Notes

Interviewed alvaro, what impact did that have on prioritization?

We were asking about the environment and how it is down there and the grid as well. We understand that grid failures aren't as frequent as we thought. That is why one of our requirements that is emerging is to emphasize this as a demonstration to kids and our focus has shifted slightly since then from supplying uninterrupted power to also demonstrating.

Another takeaway is where this will be stored. In and out of the maker space of the courtyard. Must withstand small rain but not like it'll be outside in a thunderstorm

Is it fair to say this also had an impact on the use cases?

No. They have remained the same. The fundamental aspects of how it operates remains the same. The concept of renewable energy affects the two other power sources and the operation of the cart is the same no matter what they are.

Keep an eye on the commercialization opportunities for a device like this. Vision is to have a system that can be used to transition between sources. Is that commercializable? What is the potential of the prototype? Keep an eye on it even if it isn’t the main focus. There’s a competition that you can submit ideas to that will help commercialize.

Collapsibility for a 3? Can you elaborate on this.

Our thought process was that the 3s were the ones that weren't black and white. There was not a specific size per say but the functionality is needed. How much it is needed to collapse doesn't talk to the magnitude. It wasn’t a 9… cut off… Dr. Esterman said that it may be an interpretation and maybe this is a redundant requirement because we have assembly and disassembly as requirements as well. They may be related but keep an eye towards this. He thinks visualization should have more a role now with the display. It may be more important now than in the past. He thinks everything else is reasonable. He might not change commercialization from a 1. He thinks Alvaro cares more about education so they need to talk and get aligned. He thinks the ranking can still be dominant and we can use a couple deliverables to get us to that goal. Even if we just keep an eye towards this in the future for a manufacturable design. This is driving costs so maybe on the next design iteration to keep it in mind.

Use cases suggestions

Raise self up to a higher level. Give thought to specific appliances that they might be using as part of the use case. What are they using the cart for? (education application within the maker space and integrating the scenarios). Think about the use of the cart as a whole. Setup and teardown are missing. Mission where we are going to rural school….

You gain a broader perspective when you create the use cases like this. The different environments also play a role. One of the NGO’s locations was on a steep muddy incline the bus could not traverse. The cargo had to be unpacked and carried manually.

Doesn’t give insight into when you would need mobility in our current style.

-Now into questions part-

Have we had a chance yet to see what last year's team had done and the state of their build and play with hardware?

I (Matt) haven’t been on campus. Others look at the project and where other materials are. Bill hasn’t gotten back from us yet though. Marcos said he could help there and can get more responsiveness out of Bill. Bill is Bill. Jennifer said that we have been in contact and he still hasn't gotten back to us.

How is everything working out in this remote/in-person model?

Phase 1 was fine with just zoom but every phase afterwards it'll be useful for us all to be there. Marcos said he can look into shifting his plan to be on campus moreso. He isn’t cleared yet but he can get that. He believes in physically interacting with solutions and gives insights into design weaknesses and strengths. Because of the nature of how last semester ended, play with their subsystems and have a real critical eye on their design. See what works well and what else should be an area of focus. Leverage what they did but do not be shy about improving their design. Marcos is happy with having a delay between phases so we can physically interact with the product moreso. Jennifer is okay with us being out of order to do a quick run at that. Part of risk analysis can be used to do a sanity check as to what they left last semester.

Inspired by collapsibility of car seats and strollers, one handed mechanisms that can make things fold up. Not sure if existing collapsible design was fundamentally sound or if there was a manufacturing issue. Not EE by training but thought the EE system was sound. One of last year's EEs was in a solar club. Verify that their systems are performing to last year’s specs and then check vs our requirements.

Going into the next phase we are looking into getting our own spaces to store and test to make sure the systems are operating the way we think they are.

Not thought through, Marcos has a lab space (hugh carey building) that is more of an office by function that has a big work table and he wants to see when his students are using it to give us a potential place to work if MSD can’t. Very limited tool set.

What excites us about the project?

Christian: Excited to work with renewable energy. Had an interest in renewables due to oil crisis (young age). Driven to work on this and solutions to rely less on the grid.

Jake: Full disclosure. This wasn’t on his top 5 list. But he is happy to be on this team. We are very free in how we want to go about the project. And he is excited to act as a product manager. And the end use case being Colombia which may be less privileged is cool to him.

Garrett: Something that keeps pulling him away from that we should be doing is designing for manufacturability. Has done several co-ops on that so if we can get to manufacturability itll make him happy.

Matthew: Similar to christian. Modeling renewable energy systems.

Tap into what excites us about renewable energy. If we are excited students that havent seen it probably will be too. And for Garrett, do the dfm now and don’t wait. Focus on the manufacturing and represent that view. That’ll help us in the long run. Also, focus on ultra-low costs so there is no need to delay looking at that now.

What keeps us up at night? (he will ask this next meeting) what are we worried about and how can we also address those things.