Ep.12 - Michael Healander of AirSpace Link

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SPEAKERS

Announcer, Ed Clemente, Michael Healander

A **Announcer** 00:01
Welcome to The Michigan Opportunity, an economic development podcast featuring candid conversations with business leaders across Michigan. You'll hear firsthand accounts from Michigan business leaders and innovators about how the state is driving job growth and business investment, supporting a thriving entrepreneurial ecosystem, building vibrant communities and helping to attract and retain one of the most diverse and significant workforces in the nation.

E **Ed Clemente** 00:28
Welcome to the Michigan Opportunity brought to you by the Michigan Economic Development Corporation. Hello, my name is Ed Clemente. I'm your host today on the show and we're lucky to have Michael Healander, Co-Founder and CEO of Airspace Link. Welcome to the show, Michael.

M **Michael Healander** 00:43
Thanks, Ed.

E

Ed Clemente 00:44

I'm very excited about the drone growth and I know you're actually very involved with it but your niche for drones is different than what most people would think. You're sort of a little bit - I'll let you describe - what do you tell people what you do in your quick sort of 30-second speech.

M

Michael Healander 01:02

Yeah, think about Google Maps for drones or Waze for drones but the difference is the roads don't exist yet. So Google Maps had the roads to map to the rules, the regulations, you know, where are the guardrails, speed limits, all that in place. So what we focus on is two parts. One is building the roads and rules and regulations in partnership with the FAA and state and local governments. And then we publish those, say, rules and regulations and where you can and can't fly and how to get authorization to the drone industry, whether you're a recreational pilot, Part 107 commercial pilot, and most recently, through the BEYOND program, flying beyond visual line of sight for advanced operations. So we're the mapping in the digital infrastructure for the drone industry to help them scale.

E

Ed Clemente 01:49

So, not, and I don't know if you threw this term out there, but like GIS and GPS, you have - why don't you explain what both those are real quick.

M

Michael Healander 01:59

Yeah, so our focus like I mentioned is mapping well, geographic information systems, (GIS) is an authoritative data system that's used by federal, state, and local governments to manage and publish, like I said, the roads. We use that to build out those digital roads. You can't see them, so they have to be managed in a system that is showing where you can and can't fly at 400 feet and below. And we also have to start to build safety cases, too. Think of it almost like a transportation planning tool. Where are we going to put it in roads and why? Well, it's very strict on - FAA is about safety, all about safety and their high standards and what you're flying over, you don't want to fly over schools, hospitals, jails, you need to understand the number of people you're flying over, the land use, the zoning, people's property lines, understanding that helps build out these corridors for flying and that's done through what's called GIS. And GPS comes into play when the drones are flying to follow those corridors and the flight path through those communities, so it's not an annoyance or involve privacy issues.

E

Ed Clemente 02:00

Yeah, so one is sort of like the map and the other thing is the actual vehicle coordinates going from point A to point B kind of thing.

M

Michael Healander 03:13

You got it.

E

Ed Clemente 03:14

Okay, and, you know, I know that this air is, I mean, I see drones everywhere, but I'm sure - isn't there also, I know, what is the ceiling against it? 400 feet?

M

Michael Healander 03:26

Yeah, so our company, we partner with the FAA and we're a supplier. We're the front end for all those rules and regulations. And it's called LAANC, low altitude, authorization and notification capability and that was put in place as a lightweight air traffic control system, so if you want to fly in controlled airspace, which, here in Michigan, 40 or 50% of the population is in controlled airspace, you have to get approval to fly through our system. And we communicate your flight location and time and height to air traffic control towers throughout Michigan. It just takes a few seconds to get the authorization, but that's the first step in having an air traffic control system here in the U.S. for drones.

E

Ed Clemente 04:11

And I would imagine it's even harder because say, even though you use the analogy of roads, it's actually three dimensional. Right? So it makes it a lot harder than just, like, on a paved road. It's going up and down and laterally and everything else. So I imagine that's like an air traffic controller problem, like when you're bringing planes into landing, right?

M

Michael Healander 04:36

Yeah and the difference is, you know, you know where the airports are. They land and take off in the same location. Now, with the introduction of drones, you're going to see that a lot more landing and takeoff locations are going to happen throughout our community, and that's what our system is in place for, is to help. It's kind of like scooters came into cities and they weren't ready for them. They just - they were everywhere. The FAA doesn't want that to happen. So we've built in in this type of transportation planning, and then

UTM - unmanned traffic management system - to support the integration so it just doesn't go nuts. It's going through a process and safety is driving all of it as safety and community engagement and community perception is a big deal over the next year.

E

Ed Clemente 05:17

And I would imagine, too, that there's even, you know, you got like, I know, on your website, you work with a lot of different local governments and - is there a, like, a defined boundary? I remember, like, when we got property up north, we had mineral rights below us; is there like the same kind of restrictions like going vertical?

M

Michael Healander 05:45

And it's a very hot topic, by the way, so I'll keep it very simple where we're at today, so the FAA owns all the airspace from the ground up. But if you want to start to fly through a community, you have to build a pretty heavy safety case, what are you flying over? How many people? How many businesses? Are you flying over a group of people or a 9-1-1 call? How do you know that? So by having communities connect to our platform, cities, counties and states, they're communicating what's on the ground, any major events, you know, a soccer game or a parade or farmers market or a 9-1-1 call, that data is now used in real time for pilots. So as they fly through a city, they can change their flight paths based on what's happening, not only in the air, which the FAA is concerned about, but also what's happening on the ground. And that's what's going to help scale the drone industry is that community engagement and having a tool to publish, hey, there's something sensitive happening here on the ground. Fly at the risk that's required for your drone.

E

Ed Clemente 06:54

Yeah, you know, we're going to get a little bit more about where you think the future is going to be with some of the actual products that could be used. But when you said light and heavy, what's considered? What is - is there a pound differential, it's size, or what?

M

Michael Healander 07:12

Yeah, absolutely so there, it's uh, let me explain. There's really a switch of good and bad. So, right now we as a company and the FAA manages airspace at 400 feet and below, 55-pound drones or less. So that is the - we manage that today, with 726 airports throughout the U.S. So above that starts to get into a heavier waiver and process because as you start to get to 400 to 500 feet and heavier drones or aircraft, now you start to get into helicopters and it starts to get a bit congested and when you start intermingling with

manned aircraft it becomes a real issue for safety.

E **Ed Clemente** 07:53

You might have mentioned this, but did you say there's a floor too?

M **Michael Healander** 07:58

There is not a floor today, there is, it's called lead law that is up for potential ruling that cities could potentially manage or create ordinances at up to 200 feet, from the ground to 200 feet. So there's a real challenge out there in the industry, the FAA, local governments, and the drone industry that are at odds right now over that rule. We are monitoring it and, for our system, it will manage either way. So if that rule goes into effect, our system will adapt and then communities will be able to manage that airspace. If it doesn't, then our system will still manage it at the federal level as well. So that is up for debate.

E **Ed Clemente** 08:43

Yeah, well, you let me ask a couple other things, too. This is more on the technology side. But does the rollout of 5G or edge computing kind of have to play some of the aspects for you, too?

M **Michael Healander** 08:56

Yes. So we are deploying - so think of us as a digital infrastructure with all the mapping and where things go that some of our partners, when you create the safety case, our system figures out what you're flying over, how many people, and the probability of seeing someone on the ground or in the air? The next piece of the safety system for the FAA is what's your communication networks? How strong is that? Do you have any dead spots? What is your what is the risk of losing connectivity? So 5G and leveraging existing infrastructure is super important and leveraging the existing radar systems. Even here in Michigan, we're doing a feasibility study through Southeast Michigan in parts of Michigan: what infrastructure's already there, what infrastructure is going in for autonomous vehicles, say, for some of these autonomous vehicles, and how can we leverage that, not just for those vehicles on the ground but for above the ground? That's very important is the investment that the state is putting into the infrastructure for the ground, it will transfer to the air as well, so this is really important, so 5G is important.

E

Ed Clemente 10:04

Yeah, and I just know that with things like, I know, Starlink. And I know the people are setting up, you know, different platforms of getting, with the edge computing, closer to devices so that you don't have to make that either. You can lighten the load of battery, you know, operations, right.

M

Michael Healander 10:25

Yeah, well, definitely, we have some companies that are looking at putting charging stations for drones so they can hop. That's very important, too. Again, everything aligns with safety. So if a drone - it goes up against a headwind and it needs to ditch or land because the batteries are dying, having those charging stations, and we're looking at, we have partnered with some cell tower companies that want to make their, the area along the bottom of the pole, an emergency landing location, because they have great locations, they're powered, and they're secured behind a fence. So that starts to get locations where they can dock charge, unload some data, if needed, and maybe to get to their next location. So, yeah, edge computing is going to be pretty important as well.

A

Announcer 11:10

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E

Ed Clemente 11:25

I first heard of you through a friend, a mutual friend of ours, Tim Keys, but I also know that because of the aerotropolis, and I don't know if you want to give a definition of it, it's basically a catch basin around the two airports in Southeast Michigan. But I know you're doing a lot of work with them, but who are some of the other partners? And I should also mention, I think you partner quite a bit with the MEDC as well, right?

M

Michael Healander 11:54

Yeah. So you know, we started this company a couple years ago. And we did, we went through the PlanetM group, and they helped us get started, got a first hot desk, one person and, or two of us, myself and Anna, and then we grew.

E Ed Clemente 12:11
Anna is your wife by the way...

M Michael Healander 12:12
Yeah, my wife, so she's a co-founder. So we had three co-founders, Danny Bradshaw, Anna Healander, and myself, and they helped us get started here in Michigan through mobility, you know, putting us into that group and getting us connected locally and we've grown tremendously. We've raised $14 million in two years, which we still have a lot of that money to put to work that we've barely touched. And they were a big part of that, helping us build this great startup in Detroit, and downtown is our headquarters. So they are a huge piece of getting started, was the MEDC, and we still keep close to them, because we're building jobs even for ourselves. But then potential manufacturing jobs that will come down the road with what's going on in aerotropolis. So aerotropolis was one of our first customers, they tied to the same week, our very first customer in Ontario, California, and aerotropolis, here in Detroit, and they they were our first customers to start to build out this digital infrastructure. Now we're at a point where we are going to start to have drone operations, a large manufacturing or automotive company's going to use the system to do just in time parts delivery along the supply chain. And we've started to bring in drone operators that will sit on top of our platform that will provide those services. And a little bit more B2B. We have a healthcare facility, too, that will do medical delivery from hospital to hospital. So this is for drone delivery. It's not what you think - a burrito to your house, we're starting with business to business to get it introduced into the communities. And in Syracuse, New York, for example, they're doing COVID test kit delivery through the downtown city from hospital to hospital, just to start to introduce it. So Detroit aerotropolis is one of the leaders to the point where NASA is considering it as a test site for Willow Run and the proposal has been sent in so just from a year ago of doing our first, you know, kickoff test, and now we're being looked at as a leader.

E Ed Clemente 13:19
Yeah, no no, I mean, it's kind of interesting, because it's sort of the wild west still a little bit too, right, because I don't know where everybody's gonna land (no pun intended) but you were gonna add something, sorry?

M Michael Healander 14:16
No, I was gonna say, it is a bit of the Wild Wild West, but it is - all the rules and regulations have been submitted - they are in process. There is something called remote ID that all drone manufacturers within 16 months cannot sell a drone here in the U.S. without

broadcasting their location where they're at and it truly is become an air traffic control system for recreational drones and part 107 and now we're about to layer on another type of drones, patch delivery drones, which are a little bit more commercialized than your recreational flights, and that will be happening by the end of this year, 2021.

E Ed Clemente 15:10
You're physically, your office is downtown Detroit, right?

M Michael Healander 15:13
Yep. Yeah, we're on Library Street in downtown Detroit.

E Ed Clemente 15:17
And you're, I know, I went on your website, but you probably can correct me, but you're in multiple states, right? How many states are you in?

M Michael Healander 15:25
We're in 19 states as of today. We had a really good fourth quarter last last year and we are very busy. And we are hiring another 30 to 40 people in 2021. So we, we are busy from an HR standpoint, hiring. So think about 2021 is really setting up for 2022. Because of a lot of the infrastructure funding that's coming down. There is funding from federal highways for building UAS, departments and infrastructure at the state level across the U.S., we're positioning for that to help integrate drones.

E Ed Clemente 16:12
Can you say what UAS is again?

M Michael Healander 16:15
Unmanned aircraft systems or unmanned aircraft - it's a drone - unmanned aircraft system, it's the entire system, not just the drone, but the control station and what you control it with.

E Ed Clemente 16:28

As we get sort of near the end here, does that mean you'll be integrating platforms, say, with autonomous vehicles? And I know up at Michigan Tech, they're working on autonomous vessels in the water, is that going to be a shared platform or will they all be sort of separate platforms?

M **Michael Healander** 16:49

It might connect to them, but the airspace is very much its own system because the odds of a drone hitting a car or vehicle on the ground or something on the water, it's very different, where managing the traffic in the air is kind of its own system. Now understanding if a pack - so, you know, a example of a - best way to put this, a organ delivery is being done now that is being driven by a truck that is then using a drone that launches from that truck to an autonomous drone. That is a manned aircraft that then is landing and then going into an autonomous vehicle that is going to the other hospital. And this is all about a multimodal system. That is where they're tying it together, when it's a multimodal, and communications on how to get something from A to B using different mobility systems, but not for air traffic management. Hopefully I explained that - it's a closed system, but you can tie into it to understand where a drone is at and where it will be.

E **Ed Clemente** 17:57

Right, so the integration, so they don't, somehow, but you do need that...

M **Michael Healander** 18:02

It's more about communication, like, if we are trying to get something of critical or, you know, we need a part from A to B, knowing where it's going to be dropped off. It will be the communication.

E **Ed Clemente** 18:14

Right, but mainly, I think in your example, and I've got like two questions left for you, but I know, like, I think you mentioned or we talked once about, say my mom was on insulin. And say it was like, you know, we couldn't get it to her quick enough. Say it was the day after a snowstorm or something like that... Like that is kind probably be the early adopters are at least what people be used to seeing first going over public spaces, right?

M Michael Healander 18:42

Yeah, so B2B is going to happen starting this year, it'll be public space. And we'll be back and forth between hospitals say that the next step is forth, but it's all about public acceptance, it's getting an epipen to someone or medical, especially during COVID, this became a big deal, that you could just order a product from a CVS or an Amazon. And if they cannot get out there, or you need it in real time, 30 minutes or less, it does have these quick shot drones that will go out and drop off the packages and skip all the traffic and get to where it needs to be. And that will start to roll out after the summer. And the reason for that there's something called type certification. So there's twelve companies getting their drone certified to do package delivery but they have to get a certification. Once they get that they can mass produce those drones but until they get certified, they can't mass produce.

E Ed Clemente 19:37

Right, and I know we could probably do this for another couple hours, but I do have two questions. I know you're going to really struggle so I'm not going to really nail you too much in this last one. But the one before it is, I know you do mentoring with kids and what would you, like, obviously go to your website, right, but saying you're talking about middle school kid or high school kid, you know, you're saying this is a great place to maybe work in the future, right?

M Michael Healander 20:05

Absolutely. So I do mentor Frederick Douglass High School in Detroit and Belville High School. GIS mapping systems, learning that. Second, drones, getting a drone pilot, and then combining those together is a big deal. So understanding aviation mapping systems and drones will be extremely valuable in multiple areas within the industry over the next decade.

E Ed Clemente 20:33

And the last question, you probably have a better bird's eye view of this of anybody that we've asked, but what do you like living, you know, what do you like best about living in Michigan? Because I'm sure you've seen it from higher up than most of us.

M Michael Healander 20:47

I'd have to say, I used to love the winter, I don't so much now. You know what, the

resurgence in Detroit, you know, I had a startup in California and when I came back here and started Airspace Link, I said, I want to stay here. And I was able to work with MEDC to convince me to stay and then Dan Gilbert's group to invest here, Invest Detroit, helped us say, alright, we will invest to keep this type of technology here. And it's been amazing compared to other locations. Because there's so many ways to invest or too many people, too much noise in other states, where here in Michigan it's very streamlined. There's only so many investors, there's only, you know, one MEDC, one PlanetM. And we were able to streamline, very focused, and allowed us to move very quickly. So that's when it's been great to be here in Michigan.

E **Ed Clemente** 21:39

And I'm sure our producers of the show are going to steal some of those quotes you just gave us because they're pretty gold for them. The great links you have to the MEDC and to the state of Michigan. And with that, I want to thank, again, Michael Healander, the co-founder and CEO of Airspace Link. Thanks, Michael, for taking time to be with us today.

M **Michael Healander** 21:58

Thank you.

A **Announcer** 22:01

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