

Disposable Camera Reinvented

EDSGN 100

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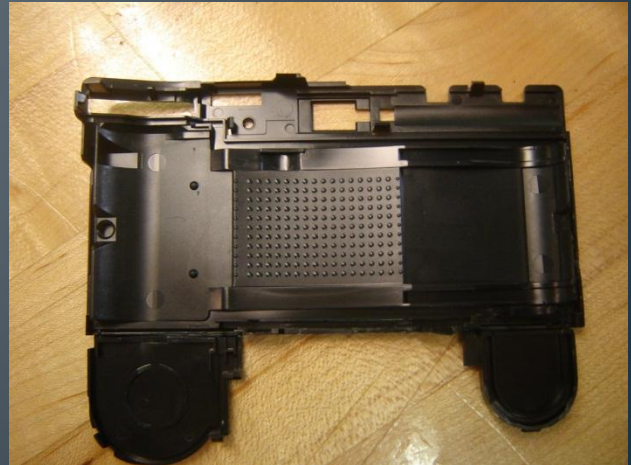
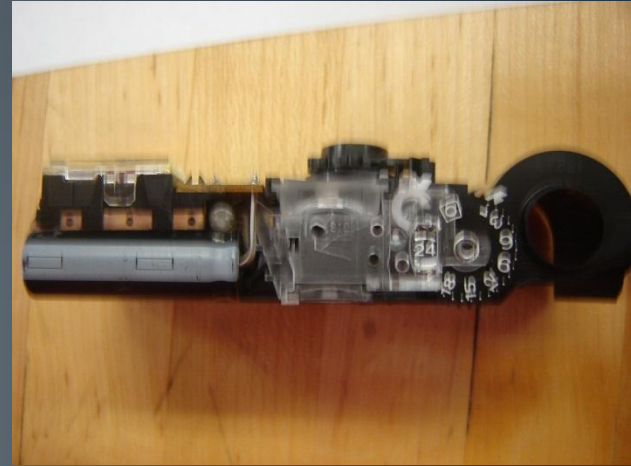
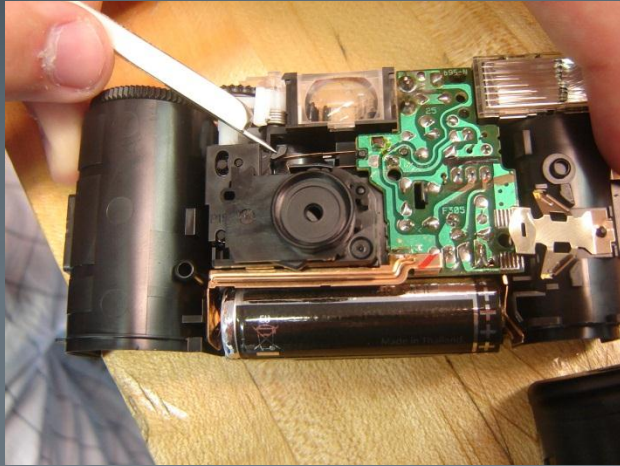
Overview

- Identifying the Opportunity and Problem
- Gathering Information
- Brainstorming
- Evaluation
- The Decision
- Conclusion

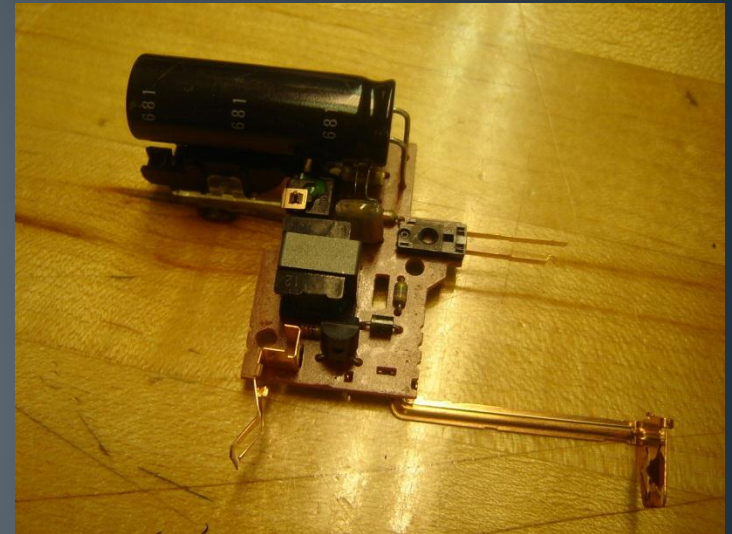
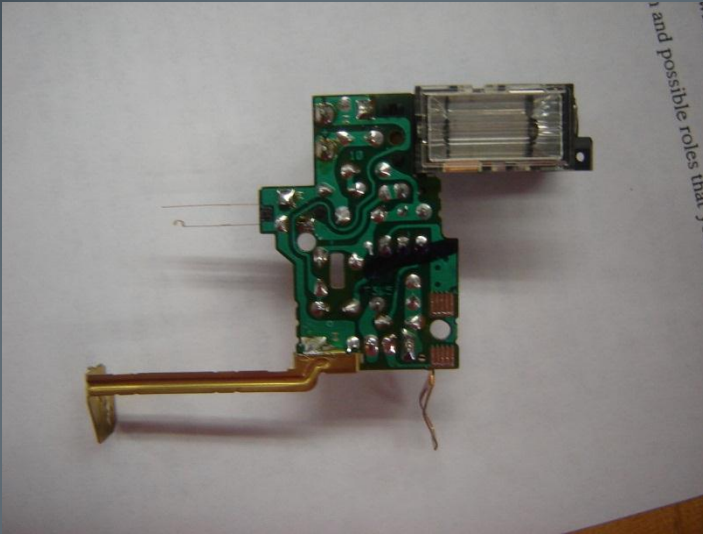
The Opportunity and the Problem

- We recognize the opportunity to design a disposable camera that is more sustainable by reducing electronic waste(e-waste)
 - Sustainability: Meeting current and future human needs without compromising the environment ^[4]
 - E-Waste: Electronic waste containing harmful metals and toxins ^[2]
- The problems
 - Too much E-waste in current model
 - New technology reduces demand of disposable cameras

Information Gathering(Camera Dissection)



Information Gathering(E-Waste Found)



Information Gathering(E-Waste Info)

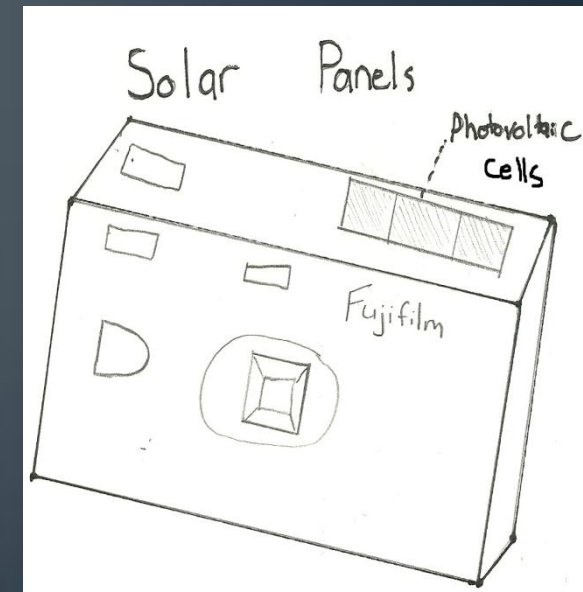
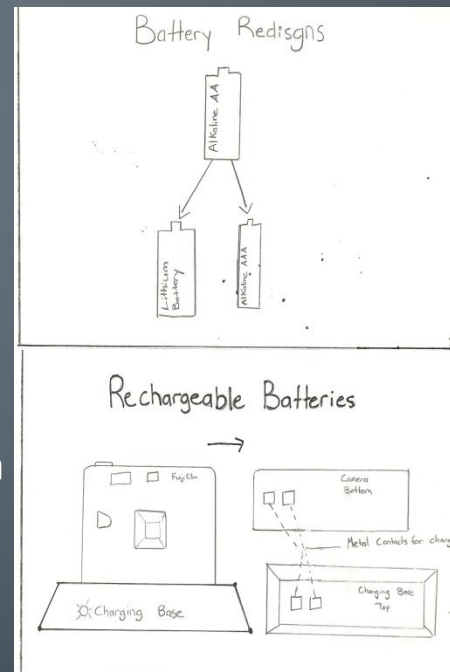
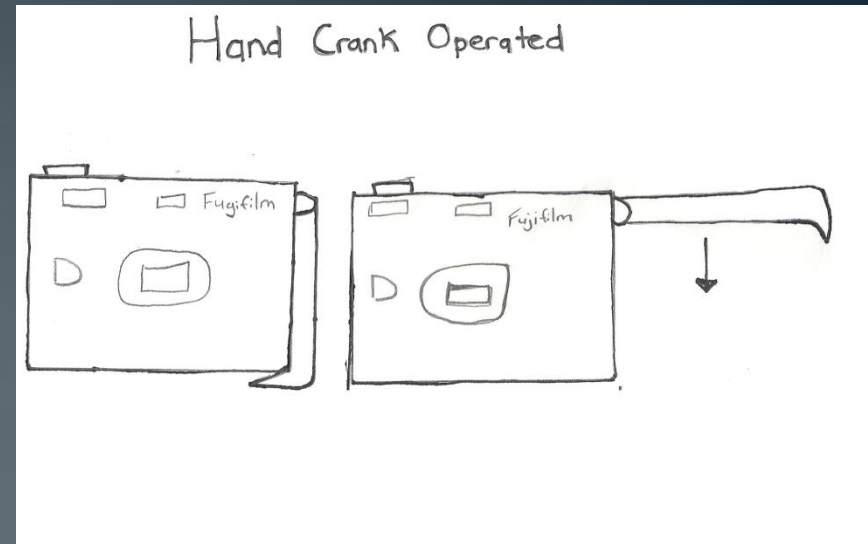
- Some of the harmful toxins found in E-Waste are Mercury, Lead, Aluminum, Arsenic, Cadmium, Cobalt, Selenium, and Polybrominated Flame Retardants ^[3]
- E-Waste is extremely harmful, it causes cancer and neurological disorders to humans ^[2]
- The three big E-waste parts of the camera are the battery, circuit board, and the capacitor ^[3]
- The E-Waste they contain are Mercury, Selenium, Cadmium, and Polybrominated Flame Retardants ^[3]

Information Gathering(Consumer Wants)

	Yes	No
Do you own a digital camera?	36	4
Have you used a disposable camera in the last year?	9	31
Would you be willing to replace your own film to reduce e-waste?	22	18
Would you be willing to spend more money to reduce e-waste?	8	32
Who do you believe uses disposable cameras the most?	Youth	Adolescents
	21	0
	Adults	Seniors
	6	13

Our Ideas

- AAA Battery
 - Replaces overpowered AA
- Flashless Camera
 - Would be sold alongside current
- Replaceable Film
- Rechargeable Battery
- Solar Panel
- Lithium Battery
- Hand Crank
 - To generate power for flash



Evaluation

Screening Matrix

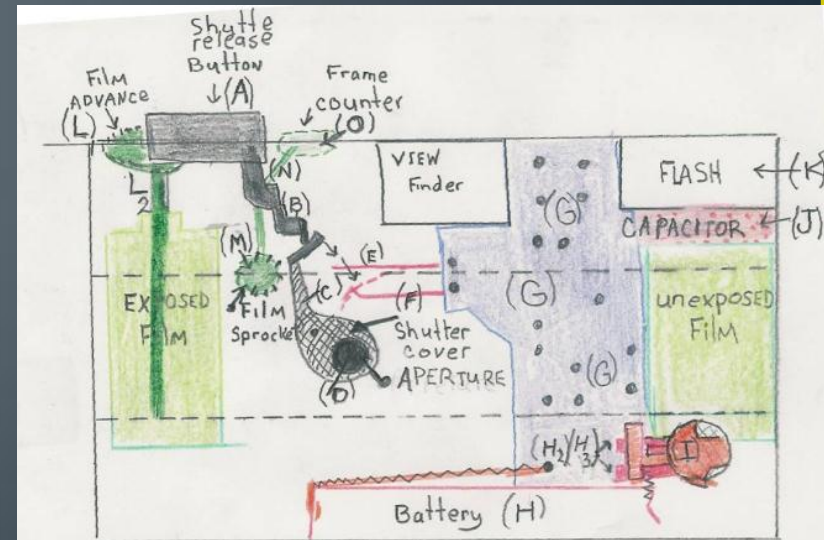
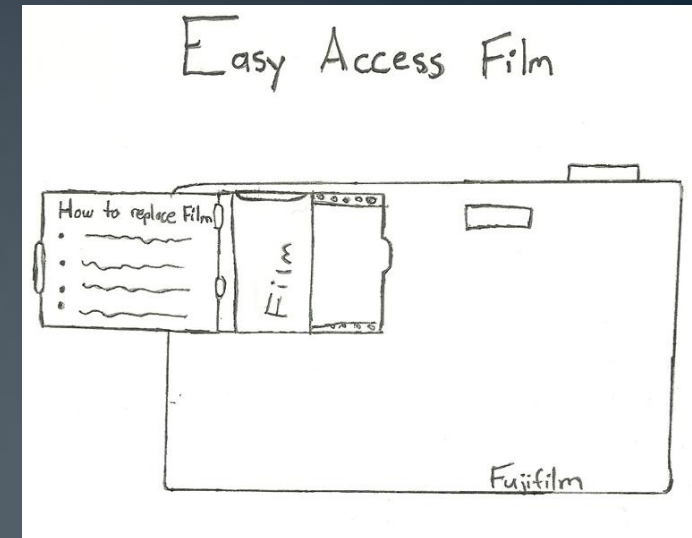
	AAA Battery	Flashless Camera	Replacable Film	Rechargable Battery	Solar Panel	Lithium Battery	Hand Crank
Cost Efficient	0	+	+	-	-	0	-
Usability	0	-	-	-	+	0	-
Durability	0	0	0	+	-	+	-
Efficiency	+	+	+	0	+	0	0
Sustainability	0	+	+	+	+	0	+
E-Waste	+	+	+	0	0	0	+
Market Pull	0	-	0	0	-	0	-
Ease of Manufacturing	0	+	0	0	-	0	-
Totals	2	3	3	0	-3	1	-3
Ranking	3rd	1st	1st	5th	6th	4th	6th

Weighted Matrix

		Replaceable Film		Flashless Camera		Replaceable Film + AAA Battery	
	Weight	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Cost Efficient	15%	6	0.9	7	1.05	6	0.9
Usability	12%	3	0.36	2	0.24	3	0.36
Durability	6%	5	0.3	5	0.3	5	0.3
Efficiency	6%	6	0.36	8	0.48	8	0.48
Sustainability	10%	8	0.8	8	0.8	8	0.8
E-Waste	25%	9	2.25	10	2.5	10	2.5
Market Pull	20%	5	1	4	0.8	5	1
Ease of Manufacturing	6%	5	0.3	7	0.42	5	0.3
Total Weighted Score			6.27		6.59		6.64
Weighted Ranking			3rd		2nd		1st

Our Decision

- Decided on a Camera Without a Flash
 - Decided Against Film Replacing
- Eliminates need for circuit board^[1]
 - Which means no more battery or capacitor
- Additional Marketing Ideas
 - Makes a smaller camera
 - Marketed towards children
 - Possibly add more appealing covering
 - Possibly use recycled materials



Prototype

- Eliminated Flash
- Eliminated Circuit board
 - Shutter is controlled without electricity
 - Flash demanded circuit board
- Smaller size
 - Because circuit board is absent
 - Requires less plastic
 - Fits children well
- Marketed towards children
 - Look into more appealing cover
 - Look into using the “green” movement



Analysis of our Decision

- Economic
 - Cheaper to manufacture
 - Possibly less appealing without flash
 - However price would be lower
- Social
 - “Green movement”
 - Geared towards children
- Environmental
 - Eliminates all major e-waste
 - Lowers amount of plastic, glass, etc. needed

Summary and Conclusion

- Economically, Socially, Environmentally
 - Increases Marketshare
 - Product marketed towards children
 - Smaller/lighter camera for easier use
- More creative casing/brighter color
- Overall:
 - The combination of the flashless camera with the new marketing ideas towards children creates a product that helps to achieve our overall goals of eliminating e-waste and increasing the demand of the disposable camera

References

- 1) http://www.umd.umich.edu/sep/students/mgmann/mgmann_pstech.html (Inner-workings of camera)
- 2) <http://www.dtsc.ca.gov/hazardouswaste/ewaste/> (e-waste)
- 3) <http://www.step-initiative.org/initiative/what-is-e-waste.php> (e-waste)
- 4) Sustainability information:
 - Dr. Thomas Colledge – slide show

Questions?