Project Deliverable B

-Needs, Problem Statement, Metrics, Benchmarking and Target Specifications-

Group B12

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Introduction

The goal of this deliverable is to present a set of needs, a problem statement, metrics, benchmarking and target specifications that the groups final project will encompass. The project, which was determined by the client interview, is to create a fidget tool that our client can use as a base line of distractions to help her stay focused on her work. This device will help our client remain focused on her work and will be as customizable as possible based on her personal needs. Exactly how this tool will function is yet to be determined, but the completion of this deliverable will aid in deciding and clarify the direction of the final solution, as well as set target parameters that the final project will hope to achieve.

Client statements/observations obtained from client interviews

Clients preferred components.

Some type of clicking tool (Buttons).

- Would be good if it didn't make noise or little noise.
- Different levels of resistance in the buttons.

Some texture tools.

- Really liked the texture of the bark.
- Like the finger print part that she currently uses.
- Get samples that have textures from a hardware store to use for the fidget tool.

Could have lights.

- Shouldn't be too overpowering so it's not too much of a distraction.

Clients' criticisms of existing products.

- Not a lot of different options.
- Not enough texture.
- Could be heavier.
- Moving parts don't have enough resistance.

Materials.

Doesn't really matter but for the client we could use rubber, plastic(From 3D printer) and maybe metal(but she doesn't like how metal gets cold in the winter).

Other important specs.

- All components must be stimulating but not over stimulating to the point where it takes focus aways from what she is working on.
- When the cube is fully put together it shouldn't be larger than the size of a phone.
- Prefers more monotone colours that also aren't too distracting .Professional colours that don't stand out to make sure that it doesn't resemble a toy. Ex Grey, white, black, beige.
- Would prefer there to be multiple different tools on the block. This could be achieved by having different parts to the tools and them being able to be assembled together. This will be so it can be modified from day to day.

- Should be in a cube shape that could fold out into a flat layer. Could be based on a 12 sided cube concept.
- The price range should be similar to the ones that are already out on the market .

About Client

Our client is a Phd student currently studying in the field of neuroscience. Throughout her undergraduate degree ADHD has been something that she has struggled with, but she was not diagnosed until later on in her studies. After receiving her diagnosis our client has learnt many different ways to better cope, but she has determined that she requires a base line of distractions to help her stay focused on her work.

Customer needs

Below is a table of customer needs categorized in two sections, primary and secondary needs. All needs are ranked on a scale from 1-5, 5 being the highest and 1 the lowest. All needs that are ranked as a 2 or lower are considered secondary needs and all needs ranked as a 5 or higher are considered primary needs.

Table 1: Customers needs ranked on a scale of 1-5 and categorized into primary and secondary needs

Category	**Need**	**Importance (on a scale of 1-5)**
Primary Needs	Buttons with varying resistances	5
	User-Friendly tool	5
	Components with varying textures	4
	Sleek, clean-looking device to be used in a professional environment	4
	Wide range of the resistance	4
	Easily portable	4
	Low cost ($20 max)	3
	Maximum size of a phone	3
	Monotone colours	3
Secondary Needs	Multiple different attachments	2

Problem Statement

The client expressed a need for a small handheld fidget tool that could allow anyone who was suffering with ADHD to use to be able to refocus themselves. This is needed to aid the user to have a baseline of distractions to be able to focus on tasks that they have at hand.

Functional, non-functional, constraints and metrics

The criteria decided on in Table 2 have been split into three categories: functional requirements, non-functional requirements, and constraints. Functional requirements describe processes that are vital to the function of the project. For example in this project, the ability to incorporate different fidget components is considered a functional requirement. Non-functional requirements describe criteria that, while not vital, still remain important to the final project goal. For example, aesthetic and reliability, which are both crucial for user enjoyment. Finally, constraints are things that need to be kept in mind that might limit a project. A general example of a constraint is cost, as it is important to keep your prototype in the desired price range of the customer.

Table 2: Project design criteria, units, and verification methods

#	Design Specifications	Value	Units	Verification Mehtod
Functional Requirements				
1	Ability to be a stimulating tool	Yes	N/A	Test
2	Ability to incorporate different components	Yes	N/A	Test
3	Compatible with different types of users	Yes	N/A	Test
Constarints				
1	Cost ($)	20	$	Estimate, Final Check
2	Fidget tools dimensions	Pocket Size	cm	Test
3	Weight	Euqal to a cell phone	lbs	Test
Non-Funcional Requirements				
1	Aesthetics	Yes	N/A	Test
2	Reliability	90	%	Test
3	Customizability	Yes	N/A	Test
4	Longevity	Yes	N/A	Test

Benchmarking of similar products

Table 3: Benchmarking of Similar Products

Brand	VCOSTORE	ZCOINS	N.O.	Chuchik	ATiC	Dobiyar
Cost (CAD)	17.55	14.99	18.98	19.53	7.495	4.7
Weight (Gram)	80	36	40	18	22.68	
Size (cm)	6.1*6.1*8.13	6.2*5.99*4.7	3.3*6.1*5.08	5.08*5.08*5.08	7.11*3.81*2.54	Roughly 10*10*1.5
# of Buttons	4	5	5	4	4	~26
# of clicky switch	1	1	1	1	1	N/A
Sliders	3	N/A	N/A	N/A	1	N/A
texture pad	Yes	Yes	Yes	Yes	Yes	N/A
Joystick	Yes	Yes	Yes	Yes	Yes	N/A
Colour options	2	5	2	5	6	22
# of sides	12	6	6	6	2	1
Lanyard Hole	Yes	N/A	N/A	Yes	Yes	Yes
Modifiable	N/A	N/A	N/A	N/A	N/A	N/A
Material	Plastic	Acrylonitrile Butadiene Styrene	Acrylonitrile Butadiene Styrene	Acrylonitrile Butadiene Styrene	Plastic	Silicone
Image						

Target specifications

Table 4: Target Specifications

Brand	Importance	VCOSTORE	ZCOINS	N.O.	Chuchik	ATiC	Dobiyar
Cost (CAD)	3	3	4	2	1	5	6
Weight (Gram)	5	6	4	5	2	3	1
Size (cm)	2	1	3	2	4	6	5
# of Buttons	4	4	5	5	4	4	6
# of clicky switch	4	6	6	6	6	6	5
Sliders	3	6	4	4	4	5	4
texture pad	5	6	6	6	6	6	5
Joystick	2	6	6	6	6	6	5
Colour options	3	3	5	2	4	5	6
# of sides	3	6	5	5	5	4	3
Lanyard Hole	2	6	5	5	6	6	6
Modifiable	5	6	6	6	6	6	6
Material	N/A	Plastic	Acrylonitrile Butadiene Styrene	Acrylonitrile Butadiene Styrene	Acrylonitrile Butadiene Styrene	Plastic	Silicone
Total		59	59	54	54	62	58

Client meet reflection

The client meeting was a great opportunity to get to know our client better and understand her primary needs for this project. By preparing questions prior to the meeting we were able to be well prepared and understand all the key features that the final product should incorporate. Based on certain points that our client made we were able to formulate target specifications, benchmarking, and design specifications which would have been very difficult to do if we weren't aware of her exact needs and what the purpose of this tool was. All this information combined will be very beneficial moving forward when we start formulating concepts because we will have a list of criteria, based on what the client said, to look back to to ensure that we are meeting all of her specific needs.

Conclusion

Originally the appearance of the fidget tool was rather vague, with only a basic understanding of what the shape would look like, things like colour and texture was still unknown. We now also know more about what sort of tools and fidgeting items that are going to be on the item. We know what items to prioritize, that allows us to use our given time efficiently and have a better understanding of the end product. We also now know what sort of ADHD condition we are dealing with, we at first were unsure how severe the ADHD symptoms would be, but through the meeting we now know what to deal with. We now have more knowledge when it comes to creating a fidget tool that helps deal with ADHD symptoms.