



Contemporary Challenges: Making a Difference

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Section 1 – Notes on the Presentation

Design Thinking (Continuation on Ideate, Prototype and Test)

In today's world, the issue of waste management, particularly the rampant use of single-use plastics, has become a pressing concern. To address this challenge effectively, it is crucial to employ a design thinking approach that fosters innovation and sustainability. This essay explores three effective ways to tackle the problem of single-use plastics: biodegradable packaging, eco-friendly building materials, and plastic pallets and crates. We will also delve into the importance of prototyping and testing in the design thinking process to ensure the viability and success of these solutions.

Single-use plastics have inundated our landfills and oceans, posing a significant threat to the environment. To combat this issue, biodegradable packaging emerges as a beacon of hope. Biodegradable packaging, as Asim et al. (2022) suggest, presents a sustainable alternative that can directly impact the amount of waste in landfills and seas. By encouraging companies to adopt compostable or biodegradable packaging materials, we can curb the proliferation of single-use plastics. This not only aligns with consumer demands for eco-friendly products but also incentivizes businesses to embrace ethical practices for the betterment of the environment (World Wildlife Fund, 2022).

Another effective approach to reducing plastic waste is the integration of non-recyclable plastics into the production of eco-friendly building materials. Plastic waste, when combined with substances like cement, sand, or other aggregates, can be transformed into sustainable construction materials such as tiles, roofing materials, and bricks (Rinkesh, 2020). These eco-friendly building materials often have a lower environmental impact compared to traditional counterparts and can reduce the reliance on virgin resources. By promoting the use of such materials, we can contribute to a more sustainable construction industry and mitigate the environmental consequences of plastic waste.

Plastic pallets and crates offer yet another innovative solution to the problem of single-use plastics. Plastics that cannot be recycled can be repurposed into robust, reusable transportation

and storage containers, such as plastic pallets and crates (The Benefits of Plastic Pallets & Boxes, n.d.). These items outperform conventional wooden pallets and boxes in several aspects, including being lighter, more resistant to moisture and chemicals, and having a longer lifespan (Joseph et al., 2021). By adopting plastic pallets and crates, companies can establish a more sustainable supply chain and reduce their demand for virgin plastic production (Nalini, 2023).

After identifying these three effective approaches to addressing the issue of single-use plastics, the next crucial step in the design thinking process is prototyping. Prototyping involves creating tangible representations of ideas to test their viability and potential (Saifi, 2023). Let's delve into the details of the prototypes for each of the solutions discussed earlier.

The first prototype focuses on sustainable packaging, with the primary goal of designing products that minimize negative environmental impacts. Achieving this requires careful material selection, prioritizing easily recyclable or biodegradable options. Additionally, raising community awareness is essential. Workshops, seminars, and awareness campaigns can inform the public about the advantages of sustainable packaging (Maureen, 2023). Collaboration with local businesses, particularly those in the food and retail sectors, can further promote the use of eco-friendly packaging. By partnering with these businesses, we can encourage them to adopt sustainable packaging practices and, in turn, educate their customers about the importance of making eco-conscious choices.

The second prototype focuses on reusable cutlery kits, which include forks, knives, spoons, and sometimes chopsticks. These kits offer a practical solution for individuals on the go, allowing them to avoid using disposable plastic cutlery provided by restaurants and food vendors (Best 10 Reusable Plastic Cutlery/Silverware [2022 Updated], 2022). To encourage the use of these kits, collaboration with local food vendors is essential. By incentivizing patrons who bring their reusable silverware with discounts or other benefits, we can promote the adoption of reusable cutlery kits and reduce the reliance on single-use plastic utensils. This approach not only benefits the environment but also encourages responsible consumer behavior.

The final step in the design thinking process is testing. After creating prototypes for sustainable packaging and reusable cutlery kits, it is crucial to assess how well these solutions meet the expectations of the target audience. Gathering feedback from consumers is essential to refine and improve the designs (Rikke Dam & Teo Siang, 2018).

To conduct testing, a group of consumers will be presented with the prototypes and asked to integrate them into their daily activities. Feedback will be solicited regarding the usefulness, suitability, and attractiveness of the solutions. If the designs do not meet the majority of their expectations, adjustments will be made based on their feedback to create more effective solutions.

Conclusion

A significant concern is the issue of society's widespread single-use plastics waste. In order to solve this difficult challenge, this essay investigates how design thinking may be used. The five main steps of design thinking are empathize, define, ideate, prototype, and test. The problem is taken into account within the larger context of society at the empathize stage. We interact with communities to better understand the issues brought on by single-use plastic trash, including its effects on the environment, the economy, and society.

During the define stage, the main issue is narrowed down by combining the knowledge obtained during the empathy stage. It offers a precise problem statement that directs the steps that follow. Ideation is the stage of the creative process when many solutions are developed. It promotes brainstorming and a setting where original solutions to the problem at hand might emerge. The viability of the suggested solutions is tested through prototyping. It entails developing concrete representations of concepts, which might vary from real goods to policy recommendations. Prototypes are put to the test with users at this stage in order to obtain input and improve the solutions. It makes sure that the final solution effectively solves the issue and is accepted by the end users.

There are difficulties with design thinking. Groupthink, a lack of resources, and opposition to change can obstruct development. Both group members and leaders must have effective communication, problem-solving abilities, and time management skills in order to get over these obstacles. The ethical implications of the design thinking process must also be taken into account. In order to guarantee that solutions don't unintentionally cause new issues or intensify existing ones, it is crucial to evaluate whether the entire process has been performed ethically.

Applying design thinking to the complex issue of single-use plastic trash offers a methodical and people-centered solution. This strategy shows promise for creating long-lasting solutions while also addressing potential difficulties since it emphasizes empathy, innovation, and testing. Additionally, it emphasizes the significance of ethical issues at every stage of the problem-solving process.

Link to recorded presentation

https://iumwgroup-my.sharepoint.com/:f/g/personal/21050003_student_iumw_edu_my/Ev9NwXGRXSFFnLpB3kwrtAUBfzUcWhNqf9zzUt10ncmh6Q?e=0yqlL1

Section 2 – Reflection

Description of the Experience :

The process of resolving society's terrible issue of excessive single-use plastic use and disposal is the experience I wish to reflect on. This process included a number of design thinking phases, issue identification, skill evaluation, and ethical concerns.

Feelings and Thoughts About the Experience :

I at first found the intricacy of the single-use plastic issue to be overwhelming. The sheer volume of rubbish and its detrimental effects on the ecosystem were depressing. But as I got deeper and deeper into the design thinking process, I started to feel more confident. I understood that by using systematic procedures, we might be able to change things.

Evaluation of the Experience :

Both good and bad things came out of the event. On the plus side, using design thinking techniques like empathy, ideation, and prototyping allowed us to comprehend the problem more thoroughly. It encouraged group cooperation and original thought. By recognizing the issues of groupthink, resource limitations, and opposition to change, we were able to proactively address possible barriers.

On the down side, resource limitations made it difficult for us to obtain essential resources and data. Another obstacle that made the issue seem even worse was society's aversion to changing its usage of single-use plastics. Sometimes it was irritating, and we had to keep changing our tactics.

Analysis to Make Sense of the Situation:

In light of this experience, I've come to understand the value of systematic methods to problem-solving, such as design thinking, when tackling wicked challenges. It was empowering because it made the difficult problem more manageable. It also brought attention to the practical challenges of solving such issues, such as a lack of funding and social opposition to change.

Conclusion About What I Learned and What I Could Have Done Differently:

I discovered that solving wicked challenges calls for a blend of empathy, imagination, and flexibility. Although design thinking offered a helpful foundation, it's important to recognize that there are no simple answers to wicked issues. Along the way, it's crucial to involve stakeholders and think about the process' ethical consequences. In retrospect, I should have conducted a more thorough initial evaluation to better predict the resource limitations and opposition to change. In order to acquire a variety of viewpoints, I might have also looked for alternate data sources and engaged with a larger range of stakeholders.

Action Plan for Dealing with Similar Situations in the Future:

I would do extensive research in instances with wicked dilemmas in the future. I'll start by completing in-depth study to comprehend the problem's scale, the resources at my disposal, and any potential obstacles. Secondly, moral questions. I'll continually assess the project's ethical consequences to make sure that all of my choices and activities are in line with moral standards. Lastly, flexibility. I'll be ready to adjust and shift course as needed when dealing with unanticipated difficulties or opposition to change. resource management is last. I will devise plans for effective resource management and look into other sources of funding.

The need for organized problem-solving methodologies, flexibility, and ethical concerns have been reaffirmed as a result of this reflective process while addressing difficult and wicked social challenges like the excessive usage of single-use plastics. In order to properly handle such difficulties, it has also underlined the necessity for constant learning and progress.

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Appendix

Section	Presented By
Problem	Lakshana
Design Thinking a. Empathize and Define b. Ideate, Prototype, Test	a. Chooi Fang Lin b. Jansika
Problem Faced during Design Thinking	Lakshana
Skills Needed	Lakshana
Discussion	Pravina
Ethical Consideration	Chooi Fang Lin
Conclusion	Jansika