User Interaction and Interface Design Plan of "H&M x Green" – An Application Supporting Eco-Friendly Textile Consumption in Singapore

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The design plan of the mobile application "H&M x Green" is a part of the public relations campaign on behalf of H&M Corporation to boost users' consumption of the H&M Conscious Exclusive line, an eco-friendly clothing line made from recycled materials, and to encourage users to recycle old clothes and develop environmental awareness.

1 Problem Statement

Textile waste in Singapore has been steadily increasing over the years from 82,300 tons in 2008 (National Environmental Agency, 2008) to 139,800 tons in 2016 (National Environmental Agency, 2016). On the contrary, the rate of textile recycling has been dropping from 12% in 2008 (National Environmental Agency, 2008) to 7% eight years on (National Environmental Agency, 2016). An increase in consumption with a decrease in recycling has witnessed severe environmental consequences.

"The textile industry is considered to be one of the world's worst polluters" (Marwari and Khan, 2011). Textiles release harmful greenhouse gases such as methane during decomposition (Wallander, 2012). Additionally, the dyes and chemicals "leach into the soil" contaminating groundwater and the surface (Wallander, 2012). More urgently, Singapore's landfills are filling up fast. By the year of 2035, the "Phase II" of the Semakau Landfill will be completely full (Wee, 2015). Hence, we have focused our efforts on revamping the taste and preference of Singaporeans together with the fast fashion brands. We have chosen to work with H&M as it is a leading multinational fast fashion player. H&M has the second largest market share in the

Singaporean retail market - 4.6% (DBS, 2017) and has continuously tried to raise the awareness of textile sustainability. The campaign aims to drive consumers towards consuming more environmentally friendly fabrics and encourage the recycling of old clothes.

2 User Interaction Design Plan

Due to the increasing in the use of mobile phones, online shopping has become prevalent. Therefore, an application entitled "H&M x Green" will be launched as a complement to the H&M Official App to support our campaign and tackle the specific needs and concerns of our target audience in the digital age.

2.1 Users

Our target users are consumers aged between 18 to 35 years old. They rely heavily on their mobile phones for daily usage which includes online shopping (Lin & Toh, 2017). Therefore, leveraging on this, creating an online interface that facilitates eco-friendly purchasing and recycling is beneficial to our cause and campaign goals.

2.2 User Experience

"H&M x Green" aims to create an interface that cultivates recycling habits through providing users with ease of use of "Post-it-Green", the recycling function of the application (illustrated in 3.2), as well as incentivizing them to participate in these initiatives. It also serves as a platform to advocate the H&M Conscious Exclusive clothing line and promote the target users' preference of sustainable clothing.

<u>Key Functional Requirements:</u>

- To function as an electronic commerce platform for the H&M Conscious Exclusive line
- To gain easy access to H&M's recycling initiatives

- To enable users to track personal recycling progress
- To reward users with discount codes, green credits and e-clothes
- To personalize users' own avatar with rewards earned through recycling

2.3 Usage Scenario

Persona	Goals & Motivations
Janet, 18 years old - A 1st year university student who is into the fashion industry - Shopping regularly for clothes and preferring to do online shopping due to convenience - Not wanting to discard her old clothes - Starting to concern about the impact of her purchases on the environment	Experience Goal - To be able to recycle her clothes in a simple and convenient way and be rewarded for her behavior - To be able to browse through a catalogue of fashion products made from environmentally friendly materials End Goal - To be able to purchase clothes with sustainable consciousness

Janet frequently shopped online for her clothes via her phone and got them delivered to her home. She was concerned about the impact that her old clothes would have on the environment whenever she bought new clothes to replace the old ones. She did not want to

simply discard the old clothes as she believed that they were of some use. She wished to recycle her clothes but found it difficult and inconvenient in doing so.

Hoping to consume more sustainably, Janet downloaded the "H&M x Green" application and had access to the Conscious Exclusive line and its sustainability campaign. The application provided her with a huge catalogue of H&M eco-friendly clothes to shop for and made recycling convenient through its sustainability initiatives. The application also rewarded her for being a sustainable consumer, which increased her commitment to the environment.

2.4 Attitudinal and Behavioral Goals

2.4.1 To improve public perception of H&M stance on environmental sustainability

The application-assisted campaign displays H&M's continuous effort to play a vital role in the environmental sustainability. With sustainable behaviors incentivized, the public will understand H&M's stance to be an environmental giant in the fast fashion industry.

2.4.2 To cultivate users to purchase environmentally friendly apparels

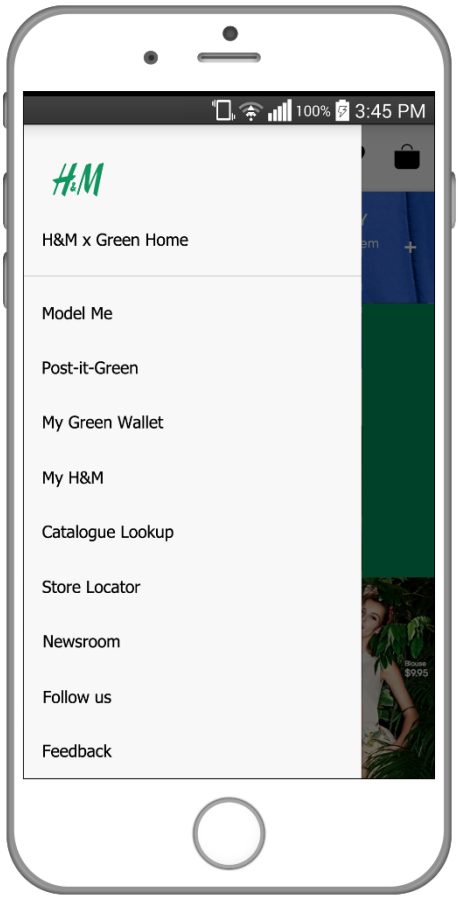
Recognizing that consumers tend to make purchase on design and price, H&M aims to shift the users' demand to its Conscious Exclusive line through discounts and rewards that are unique to the line.

2.4.3 To encourage regular recycling of old textile waste

The application makes it easy to start recycling through a post-back service and rewards ranging from vouchers for the Conscious Exclusive line to "e-clothes" used in the "Model Me" section (illustrated in 3.6). This will promote regular recycling of old clothes and increase consumers' sense of involvement in the environmental protection.

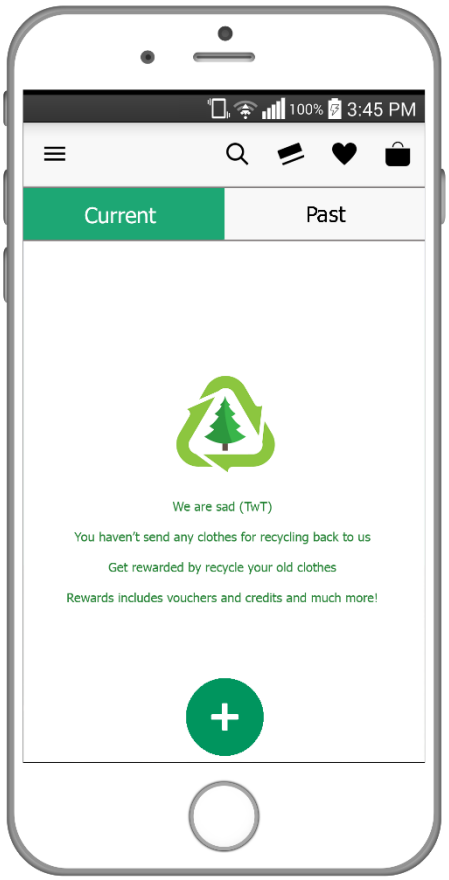
3 User Interface Design

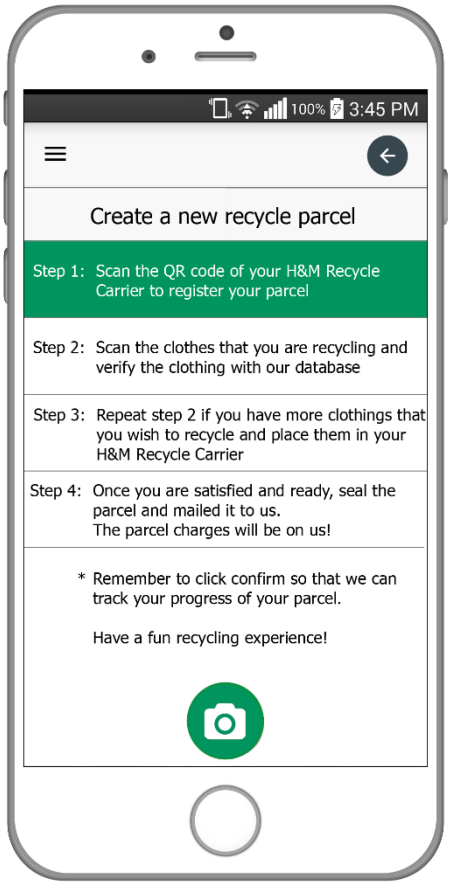
3.1 Homepage & Main Menu



The "H&M x Green" homepage shows fashion stories, sales promotions and campaign news. Users can scroll down for more stories and news. Upon clicking the images, users will be linked to respective contents.	When the top left-hand icon ☰ is tapped on, a menu will be displayed to allow users to toggle easily between various pages of the application. The existing page will be dimmed so that it draws the attention to the menu bar.

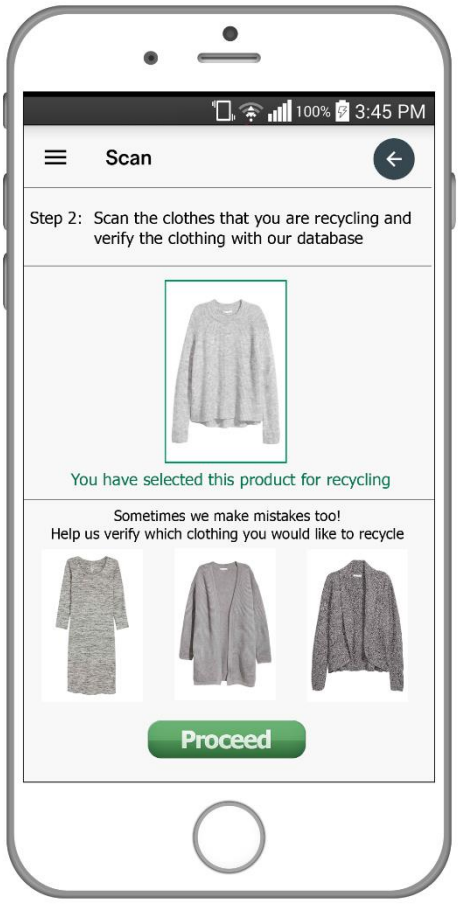
3.2 “Post-it-Green” Tracking Page & New Recycling Parcel Page





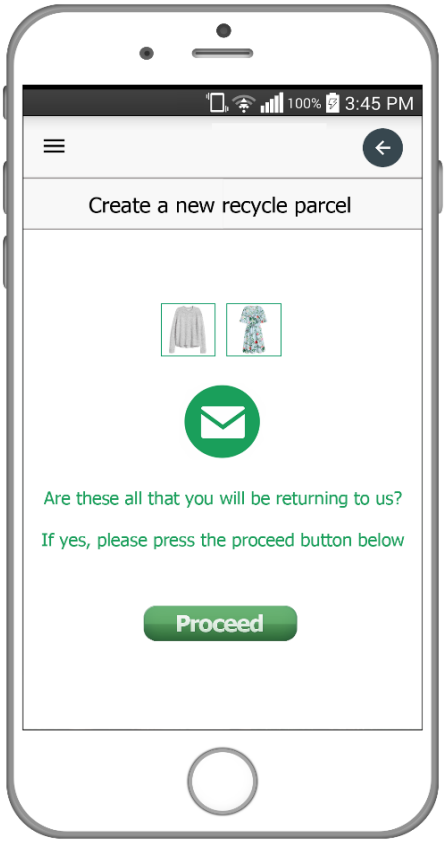
Upon tapping on the Post-it-Green icon in the menu, the users will be led to the main tracking page that keeps a record of present and past recycling parcels.	Clicking the plus button  will lead to the process of making a new recycling parcel and a set of instructions to complete before the users can send the parcel.

3.3 Camera Features & Image Recognition A.I.



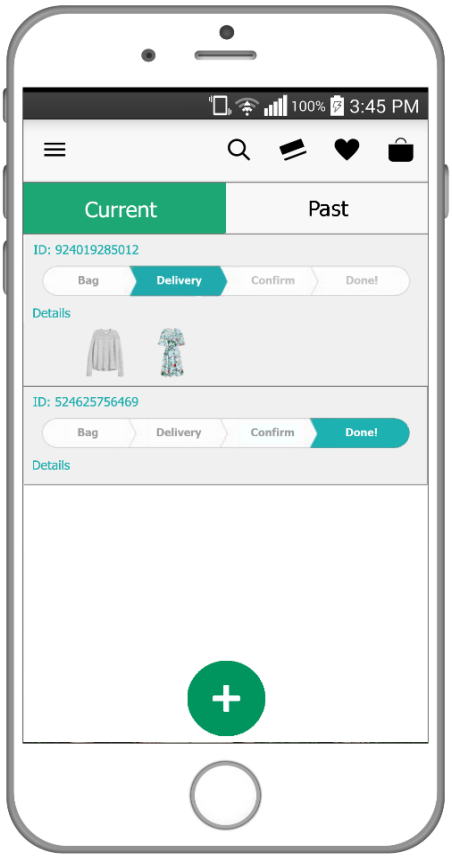
Scan the QR code on the recycling carrier to register the parcel and clothes for the system to match the image taken with H&M database of apparels when users press the button.	If the H&M image recognition A.I. fails to make a correct guess, users can make correction and select the right design of clothes for recycling.

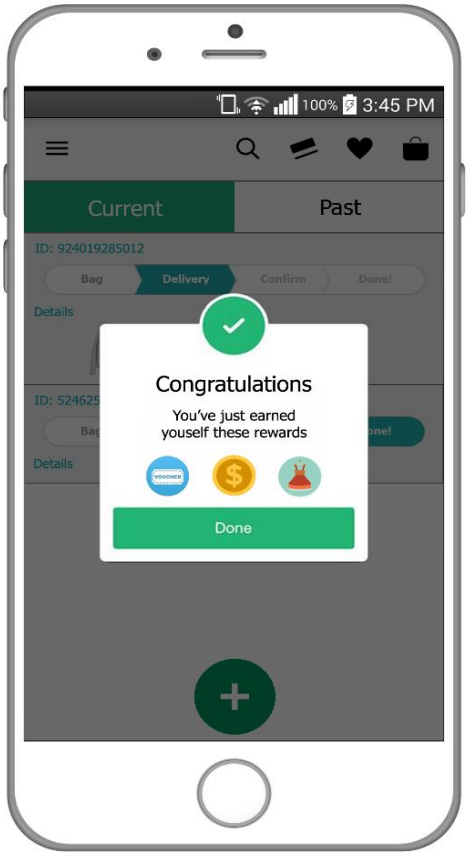
3.4 Recycling Parcel Progress & Submission Page



Once all the items are ready to be recycled, the users will be able to press the button that is only available after completing Step 2 to process the parcel digitally.	A confirmation page will be displayed to verify all the items that are going to be recycled through the "Post-it-Green" initiative.

3.5 Recycling Parcel Progress & Reward Redemption





Users can track their parcels and go through the details of each parcel in the main page after completing all the steps.	After H&M processes the parcel and verifies it, users can redeem their rewards such as vouchers, credits and e-clothes. These rewards will be transferred into "My Green Wallet".

3.6 “Model Me”

Users can customize their avatar with the H&M Conscious Exclusive clothing under the “Model Me” section. This section is set for users to match clothes before purchasing them through online shopping or in physical H&M stores. These e-clothes can be gained directly through the “Post-it-Green” initiative or purchased with credits earned from that.

4 Functionality Description

4.1 Image Recognition A.I.

Apparels recycled under the "Post-it-Green" initiative have to be verified in order for H&M to categorize in styles and materials. This verification process is supported by H&M's image recognition artificial intelligence that matches the image taken with their existing product database using a convolutional neural network. The photo's pixels are matched to similar image through an efficient algorithm that compares the relationship of the pixels (Keenan, 2015). However, there will be instances where it might fail to recognize the image and present an inaccurate product. Hence, it will give feedback to the users on whether it has made a correct guess and allow the users to make corrections.

4.2 "Model Me"

"Model Me" is a creative element which attracts users to recycle and allows them to interact with the clothes in the collection in an intimate way. The choices of genders and skin colors enable users to model their self-images. The drop-down function next to the avatar makes the platform easy to navigate between the "e-shop" of the Conscious Exclusive collection and the users' wardrobe. The "e-shop" allows users to purchase "e-clothes" with credits earned in the "Post-it-Green" initiative for the avatar to try on, which grants instant gratification upon recycling behaviors. Furthermore, the users can decide whether they would like to purchase the actual clothing item from the H&M store after having the avatar model it. This interactive element will arouse users' interest in the application and enhance its effectiveness in achieving the goals.

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