ON THE PLATFORM EPISODE: BLUE SKY THINKING: AERIAL OPPORTUNITY FOR BUSINESS

VIDEO TRANSCRIPT

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Matthew: Hello, and welcome to the latest episode of *On the Platform*. My name is Matthew Quinlan. I'm the geospatial platforms lead at Accenture, and today we're going to explore robotics, drones, and unmanned autonomous systems. I'm joined by Antoine Martin, who's the autonomous systems practice lead here at Accenture. Antoine, we've had some good conversations about mapping drones, submarines, various things, so I'm really looking forward to the conversation today, so welcome to the program.

Antoine: Hi, Matthew. It's great to talk to you today.

Matthew: Great. So I think what would be useful is starting maybe just setting the scene a little bit. As I or we think of drones, autonomous vehicles, the thing that comes to mind often is military drones, consumer devices, friends of ours posting their Facebook video of the top of house, or driver assistance and driverless cars. Can you maybe frame for us a little bit how you think of drones and UAVs, and maybe particularly in the commercial world?

Antoine: Yes, absolutely. The drone sector, as I call it, has really evolved over the last, you know, ten years, really. It really started with military and defense forces using drones to get an eye over the hill, really. And that technology has bettered itself through, you know, CPUs and just consumer electronics, really.

And it really came to a point where drones are now a consumer tool that everyone can have one in the backpack, much like a regular camera or tablet. And a lot of professionals have realized that this new tool can really be used in their day-to-day work. So what we have seen over the last, I would say, really four, five years is an adoption of drones by professionals in mines, in construction, in fires and public safety, in utility companies' inspection of their transmission line, for instance.

So it has really branched out from a military expensive tool to a hammer, a hammer that can be in the trunk of any type of field worker. And it has really grown much beyond what everyone

really thought initially. And everyone is reaping the benefits of the technology.

Matthew: It sounds like applications are largely around faster, safer, cheaper sensing of the real world. And how about drones carrying, doing things rather than just sensing?

Antoine: So that's going to be the next wave, really, that we haven't really been exposed do, mostly because the government is always behind the curve of the technology, and laws are being adopted just because there's a lot of pushes from the vendors, and from lobbyists, and from people who want to create jobs. So, so far you're right, drones have been observers.

Tomorrow drones will be your truck, your light truck that will bring you things that you need. There's been actually a lot of tests going mostly outside of the U.S. in countries that have very little regulations, and there's plenty of those countries in Africa where a couple companies have already delivered hundreds of packages of blood to hospitals.

Blood has a short shelf life, and when somebody is hurt, you need to access very rugged terrain very quickly, which is a challenge. So the delivery of drones being used as mini trucks is yet to be realized, but is absolutely enormous, because it'll touch every aspect of logistics, transportation, e-commerce, etc.

Matthew: I love that blood example. That's a great application of the technology. So I think one of the things that's most interesting to me is looking at the parallels between drones and maybe some of the other technologies that are being embraced or really developing very quickly, if I think of autonomous vehicles, mixed reality. So I wanted to kind of unpack a little bit some of the technology that maybe drones have been pioneering or at the front edge of. Could you maybe help us unpack some of the capabilities in technology that the drones leverages or has had to develop and master?

Antoine: So at the core the drone is really a flying computer. What drones have enabled and integrated more and more is first of all cameras, cameras and imaging technologies and even lasers. More and more drones are leveraging edge computing and GPU computing so that the drone itself can be more and more autonomous and smarter and smarter without having to leverage the cloud to send data and receive data, and really be more reactive. Drones have also impact, as you mentioned, some of the technologies in web and data platforms, and at the end, a drone is just a carrier of a sensor, so far, if we exclude the logistics, which really hasn't happened yet. And this sea of data is really, I mean, really enormous. I mean, imagine a drone taking, you know, five gigabytes of video file. I mean, that happens every day, many, many times a day, and that's a lot of data. Imaging data is heavy data.

And some of it the mapping, some of the satellites, some of the imaging analytics companies have really started to look and integrate a drone into their business model. So if you take, if you think of geospatial or you think of GIS, you think of CAD design, you think of 3D, drones are in there in a way or another.

Maybe it's an API integration. Maybe it's a documentation of a business model. So I would say, you know, those are the most immediate type of technologies and capabilities adjacent to drone technology.

Matthew: Right. And can we talk a little bit more about the edge versus cloud equation, because that's one, I think, which is, you know, extremely relevant to a lot of platform companies and applications, is, you know, what needs to happen on the edge, what can happen in the cloud.

Antoine: Yeah. So maybe I can give you an example of why the edge is applicable. So let's say you have a cornfield or an agricultural, you know, crop to survey. What you really want to know is, is the crop healthy, is it going to give you a good harvest. So more and more drones are used to fly above the field and take images which are complex multispectral images.

Then the drone comes back. The images are analyzed through a computer. And then the farmer or the crop agronomist will look at the image and will walk to the area and say yep, I need to add some nitrogen to it. And everything is great, but, you know, once you like something and once you start to adopt it, you want to make it more effective.

So really edge computing can handle this massive amount of data on the spot, in real time, and if it sees an area of the crop that's deficient, it can take another type of image. It can lower its altitude to be able to take a video of it, or it can circle around it instead of just passing by, you know, quickly. So by adding the edge computing that can handle the large amount of data that really the cloud cannot, and 4G cannot, and in a lot of parts of the earth, the 4G is not available, then you actually improve the smartness of the drone to make decisions based on data that will be analyzed on the spot.

Matthew: And how is that developing the kind of relationship between government and the pace and nature of regulation and the commercial companies working in the space?

Antoine: So, I mean, you know, you have, let's say you have the Federal Aviation Agency that controls the air space that really the goal is to, you know, to be safe, and be safe is really to do nothing. But there's so many jobs to be created, and the value of that new value creation is so enormous, and in addition you have competition, then, you know, they have had no option but to start opening the skies to drones more and more. And that's really what has happened. And that's why it's kind of a tug of war between, you know, asking the government to do something and forcing them to do something. And then you have lobbyists and stuff. That's one. NASA actually has been really a key participant into saying, look, we will work into mixing drones with regular aviation and really have highways of the sky, and this is what it's going to look like, and this is how it's going to work out. And creating a traffic management not just for aircraft, but also to integrate drones and also aerial taxis.

So really it's a kind of the aviation, government, it's private, it's some nonprofits and lobbyist group, and it's also some kind of neutral parties like NASA who said, hey look, you know, we want to enable, we want to help.

Matthew: And I guess the transformation then comes, as we look ahead a little bit, you know, as the commercial applications for platform companies, like we talked about last mile delivery, you mentioned aerial taxis. What do you see as maybe some of the largest economic opportunities that are going to really transform this space? And the second part of that question is who's well positioned to take advantage of that? Is a company like Uber, Didi, GrabTaxi already has a platform, an audience, a brand, you know, access to capital, are they well positioned to just add this as another…?

Antoine: I mean, if you're talking about transportation of people in aerial taxis, the drone companies are not really like looking in that sector yet just because they are just too busy solving problems of remote sensing and app development, etc. From what I'm seeing it's either completely new companies who have like a very ingenious design for a new aerial aircraft that can have the smarts and carry people, or it's, you know, large companies like Uber who are really not about, you know, share drivers, but really are about transportation. I mean, you know, Ford actually used to, or BMW, I believe, BMW used to be in the aerial business quite a bit. Now they're only cars. But I could see them having a stake in this transportation of people in the personal transportation space.

The big platform companies like the Google, or even like an SAP, eventually it's all about the data. And you know, you get the data, and even if you move, you know, a pack of butter, there's a lot of data to, you know, to the logistics, to the work order, to everything. And those companies are definitely have something to add. And I believe we will see starting maybe even this year, but '19 and '20 to see more and more acquisitions of startup companies that started in drones that will be bought out by larger companies.

Google has a project wing which is really about UAVs. Facebook had one that was killed recently about providing Internet at a lower

altitude than, you know, than satellites and aircraft by using a drone that would float for days at a time.

But I do think as a whole, Matthew, we're still looking at a new technology. There's many unknowns. But we know it's going to be, you know, much, much bigger than what we are seeing now. And there's going to be some movers and shakers. There's going to be even large companies like Google disrupted, you know, if they ever get serious about the drone sector. There's really a place for a lot of players, whether it's the GIS player or a social media player, to really have a little piece of the cake with respect to drone.

But there won't only be drone related companies. There'll be content companies, or there'll be, you know, logistic companies. But they'll have kind of a drone strategy, if you want.

Matthew: Yeah, yeah. I mean, it's such a fascinating space, both in its direct applications, but also some of the lessons and learnings around trust, technology, regulation, so thank you for taking the time. It's always great to chat to you and we've enjoyed it very much. Thank you.

Antoine: Oh, my pleasure. Always a pleasure talking to you, Matthew, and as you know, I really love that sector, and I could go on for hours. If anyone wanted to further the conversation, I'm available any time, and based in San Francisco, developing this new practice around autonomous systems.

Matthew: Right. Well, your enthusiasm and knowledge came across, so thank you for that. I enjoyed talking to you.

We've run out of time, but we hope you've enjoyed today's conversation, and hoping you'll tune in next time for the next episode of *On the Platform.*

[End of recording.]