Group C.31 - Project Progress Presentation

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Summary of Key Components: Customer Needs

#	Need	Importance
1	The switch adapted t-shirt folder is durable and strong.	3
2	The switch adapted t-shirt folder can be used by multiple people at the same time.	3
3	The switch adapted t-shirt folder is easy to install.	5
4	The switch adapted t-shirt folder is not built with cardboard pieces.	5
5	The switch adapted t-shirt folder reduces the movement of hands.	5
6	The switch adapted t-shirt folder can be operated with a mobile app.	3
7	The switch adapted t-shirt folder remains stationary during its use.	5
8	The switch adapted t-shirt folder can be cleaned with a wipe.	5
9	The switch adapted t-shirt folder can be activated through voice.	1
10	The switch adapted t-shirt folder is visually appealing.	1
11	The switch adapted t-shirt folder can be used for other pieces of clothing.	3
12	The switch adapted t-shirt folder communicates its state to the user.	3

Summarize the key components: Benchmarking

Metric #	Need #s	Metric	Imp	Unit	Arduino powered	Automatic Clothes Folding Machine	T-Shirt Folder Electric Desktop
1	1	Durability	2	years of life	5	2	> 1
2	1	Load Support	3	g	>198.5	>198.5	>198.5
3	**3**	**Weight of Product**	**5**	**kg**	**5**	**<5**	**200**
4	2	Number of concurrent users	3	users	1	1	1
5	**3**	**Installation time**	**5**	**s**	**30**	**NA**	**NA**
6	**4**	**Built from cardboard**	**5**	**Binary**	**No**	**Yes**	**No**
7	**5**	**Reduces hand movement**	**5**	**Binary**	**Yes**	**Yes**	**Yes**
8	6	Used with mobile app	3	Binary	No	No	No
9	**7**	**Movement during use**	**5**	**cm**	**0**	**0**	**0**
10	**8**	**Cleanable with a wipe**	**5**	**Binary**	**Yes**	**No**	**Yes**
11	9	Activated by voice	1	Binary	No	No	No
12	10	Visually appealing	1	subj	1	2	4
13	11	Possible clothing types	3	list	T-shirt, long sleeve	T-shirt	T-shirt, sportswear,work clothes
14	12	Communicates its state	3	Binary	No	No	Yes

Summary of Key Components: Target Specifications

Metric	Unit	Ideal Value	Marginal Value
Durability	Years of life	> 4	> 2
Shock Resistance	Joules	50	30
Load Support	g	>198.5	>85
Weight of Product	**kg**	**<3**	**<5**
Number of concurrent users	users	>1	>0
Installation time	**Seconds**	**<30**	**<60**
Movement during use	**cm**	**0**	**<2**
Cleanable with a wipe	**Binary**	**Yes**	**Yes**
Reduces hand movement	**Binary**	**Yes**	**Yes**
Activated by voice	Binary	Yes	Yes
Visually appealing	Subj	5	3
Possible clothing types	list	Adult T-shirt	T-shirt
Communicates its state	Binary	Yes	Yes
Software compatibility	-	2	Apple iOS & Microsoft

3 Subsystems

Folding Actuators:

- Sliding Slot Drive
- Sliding surface/string drive
- 2 bar linkage
- Inline drive

Accessibility and Control System

Housing and Frame

Client Feedback

Can our design be stable on its own? Should we add rubber stoppers or straps?

How important is the app to the project as a whole?

What should be the dimensions of the product be? What should the height be? We are planning on the width and length of it to just be the length and width of the t-shirt folder?

What speed should the t-shirt folder be?

Do the children have verbal issues?

Do some children have uncontrolled hand movements, because we have an LCD so it could possibly break if a child punches it?

Project plan tracking and what's next

- Start assembling a physical prototype
  - Purchase materials
- Start the development of the mobile application
- Start programming the arduino to interact with the servo motors of our t-shirt folder
- Two crucial non-functional design constraints that have a significant impact on the creation of our prototypes need to be identified.
- Finish our second prototype.

- Next client meeting
  - Review both prototypes
  - Recieve any concerns and/or feedback on the prototypes
  - Discuss next steps

Mobile App Prototype

Pictures of Our Prototype Cad Model