.d.). If Microsoft would have used the ISO 9241-210 at the beginning of this project it is likely that the team would have been able to start stronger by having a clear understanding of HCD and its purpose.

Though as their project went on they began to dive heavily into their testing and iteration which is principles 3 & 4 in the ISO. They learned that "previous study could be compared to the current finding so that it was easy to verify whether the last UI fix fully alleviated the usability issue" (Lamont, n.d.). This testing and iterative process ensured that they were developing a solution to the users needs.

Conclusion

(ISO) 9241-210 and Human-Centered Design are helpful tools for user focused design thinking. User focused design thinking has helped companies tailor their products to best suit their users, their company needs and technological restraints. Focusing on users and the humans throughout the project helps to create products that reach a larger audience. As the audience

size grows so does the feedback that companies can get for their products. As technology advances it is important that the HCD and ISO advance along with it, the more common place technology becomes the more necessary it is to create products for the masses versus the few.

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Figures

Figure 1.1 from,

https://globalwa.org/2018/04/how-ideos-design-thinking-methodology-supports-innovative-solutions-to-global-challenges/ideo-what-is-hcd-690/

Figure 1.2 from,

https://blog.movingworlds.org/human-centered-design-vs-design-thinking-how-theyre-different-and-how-to-use-them-together-to-create-lasting-change/

Figure 2.1 from,

https://www.synopsys.com/blogs/software-security/top-4-software-development-methodologies/

Figure 2.2 from,

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