The IMPACT Center Podcast – Full Episode Transcript
ImpacTech Episode 33 - " Opening Doors to Independence - Part 2 "

SPEAKERS
Dr. Mary Goldberg, Mike Soniat, Wayne Newitts

Mary Goldberg 0:04
The IMPACT Center at the University of Pittsburgh, supported by the National Institute of Disability Independent Living and Rehabilitation Research proudly presents ImpacTech. In our last episode, we explored the story and technical ingenuity behind door e today we pick up with the Open Door Robotics team to talk about where they're headed and how their innovation could reshape the future of accessible living.

Mary Goldberg 0:50
So I'm sure that the road that you painted for us thus far has been very clear and streamlined. There's this clear need and so on. But I'm sure it's not been without its technical hurdles. So we'd love to hear a little bit about the development process and what technical hurdles you faced along the way to be able to develop this non installation based control system.

Mike Soniat - DOOR-E 1:13
So by trade, I guess I'm a software programmer. Even though I've been an entrepreneur and business owner for most of my career, I started by writing the software that we sold in my company. So writing the software, that's the most fun part for me. I love also electronics. So building the initial robot, lot of fun. But then you start dealing with engineering issues, and I am not an engineer, so you know, what kind of wheels do you use? Different floor surfaces, different types of doors? How do you connect to the door without damaging the door? You don't want, you know, you want it to easily be removed and attached, but you don't want to scratch the paint or do any permanent damage to the door. All of those things I did an initial design. Had a friend who was an engineer helped me do the CAD stuff. Initially built a few prototypes. I really, you know, I'm a hobbyist with electronics, but I've been doing it for a lot of years, so I can pretty good at microcontrollers and all these little breakout boards. So I built a working prototype, an early working prototype between those two things. And I thought, because I've never done this before, I've been in the software business, not the hardware business, very simple. I have a circuit that works. I'm using off the shelf electronic breakout boards, which just means that they're designed for hobbyists. They have all the electronics is built into each little board, so you don't need all of that when you make a custom one. So I took the data sheets from those. I went and hired an electrical engineer, and I said I wanted this to be the case. Paid him for to build a custom circuit. But the only way you know if the circuit works is you have to have boards created, right? And it's very expensive to get a small number of boards made. So I spend a few $1,000 taking his design and getting some boards made, manufactured, assembled, shipped to me. So excited. Plug them in. They don't work. I just spent months and 1000s of dollars and it didn't work. So that was very disappointing. And so we in preparing for the show and for other events, I just said, Wayne, I'm going to go back to just building them myself, because I know they work. The prototypes we have

now have gone back to my bench, and I'm building those. We have six of them right now. Printed them on my 3d printer. Assembled them. I wrote the firmware, which is the software that runs on the Door-E. I wrote the app that's on the phone. We're integrating with the cloud, you know, so you can control it if you're not at home. So they've been some some challenges, and we still have some challenges. One is we still need to work with an electrical engineer to build a custom circuit board using my design, and this time we're going to have a better contract. Doesn't work. You don't get paid. And then there are some mechanical engineering challenges. Like, it works great on a flat surface, tile, you know, concrete, of course, what we had at the show, it's awesome, but on thin carpet, it works great. But the thicker the carpet, the more challenges arise.

Mike Soniat - DOOR-E 4:18
It may be just a matter of trying different tires. It may be different motors or different torque coefficients or whatever, but what happens is, in thicker carpet, starts out working great, but then it kind of it ruts in the carpet, so then the wheels want to spin. Maybe it's going to be suspension. So those are the kind of things that we don't really have the expertise to solve ourselves. We're going outside, interviewing some engineering companies right now and then, maybe not the final thing, but the big part of what we're trying, what we're needing to outsource, is the whole manufacturing process, because I can build prototypes, but I don't know manufacturing. Neither one of us do. So you have to have certifications. It's an electronic device we're putting in people's home. They need to be safe. We don't want someone tripping over it or getting hurt or somehow or hurting an animal or whatever. So all of the process of taking from a prototype level to an actual product that can ship, can be sold and ship, we need, we need help with that. So I'm talking to some companies and some individuals about that, just trying to make those connections. I you know, we we say we target end of the year. It would be great. I don't know if we can really do that, but we'll certainly be further along than we are now.

Wayne Newitts - DOOR-E 5:31
Anyway, I'll jump in then, but, but we come back this morning, after the after the show this weekend and yesterday, really motivated to to to meet that timeline. We had so many folks, I mean, willing, willing to, you know, handing credit cards to us at the show, basically. But we, we have to, we have to solve these, these engineering problems. I will, I will stay for the audience, though, that I don't think we're ever going to solve the 1970s shag carpet problem.

Mike Soniat - DOOR-E 6:01
But yeah, right

Wayne Newitts - DOOR-E 6:03
We're working on it.

Mike Soniat - DOOR-E 6:04
And we do focus on the interior doors for a very specific reason, two very specific reasons. ekeikAnd one is our our robot Door-E clamps to the door from underneath, and so you have to have a gap under the door. And of course, the exterior door doesn't have, it has, like a threshold. Like a threshold or weather ceiling. So whenever we do attack the exterior doors, which I'm sure we will next year or in the future, we'll have a different method of attaching to the door. But that's the first reason. The second reason is the door lock. So on the interior doors,

we have a little bracket plate that you just screw right onto the door latch. The same screws that are already there for the door latch, you just back them out, put our bracket there, put them back in. It keeps the door from latching. But Door-E actually keeps the door closed and open. So you now, I say, keeps it. You can still open and close it manually, so the wheels will turn. It's fine, but it's not going to blow open with the air or the wind. The air conditioner is not going to open it right. So it does keep it closed in those cases, but it's not locking the door. Kind of worked quite a bit. Trying to figure out a way to do that, it's quite a challenge, because you actually need another invention, another product, for the door lock. And there are electronic door locks, but they can be expensive. You have to get power to them. So we decided to take this strategy. It seems to work well for the interior doors, but of course, not for the exterior doors.

Wayne Newitts - DOOR-E 7:34
And so one of our big goals is to build a community, and that's as Mike mentioned. We we think we did pretty well this last weekend at a little over 100 post or our Open Door Alliance, as we're calling it, but we're really wanting to get our market research. We want that to come from the grassroots users of the product and folks who will and so we're really encourage folks who might be interested to join us there on Facebook is where we're starting, the community and and give us feedback as we go through these challenges. We kind of want to do it a little bit publicly too.

Mary Goldberg 8:08
Absolutely. Yeah, I was thinking as as you both were talking about some of the creative and convenience factors that you've integrated. So for example, the the bracket for the lock using the existing infrastructure, but then also the pain points, like the shag carpet, for example. Did those ideas come from users specifically, or those challenges come from users of Oh no, I've got this shag carpet and i i now have this weird track and the wheel spin and doesn't seem to work.

Mike Soniat - DOOR-E 8:41
We're the only ones who have tested it so far. So we don't, we don't have anybody beta testing it.

Wayne Newitts - DOOR-E 8:46
And Mike's the only one with shag carpets.

Mike Soniat - DOOR-E 8:50
Bright orange.

Mary Goldberg 8:51
Is it a carpet problem or a device problem? Maybe this

Mike Soniat - DOOR-E 8:55
could be a Mike problem. So I do have carpet in my home. It's not the shag carpet, but it's, it's thicker than you know what I would have in a commercial environment, and it works great until some point where it starts to slip and it's not consistent. So it's one of those things that will will take some experimentation, and I have been experimenting some, but I'd rather have someone with some engineering knowledge say, try this and this and

this. Not just let me try a bunch of things to see what sticks. You know, it's just time consuming and costly, but, but, yeah, so most of it has come from not only, you know, our own experiences, but also people think of these things when you talk to them, because, like, the door latch, I mean, it's like, the second thing everybody asks when they see it like, what do you do about the door latch? Yeah, so we are getting feedback constantly about that. People are giving us a lot, I guess, good ideas. We want to put in some logic so that you know, if a pet is in the way, or if a person's in the way, it will just.

Mike Soniat - DOOR-E 10:00
Stop. It's not going to hurt anyone. You know, it's not going to slam. You can control the speed of it if you want it to open slower or quicker, those kind of things. So it's an evolving spec, but the basics are there, and they work and proven by the trade show. I mean, our little prototypes. We had six of them, different colors, and they ran three days pretty intensively, opening, closing the door, showing people, and they stood up really well. So

Mary Goldberg 10:28
That's a good durability test right in and of itself. Yeah, that's awesome. So it sounds like in this pre release phase, you still have some design features that you'd like to integrate, including that logic and some of the fail safes make sure that people stay safe while using the product, testing it with users, of course, and then the manufacturing step, what else do you need to do to get Door-E market ready?

Wayne Newitts - DOOR-E 10:54
Let the world know, said the sales and marketing guy, you know that, and that's again, a challenge for us. As Mike mentioned, we both come from a different industry. We're thrilled to be to find ourselves here now, you know, we're just craving feedback. That is my MO right now, to build it, you know, to build our community up, because we're not selling right now, when we do, we want to get this right out of the gate.

Mike Soniat - DOOR-E 11:18
Yeah, and the manufacturing process is not just simply manufacture some items, right? You have logistics, you have distribution, you have, you know, warranty, you have, you know, all shipping, all the things that come along with that that we do not have experience with. So we're trying to, we're really hoping, to find sort of a turnkey company that can help us with everything from, you know, initially getting a product that can be manufactured, all the way through all those things I just mentioned. I mean, it may not find one company that can help us with all of that, but there are, there are some out there, and I have meetings with them this week, a few of them. And that would be ideal. If not, we will have to piecemeal it to find the best opportunities. But, I mean, there really is nothing else holding us back, other than just making sure that our product is safe, operates as we say it will, and our next step is to do some beta testing with actual users. And Rich will be one of our users, and we have a few other people that are interested, and we may actually go to our community and see who would be interested in testing it out with the understanding that may not work in every situation right now, get that feedback before we make 10,000 of them, we want to make as sure as we can that they work again. Wayne and I from the software business, so if there's a problem, you just fix it and you send the new version that you can't do that with hardware, right? You have a physical device that was created. If you make a change, you start all over, and you spend 1000s or 10s of 1000s for the next batch. So we really want to be sure, but we don't want to spend years and years doing this. We want to get this out on the market. There's a need right now. We have filed for the

patent protection because we don't want someone to come along and steal our idea. But of course, that's still not a guarantee that it won't happen. We want to do it right, but we want to be quick enough to beat people to market partnerships with distribution companies, and we don't really know the channels, because we've sold software. But who do you deal with to sell products on Amazon? I mean, who do you deal with to maybe we do want to go on Shark Tank. Who knows? I mean, so there's a lot of things we still need to learn about. That whole getting the word out, letting people know, and then letting people buy a Door-E packaging is another thing that just pops into my head, right? You gotta have a nice, little cool package so when they see it, they know what it does. So yeah, a lot of work to do, but we're very motivated to do it seemed like maybe we're a couple of old guys for starting a startup, but we're so motivated and so passionate about it that, you know, there's nothing slowing us down at this point.

Wayne Newitts - DOOR-E 13:51
No, my hair is going back from gray to brown because of this project

Mary Goldberg 13:57
To find the natural aging process. Your new passion project

Wayne Newitts - DOOR-E 14:03
We're not claiming that Door-E can reverse aging. I want to be clear,

Mary Goldberg 14:07
Yes, yeah, that's a future goal, yeah. So straight from the voices of the consumers. Then, you know, you've been hearing these stories and testimonials of folks saying, this could really change my daily life. Do any of those stories stand out that you might be willing to share?

Wayne Newitts - DOOR-E 14:28
The one that really affected me to the point I walked away from the booth for a moment was a woman very passionate about the fact that this device could give her mother her dignity back. And that word stuck with me, because we've all, most of us have encountered situations where we're reliant on others and we don't necessarily want to be all of the time. And that really affected me greatly, that this was, you know, a device that would give people freedom and dignity. I don't want to build or sell or do anything else. When you hear things like that, right?

Mike Soniat - DOOR-E 14:58
And I don't, you know, maybe it's a conglomeration of a few different people, but there were several younger people, maybe preteens or teenage people, that the parents were there with them, and one kid in particular just was so excited, because exactly what Wayne said, they don't want to be reliant on everybody else, right? He wants to be able to open and close his bedroom door and his bathroom door, but he's never been able to do it. I mean, he was gushing, and it was just because he's going to have this control he's never had, and it's not going to, you know, cost him $10,000 so he can open and close his his doors. It's a nice, little, cute little device. I don't know if you've seen the pictures of it. I mean, it's manageable very easily. And you know, those kind of things just

that sells itself when somebody sees that in your product, but it really makes you feel good about what you're doing, too.

Wayne Newitts - DOOR-E 15:48
And that young man has already given us three comments in our Facebook community for improvements for the product. Yeah.

Mary Goldberg 15:55
That's a great early adopter, right there. Yeah.

Mike Soniat - DOOR-E 15:57
Exactly, exactly. We also heard from a lot of people that were professionals, educators, lot of occupational therapists. They just are in the industry where they want to help people, and they just see this as just another tool that they can recommend, that they and they want us to come talk to groups. I mean, we were invited to mentor kids that they want to go into robotics. I mean, all just the whole gambit of of things, but lots of opportunities to go and show Door-E different charities or different groups that are helping this one group of individuals, but then they all have this common need, and that is mobility, and it fits all of them really well. And more, pretty exciting.

Mike Soniat - DOOR-E 16:41
Absolutely sounds like a really fun time to be able to get involved with the great work that you're doing. So how do our listeners stay updated, get involved and support your work? Could you please direct them to how to find you all on this Facebook community and any other contact us information you'd like to share.

Wayne Newitts - DOOR-E 17:02
Absolutely. Wayne Newitts, Mike Soniat. You can find us all online anywhere you want to go, but the best way to engage with us interactively would be our Facebook community, where, that's where we're building it out right now, as mentioned a couple of times, but we're posting a lot of information there. Updates being very transparent about our development process, updates on the product when it will be available, and also getting folks to start talking about their mobility needs, the challenges that they have, so that we can pull from that and create the next Door-E.

Mike Soniat - DOOR-E 17:36
So the Facebook is open door robotics.

Wayne Newitts - DOOR-E 17:39
Yeah, Facebook slash Open Door robotics, you can always call us now at 844, open for me, so call us. You can email any of us. It's Mike at Open Door robotics. Wayne at Open Door robotics.

Mike Soniat - DOOR-E 17:53

We do have an open door robotics.com website. We also have a a Door-E D, O, O, R, hyphen e.com, site, and you'll so all of those kind of connect together. Facebook right now is where we're focusing our attention, and as soon as Wayne can get a get a Instagram.

Wayne Newitts - DOOR-E 18:10
Yes, i Little did I know that at age 62 I'd be figuring out Insta. I had no idea that this would happen. Luckily, I have children.

Mary Goldberg 18:20
See, there's the anti aging right there. Keep you young.

Wayne Newitts - DOOR-E 18:24
Young.

Mary Goldberg 18:25
Yeah, getting on the Instagram, for sure. Getting on the Insta, as the kids say.

Wayne Newitts - DOOR-E 18:30
See, I knew to call it Insta. I'm I'm progressing.

Mary Goldberg 18:34
Yeah. We can't wait to follow your journey. It sounds very exciting, and we will continue to stay tuned for for updates and they share any final thoughts.

Mike Soniat - DOOR-E 18:45
You know, I guess it's the same thought over and over, and that is that we're very excited to be in this industry. We feel like we have something that can really help people and and we want to get Door-E make it available as soon as possible, because people want it now, and so just follow us. We want your feedback. Anyone that that hears this, if you have suggestions, look at the pictures, look at the video, and if you say, Oh, they're doing this wrong, please send it. We're not going to be insulted. We're not going to be upset. We want it to be as good as it can be. And we want ideas for Door-E two and Door-E three and Wayne anything.

Wayne Newitts - DOOR-E 19:24
No, just a real appreciation. First of all, the University of Pittsburgh, I mean, to go to a developer's conference with no idea you know the industry, your place in it, and to come away with a winning with, we're so proud of our trophy. Thank you. To come Away with that.

Mary Goldberg 19:44
You're so welcome.

Wayne Newitts - DOOR-E 19:45
Yeah, it was. It really made us feel like, my gosh, we're on the right track here.

Mike Soniat - DOOR-E 19:51
Yeah.

Wayne Newitts - DOOR-E 19:52
Let's stay on the right track. And again, the best way to do that is get, get, get a community of people to keep you up, keep you between the guardrails.

Mike Soniat - DOOR-E 20:00
Right, yeah. And that's a good point, Mary, I want to thank you and University of Pittsburgh, everybody, everyone involved in your organization, because it's letting us give us opportunity to get our word out, let people know about us that's invaluable to us. So thank you for giving us this, this chance.

Mary Goldberg 20:17
You're very welcome. And yeah, congrats again on on, winning the 2025, Impact Award for the RESNA design showcase. It was a real honor to meet you in person, and real pleasure to speak with you both again today. So thank you so much Mike and Wayne for taking the time.

Mike Soniat - DOOR-E 20:36
Thank you very much.

Wayne Newitts - DOOR-E 20:37
Thank you, Mary.

Mary Goldberg 20:39
Thank you for joining us for this conversation with the team behind Door-E, the 2025 Impact Award winners at the RESNA Developers Showcase. From a personal solution to a powerful innovation, Door-E is setting a new standard in accessible design, proving that independence doesn't have to come at the cost of portability or affordability to learn more, join the Door-E community at door e.com. For more stories of innovation at the intersection of technology and inclusion. Follow the IMPACY Center at idea the number two impact.org and subscribe to ImpacTech wherever you listen to podcasts.

Mary Goldberg 21:25
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