Design Project 1- Fujifilm QuickSnap

EDesign100 Section 020
Team 5
Submitted to: Professor Jeongwhan Jin
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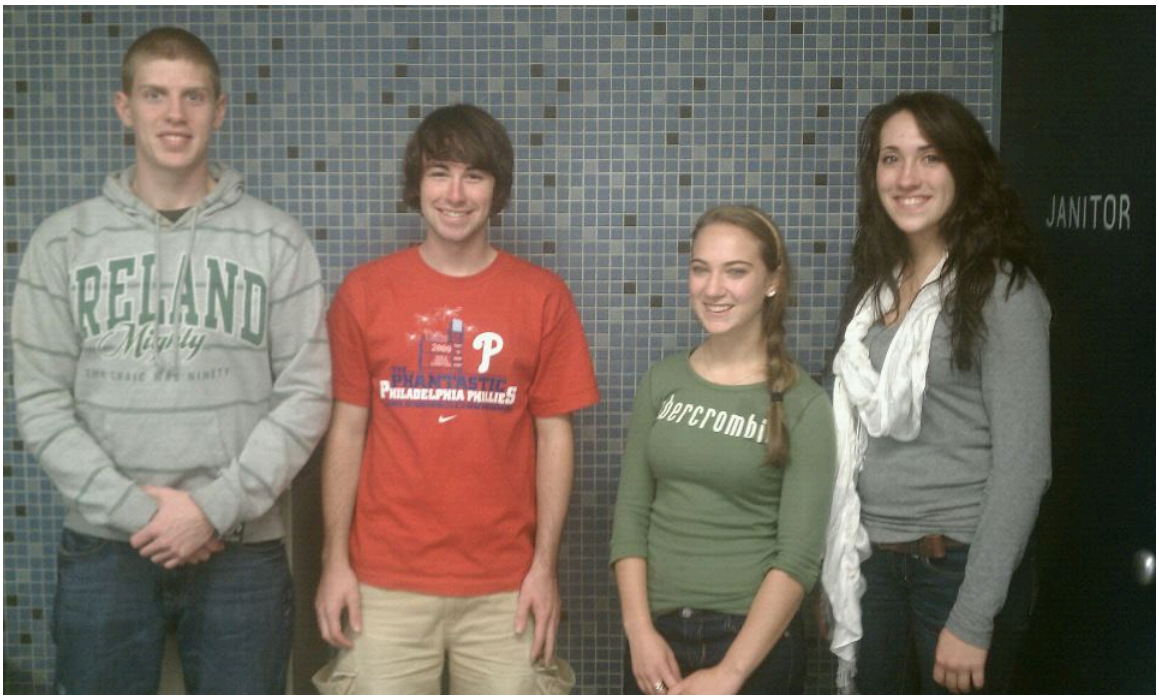

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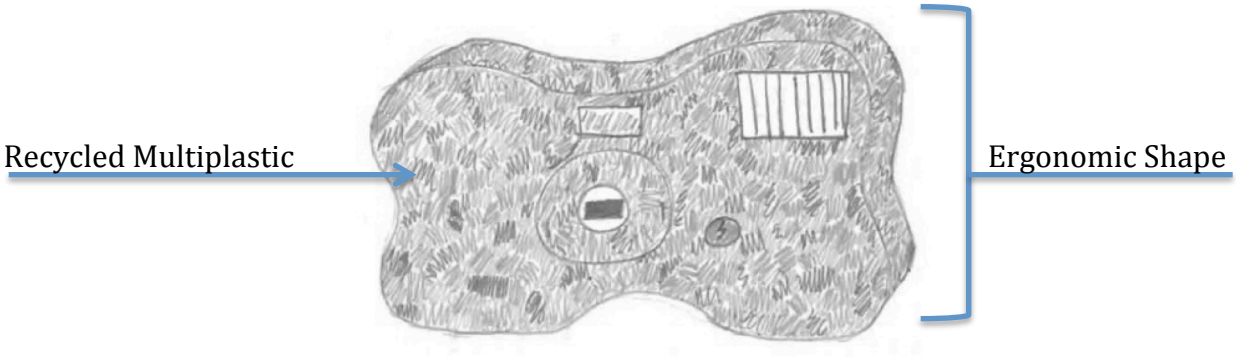


Abstract:

This project is a redesign of the Fujifilm one time use disposable camera. Our focus is to redesign the camera with both the customer and the environment in mind. Our goal is to make the camera more environmentally friendly by using more recyclable components, as well as making the camera more aesthetically pleasing. This will in turn reduce the cost of each camera, making it sell better, and making the customer happier.

Introduction:

Before designing our new product, there were a few preliminary questions that had to be addressed before starting to change the old design. First off, we had to figure out what were some of the problems from the old design. Then next step was to consider the question, how do we plan to improve it? This involved observing the old design and figuring out solutions to those problems we found. After brainstorming and choosing some specific problems to redesign, we had to ask ourselves, how would it appeal to the consumers? This involved seeing how the new features appealed to the consumers by researching what is important to consumer's needs. We found that one of the qualities of a product that appeals to consumers is the ergonomic design as an example. Lastly, we must ask, how can the new product draw in new consumers? In order to get the most out of our new product, we must address all of these questions before putting it out on the market.

Mission Statement:

For anyone who enjoys photography, the Fujifilm one time use disposable camera is a typical camera that benefits the environment by using recyclable materials while keeping a reasonably low cost. Unlike Kodak disposable cameras, our product is made out of biodegradable plastic instead of the tradition petroleum based plastic that is disposed and will not degrade in landfills.

One of the key design features for our new Fujifilm disposable camera are that the new design will be ergonomically shaped for more comfort while holding and taking pictures. The standard design was just a box shape, which is not comfortable to hold as well as not aesthetically pleasing.

The goal of our new design is to keep the product very cost effective while maintaining all of the necessary components of the camera that allow the product to be very manageable and easy to use.

The estimated selling price for the Fujifilm disposable camera is $4.50 and was determined based off of the base prices for each of the components used plus the price of the new plastic, minus the cardboard cost. Since the camera is disposable as well as

recyclable, the old camera's plastic can be used to create new cameras which will in turn reduce the price of the product to $4.50.

Customer Needs Analysis:

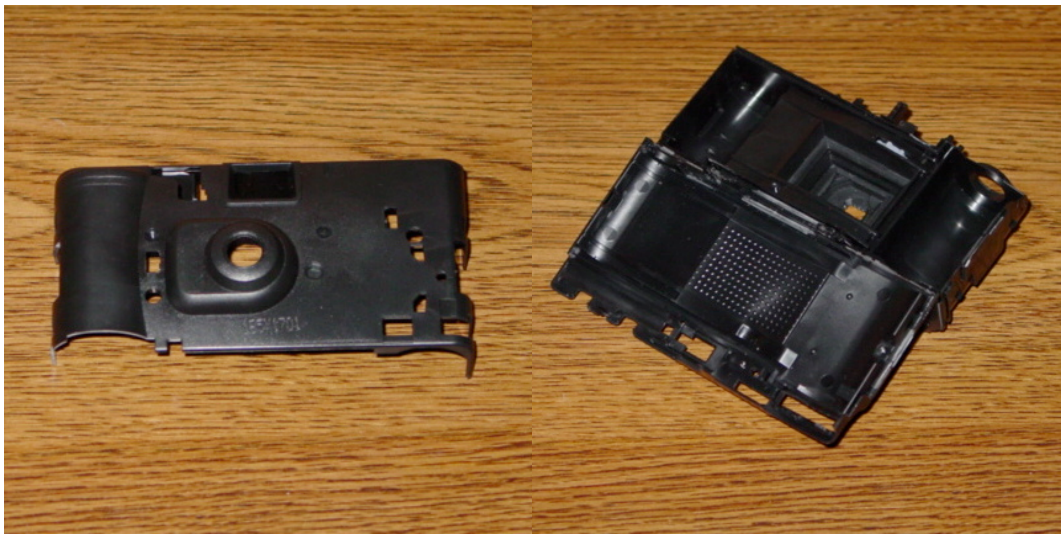
The target customer for our redesigned camera is the manufacturer. The main concern for the manufacturer is keeping cost low, and quality high in order to sell more of their product. Our goal was to find a way to make the process of manufacturing cameras cheaper for the Fujifilm Company. Existing products may make use of recyclable materials, but our main aim was to drive down the cost of manufacturing the camera even more by recycling more components.

External Research:

The approximate price of the Fujifilm QuickSnap found in research was $5.24. The cost of the cardboard casing was found to be about $0.15 per square inch, and therefore the cost of cardboard for each new camera sold is about $0.23, plus the cost of printing.

Different types of plastics are better or worse for recycling. One type that can be both recycled and composted is called bioplastic. There are many different forms of bioplastics, made from corn, vegetable oils, and other natural resources. These plastics still remain fairly affordable, and are better for the environment.

Product Dissection:



Part number	Part Name	Functional Description and Material	Detachment (easy, difficult)	Problem identified and suggested solutions
1	Cardboard	For coving and aesthetics	Easy	Not necessary- Get rid of
2	Plastic Front Cover	Covers inside pieces	Moderate	Not entirely recyclable
3	Copper Charging Plate	Charges capacitor	Easy	
4	Film Roll	Holds film	Easy	
5	AA Batery	Provides charge for flash	Easy	AAA's work just as well- take up less space
6	Circuitboard for Flash	Charges flash	Difficult	
7	Lens	Displays image	Easy	
8	Main body	Holds inner parts	Moderate	Not ergonomically friendly- Make shape fit hands
9	Aperture Closing Device	Opens aperture and discharges flash	Easy	
10	Spring	Pulls aperture closed	Easy	
11	Back Plate	Holds pieces in	Moderate	
12	Film Advance Reel	Moves film	Moderate	
13	Film Blocker	Stops film	Easy	
14	Viewfinder Lens	Moves image	Easy	
15	Counter Wheel	Displays number of pictures left	Easy	
16	Axle	Alls (12) and (15) to rotate	Easy	

Concept Generation:

How can we improve the product to fit the needs of both the consumer and the manufacturer? Some of the possible problems with the Fujiflm disposable camera are

the lack of attention to the waste material after camera use, the use of extra materials such as cardboard and plastic, and keeping the camera price in an affordable range.

One idea was to make the camera much smaller. However, we realized that this would not be desirable for many people, since the size is already relatively good for the average person's hand.

We also considered making a camera with a shell of thick, compressed cardboard instead of plastic to make the entire shell recyclable. This idea was also deemed bad when we realized that there was no way to ensure the inner workings of the camera would be protected.

We finally decided on a more environmentally friendly type of plastic.

Concept Selection:

When considering all the possible outcomes of the problems presented for both the consumer and the manufacturer, we decided that the most prominent problem with the Fujifilm disposable camera is the lack of attention to the materials that are left after the film has been developed. So as a solution, we created a more ergonomic and economic camera, that is made of recycled plastics and can be recycled after use.

Final Specifications:

The final specifications for our design of the disposable camera are that it must be made out of bioplastic material which gives it the unique and environmentally friendly component. The other specifications is that it must have an ergonomic shape to fit snuggly in the hands of the photography. The other specifications for this camera are standard with the traditional Fujifilm disposable camera.

Embodiment Desing and Final Design Description:

While Fujifilm currently recycles about 82% of each camera that is returned to the company, our aim was to increase this number even more. According to Fujifilm's website, "the flash, battery, plastic, and mechanical parts are all reused if they meet stringent quality testing standards. The remaining camera components are recycled." However, the company does not reuse the parts that do not pass their quality testing standards. With our new design, parts of the camera that are not deemed high enough quality to be reused will be crushed down and remolded into new camera shells. This will greatly reduce the amount of money that the company has to spend on newer plastic, and reduce the amount of waste created by plastics that are currently unable to be reused. Furthermore, by introducing bioplastics as the new type of material used for the camera parts, our redesigned camera is both cheap, and environmentally friendly. If retail photoprocessors choose not to return the used cameras to Fujifilm for recycling,

the plastic is biodegradable, and can even be composted. This will produce much less waste and be better for our planet, while saving the company valuable money.

Conclusions:

In conclusion, our new product will have multiple benefits for the consumer who chooses our product. Since our product is competing with other top companies including Kodak, we needed to design new features that other companies have not developed yet. In order for our product to have a higher demand over other products on the market, we must give the most beneficial features as well as keeping the costs comparable to the other companies models. Since our product is economical, consumers should be able to make an educated decision on the product just based on price. This product will also be available for a wider range of consumers seeing that the ergonomics and durability can withstand any age group. Lastly, our new product is most beneficial to the environment since it was created using bioplastics. Overall, our product should theoretically be in higher demand based on the features and price in the market.

References:

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