

**CONNIE HUANG:** So this semester we were working on [? Clampe, ?] which is an iPhone mount for the wheelchair. And the kind of special thing about [? Clampe ?] was there are iPhone mounts, there are plenty of iPhone accessories, but the client we were working with had kind of a special range of abilities and disabilities. So what we were building for the wheelchair was not only a mount, but also one that could accommodate his range of motion and his strength. And it ended up being something that was flexible enough for him and his needs, and still allowed him the kind of independence that he wanted in every day interaction.

**VINEEL CHAKRADHAR:** So I've actually done a bit of work in assistive technology in the past, and it's always really interested me. I think that working on assistive technology is one of the best things that an engineer can work on, both because the problem is quite interesting, and because every engineer wants to build something that helps people and this is one of the best avenues to do that.

**NATASHA GUNTHER:** OK, so the way this class was presented to me was a course six class that dealt with a client with a disability, and I was like, oh, I'm course two, obviously I have no place there. But what I was told was actually that you can come from completely different backgrounds, the main concept is that you have a direct impact on someone's life throughout the course of a semester, which is something almost incomprehensible. And I think you can only get a course at MIT as real life basis in helping a person.

**VINEEL CHAKRADHAR:** So coming into the class, I actually didn't even have enough information to build expectation almost. I just knew that it was going to be an interesting opportunity to work on an actual applied problem. And the first few years that I spent at MIT, I worked on a lot of theoretical problems, both in like coursework and things of that sort. And I thought this would be a really cool opportunity to, like, take my skills and things that I've learned here, and work on a real project with a real person.

I did learn quite a few things that were unexpected, actually. In class, there's-- I don't know, you're kind of taught that the things that are, like, most complex are the most grand in a large sense. But when you're working with real people, you tend to sacrifice complexity to make things work. Almost where you might be in a situation where, like, a solution that takes you a thousand times longer to implement might be marginally better, but like in the interest of time

and speed and moving the process forward, you're going to go for a simpler solution.

The thing I learned from that process is that you constantly have to modify what it is you are actually working on. Because at the end of the day, it's not so much about being given a problem statement that explicitly lists everything you have to do, but more about building something that your client wants. And the biggest thing we learned is that those desires can change over time, so it's more important, not-- it's more important, to work on what the client actually wants, and build something that you think he or she will actually use, as opposed to being fixated on what, like, the initial project proposal was to a sense.

**NATASHA  
GUNTHER:**

Vineel touched on this a bit earlier, but through a team dynamic and working in multiple vary-- iterations of our design, we found that assumptions are the most dangerous thing. And when you're moving through various iterations, a full 180 degrees pivot is not something to be afraid of because that can save your entire project, and we found that it actually did. We made a lot of assumptions initially about our client Aaron's abilities or disabilities, and we found we were compensating for a problem he never even had originally, so we did a pivot and created an item that he would actually be able to use and enjoy using.

Each disability has so many variations. Aaron defines his paraplegia as C5 slash 6. And there's so many ranges of paraplegia, and he doesn't even fit within one grade of it, so I think that gives you a little bit of an idea of how different each person's disability can be. And defining your assistive technology for just that one person is the most important aspect, because they're your client. But I think on a grander scale, we saw a problem within assistive technology is making it accessible to as many people as possible while still satisfying that disability. I'd say that's a great challenge in assistive tech.

**VINEEL  
CHAKRADHAR:**

The blogs gave us a lot of context, because to a large degree the posts could be about anything. And this was important because we know that we are engineers, and sometimes when you're working on these problems, when you get too deep into it, you almost forget why it is you're doing this. And I guess the biggest thing that the blogs did for me is that after a day spent in, like, the machine shop, or a day spent brainstorming design ideas, you could go to the blog and just read articles about people with disabilities, the struggles that they faced, how people are looking to combat those struggles, and it kind of gives you a renewed sense of motivation.

**NATASHA**

I'd say it's very important for the professor to realize that we may have no experience with

**GUNTHER:**

user centered design. I know these two did, actually, but I personally did not. And when it's about your client, it's a lot less about what design process you are you used to, and a lot more about what the client wants to receive from you at the end of the semester. So focusing a lot on client, not making assumptions, and-- I think the professors did a very good job this course, though.