FACULTY OF COMPUTING

SEMESTER 2 2023/2024

SECV2113 – HUMAN COMPUTER INTERACTION

SECTION 1

ASSIGNMENT 1

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GROUP 5 (LIFE BELOW WATER)

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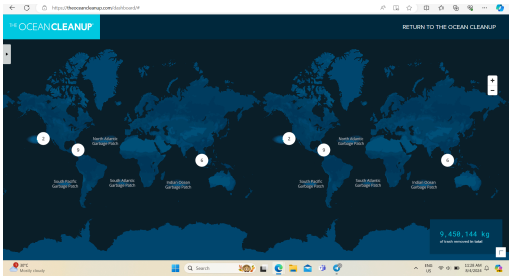
DESCRIPTION OF LIFE BELOW WATER AND PURPOSE OF TECHNOLOGY CHOSEN

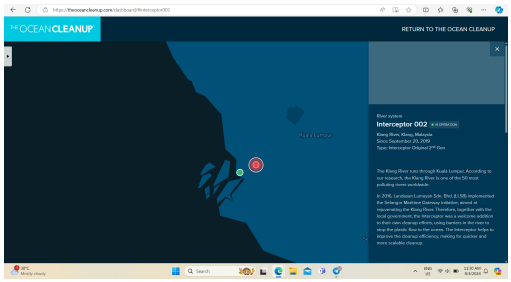
The United Nations (UN) has agreed to the Sustainable Development Goals (SDGs), which consist of 17 objectives to call to action to end poverty, reduce inequality of all kinds, and protect the planet and nature. In Assignment 1, our group has decided to focus on SDG14 which is Life Below Water. The mission of SDG14 is to conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

Nowadays, humans tend to emit rubbish into the ocean through the rivers. Until now, people found that we have 5.25 trillion pieces of plastic debris in the ocean. This ocean debris seriously affects the ocean ecosystem and pollutes the ocean badly, thus changing the living environment of marine life. As a consequence, marine life will die in the polluted water.

In this assignment, the technology we chose for SDG14, Life Below Water, is the Ocean Cleanup website. In 2013, Boyan Slat, a Dutch inventor, founded The Ocean Cleanup at the age of 18 in his hometown of Delft, Netherlands. The idea came out when he saw more plastic bags than fish when he was scuba diving in Greece. The Ocean Cleanup is a non-profit organisation that tackles the issue of ocean pollution by intercepting plastics in major polluting rivers. They aim to remove 90% of floating ocean plastic by 2040 with two actions: cleaning up the legacy plastic and stopping the sources of plastic flowing into oceans. This organisation is developing technologies to rid the world's oceans of plastic, and one of them is to create an artificial coastline, which is a system consisting of a long U-shaped barrier that guides the plastic into a retention zone to concentrate the plastic. With the help of the Ocean Cleanup website, we can keep track of their progress at any time and will be updated with their latest technologies and activities.

FEATURE 1





The Fogg Behavior Model (FBM) asserts that for a target behaviour to happen, a person must have sufficient motivation, sufficient ability and an effective trigger. These three principal factors which are ability, motivation and trigger are required to persuade the user to execute that task or feature. The first specific feature of this technology is it has a real-time tracking feature on Ocean Cleanup's website.

The target behaviour: Users can reach the real-time tracking page by clicking on the entry in the navigation.

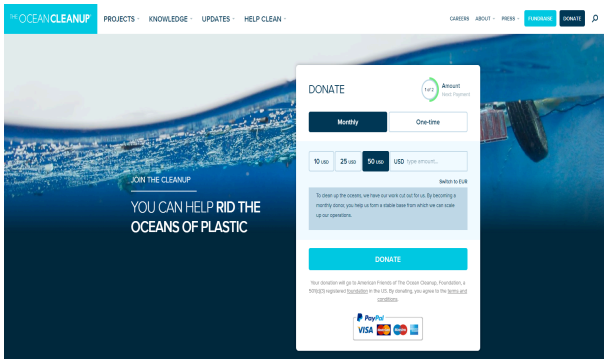
Ability: The tool that allows users to track the progress of collecting marine debris is quite easy to use. On the official website, users can easily obtain the most recent information by simply using their fingers to click the navigation on the screen to view the total amount of trash successfully intercepted by this innovative technology. This website is special for its user-friendly layout, which makes it simple for people of all ages to monitor important information in real-time. Moreover, a thoughtful navigation system adds even more simplicity to this real-time tracking. This easy connection enhances participation and awareness of marine conservation campaigns while also improving the user experience.

Motivation: The user will be more empathetic when they view the real-time tracking feature. Besides, it will also increase awareness of what damage people are doing to the ocean.

Trigger: The engagement and interactivity design of the real-time tracking feature will always trigger the users to feel more involved by viewing the progress of ocean trash collection, how many interceptors are in operation and the users can see the location of the interceptors on the earth through the map. Additionally, the website using "Start Exploring" acts as a spark to draw users' attention to the real-time tracking feature.

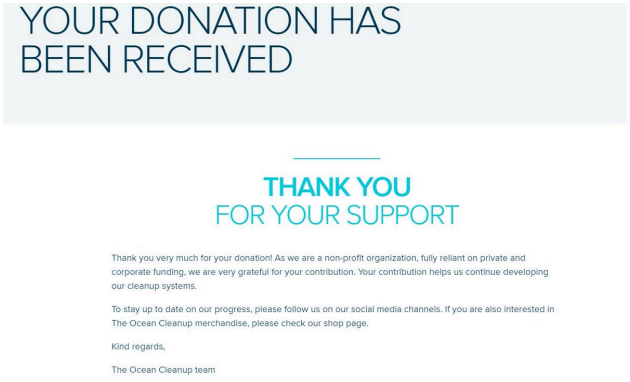
FEATURE 2

This technology's second unique feature is its Impact Visualisation-equipped Donation System.



The target behaviour: Users can donate through the website based on their own financial situation and view the projected impact of their donation.

Ability: The donation process is streamlined and intuitive. Users' time spent figuring out how to donate has been greatly reduced by the prominent "DONATE" button located at the top right corner of the website. The website will then give you the choice to donate once or every month and offer multiple payment methods in a simple form that will only take a few minutes to complete. This ease of use reduces friction in the donation process and makes users more likely to contribute. Besides, users can simply follow up on the projected impact of donations without visiting physically by clicking a finger to obtain the result and progress of the Ocean Cleanup. This transparency fosters trust and accountability, allowing donors to witness the tangible outcomes of their support and feel confident in the effectiveness of their contributions.



Motivation: The donation system will enhance motivation by providing users with clear visualisations of the projected impact of their contributions, as well as compelling narratives about the importance of ocean conservation and the apparent outcomes of users' support. The empowerment of the narrative will inspire users by showcasing the positive outcomes of their

donations and reinforcing the importance of their continued support by showing them the success stories and real-life examples of conservation efforts that have been made possible through previous donations.

Trigger: The donation page has obvious calls to action, such as "Donate Now" buttons, which have been placed thoughtfully all over the website, especially next to information or articles that have a significant influence on ocean cleanup. Users may also see posts on social media or receive emails directing them to this donation website. Leveraging compelling language and visuals will inspire users to take action and drive engagement.

DEMOSTRATES VIDEO

Video that demonstrates how the user is persuaded to execute that “target behaviour”

https://drive.google.com/file/d/1xPEpLwopqA4OzaKLvjwSUxh2XxPyYijk/view?usp=sharing

FAILED TARGET BEHAVIOUR

The country selection dropdown menu on Ocean Cleanup's real-time tracking page faces several usability challenges that can be addressed using the Fogg Behavior Model (FBM).

First, the current design lacks intuitive navigation methods, making it difficult for users to locate their desired country efficiently. The absence of an alphabetical organisation, search function, or auto-complete feature can result in a cumbersome and time-consuming selection process.

Second, this lack of user-friendly design and functionality can lead to decreased motivation among users. If users find it challenging to select their country, they may become frustrated and lose interest in exploring the real-time tracking feature further. Additionally, the dropdown menu's limited zoom functionality adds another layer of complexity and restrictiveness. While zooming can assist users in navigating the map, it may not always lead them directly to their desired country due to a broad or lack of detailed geographical markers.

Example picture: The map view is too broad

To overcome these challenges and improve user engagement, several recommendations can be implemented. Firstly, optimising the dropdown menu with alphabetical organisation, search capabilities, and auto-complete features can enhance the user's ability to quickly find and select their desired country. Secondly, adding visual cues, tooltips, or help text near the dropdown menu can guide users effectively and emphasise the importance of this feature in customising their tracking experience. Thirdly, incorporating additional zoom features, such as zoom to

region or zoom to country options, can complement the dropdown menu and provide users with alternative ways to navigate and select their desired location accurately.

Lastly, allowing users to save their preferred country selection or set default settings based on their location or previous interactions with the platform can streamline the tracking process and encourage users to revisit the real-time tracking page regularly. By addressing these usability and design issues, the country selection feature on Ocean Cleanup's website can be significantly enhanced, providing users with a more intuitive, engaging, and personalised interface to monitor marine debris effectively.

CONCLUSION

Sustainable Development Goal 14 which is Life Below Water, is crucial to sustain our oceans and marine resources. In order to achieve SDG14, everyone including governments, businesses, organisations, and individuals must make efforts to preserve the oceans in this world by promoting actions such as marine conservation, sustainable fisheries management, pollution prevention and climate action. As a result, the marine ecosystem will be preserved and the diversity will be protected so that the next generation can enjoy the beauty of the oceans, seas, and aquatic creatures.

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