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The Digital Revolution Has Only Just Begun

Speaker 1:

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Michael Bruno: Hello, and welcome to Aviation Week's Check 6 with Accenture. I'm Michael Bruno, senior business editor at Aviation Week.

History will remember COVID-19 for turning the aerospace and defense world on its head. Much has been written about the effect on airlines, maintenance and repair shops, and aircraft makers. But behind the scenes, there is a revolution going on that is remaking the whole aerospace ecosystem. It is a digital revolution and while digitalization pre-dated the pandemic, COVID-19 became a trigger for a dramatically accelerated transformation for how to do business in the aerospace sector.

The Accenture Tech Vision 2021 report dives into this makeover and here to discuss the latest findings are John Schmidt, Accenture's global A&D lead, and Chris Tridico, managing director. John, Chris, welcome.

John Schmidt: Thank you, Michael.

Chris Tridico: Hi Michael. Good to see you once again.

Michael Bruno: Great to have you here. Thank you. So John, way back at the start of the pandemic, when I was asking people about how this might change aerospace, you were the first person to boldly predict to me that this is probably going to speed up the digitalization of the industry.

Accenture does the Tech Vision report every year and to be honest with you, it often focuses on trends that are coming. But this year's report felt just really different to me because of how much of the digital change that occurred. Can you take a step back for a moment and talk to me about the rise of digital transformation during the recent crisis? I mean, were you surprised by just how much change happened, and how important digital became?

John Schmidt: Michael, it is true that the pandemic acted as a catalyst for many companies around their digital agendas and no, I'm not surprised. As I told you, when this was starting, I could see it happening almost immediately when COVID was impacting companies. What we saw was increased attention on move to Cloud which is the foundation for so much of the value to be gained from digital transformation. And then a range of other digital technologies. AI and ML, AR and VR. Digital twin and thread. Data analytics. Even in upgrade to platforms for supply chain and manufacturing.

In the commercial segment, those companies who have used 737 and COVID to invest in digital are poised to reap outsized rewards as the rates start coming back.

Michael Bruno: So this year's Tech Vision report, Chris, gives us five big takeaways about the digital overhaul happening in aerospace. Can you briefly name those five trends that Accenture found in its survey of business leaders?

Chris Tridico: Yeah, Michael, and I do agree with you. These trends are more relevant than ever to the aerospace and defense industry. The first one is stacking, that technology stacked strategically. There's the mirrored world. There's the democratization of technology within your own environment, as well as multi-party systems and spending a little more time around the we and not just the me.

Michael Bruno: So, I'm familiar with some of these points, but there are a couple here that are unique terms to me. Can you explain them a little bit more? What does it mean to stack strategically? In, in a way it sounds like a whole new way of looking at your business.

Chris Tridico: Yeah, thanks for that question, Michael. That is an important point and you'll recall earlier John listed out a wide range of the technologies that we're starting to apply in the aerospace and defense industry. And what stacked strategically means is actually looking at those technologies and the technology strategy of an organization, not as a separate tech stack, but as something that's integrated with the overall strategy of the business, and actually enabling the strategy of the business.

So, when we look at individual types of technologies and how we want to apply them, instead of looking at them as, as a piece, we look at them in aggregate, and more importantly, we align those to the business goals and strategic intent of the organization to make sure that we're supporting and enabling that strategic intent.

Michael Bruno: And what about mirrored. Can you explain that one a little bit more too?

Chris Tridico: Absolutely. This is something that'll be familiar to a lot of the folks that are in the aerospace and defense industry. And this really refers to the technologies around model-based systems engineering. Creating a mirror for what we're doing in the physical world in the virtual world and being able to leverage that to both design and construct our offerings.

But more importantly than that and more broadly than that, it is also applies to the, the tools that we use to mirror the manufacturing environment and the support environment. So we can do things like predicted maintenance, so that we can simulate what the shop floor's going to be able to look like. And in fact, we've leveraged that a lot during the pandemic to help us navigate through the changes that we need to make virtually before we try to implement those in the physical world.

Michael Bruno: So, John, I have to say, this is a kind of a bit of mind-blowing stuff. I mean we work with people who build airplanes and spacecraft and those are really complex and important. But for generations, their whole world was simply dominated by the laws of physics, right? All you had to do was come up with the fastest fighter or get a spacecraft into orbit. And now, we're telling them that it's not just about the thing they build or how they sell it, we're also talking to them about how their company works digitally. Is that a fair summary?

John Schmidt: Well, Michael, the laws of physics are still going to rule for generations more, and the role of technology will also continue to increase. For years we've seen the increase and importance in the role of software in defining the capabilities of aerospace products and services. And now what we're seeing is the importance of digital to mirror the physical world as Chris was just sharing.

This has implications for how we design, manufacture, operate and service aerospace products, and I believe it will also be a key to helping us achieve sustainability goals for the industry. Of course, more about that on a future podcast when our current research into sustainability is complete.

Michael Bruno: All right. Well, there's a lot more to unpack here and I want to dive into a couple of these areas where technology is really hitting home, both on the factory floor and literally in people's homes. We're going to get into that next, but first let's hear a word from our sponsor.

Speaker 1:

With more than 30 years of experience in the aerospace and defense industry, Accenture helps companies harness digital technologies to improve operational performance, enable competitive differentiation, and drive profitable growth. To learn more, visit accenture.com/aero.

Michael Bruno: We're back with John Schmidt and Chris Tridico of Accenture, talking about the latest findings from the Tech Vision 2021 report.

Gentlemen, there are two areas I want to drill down into from the Accenture findings. One is on the business operation side with the growth of digital twinning, going beyond the factory. And the other is how this all affects the workforce. So, Chris, digital twins have been growing within the aerospace industry for years, but the Tech Vision report talks about extending that idea through much more than just the engineering office. What did executives tell you and, you know, what have you been finding in your survey?

Chris Tridico: Well, we can go through some of the survey results and I think that they are telling. For example, 85% of the executives we surveyed in aerospace and defense said that digital twins were essential. And when they say that, they're not just referring to digital twins of the product or in the engineering phase, but digital twins of the shop floor and of the products when they're out in the field.

We also see that 93% of them want a mission control type of environment where they do have control over that entire life cycle of product and where they view it, not just as a tactical point in time, but as an overall solution in a full life cycle for the products.

And 68% of them see an increase in focus on digital twin beyond where it is today. In working with executives and working with the CIOs and CTOs that we talk to on a regular basis, every one of them is talking about digital twin these days and figuring out how to implement it most effectively into the aerospace and defense environment.

Michael Bruno: I'm struck by that last statistic by the way. 68% see the digital twinning just kind of going beyond the engineering and the factory. Is it literally sort of a digital twin of how maybe your business works or what is it? Is it a digital twin of digital offerings? How do they look at extending that?

Chris Tridico: Well, it's both. If you look at our products these days, Michael. They extend beyond just the physical products. As John mentioned earlier, there's a huge software component to all these products, and we're expanding the environment that those products are being manufactured in to include an integrated view of the hardware and the electronics and the software.

And we have to keep in mind that these things don't just get created and get pushed out the shop floor. A lot of these systems remain in play for years and even decades, and by having a digital twin for the full life cycle of the product, we can better predict how they're going to behave out in the field and understand how to better support them in the field.

Michael Bruno: So, I've got to say that this mirrored world might seem unnecessary in the old nine to five office, when everybody came into the same site. But in this current era of working from home where you're bringing your own device to do your work, this seems not just plausible, but frankly quite critical.

We talked about stacking strategically before, and that means thinking about tech differently. That seems to connect directly with this idea of the democratization of technology. So, John, Chris, you know, how do individuals build their own dashboards and, and what are executives telling you about what they want along these lines?

Chris Tridico: Michael, that's a great question. And you actually picked up on a really important point which is that many of the points that we brought up in here are around bring your own environment and the democratization of technology, is really enabled by that overall strategic technology stack. The recognition that the people, the

workforce side of this is very important to aerospace and defense, and that any strategic stacking that we're doing with regards to technology needs to account for the workforce as well.

So, these other trends that we pointed out, these are very critical trends, how this impacts the workforce and some of the great things that you can do because you have this mirrored world in play. For example, we're seeing a lot of environments where individuals are being enabled to actually create their own code and self-service. If they need a report, or if they need to go a little bit deeper and actually create an application to do things. If your technology stack is able to support that effectively, you can have your entire workforce deliver capabilities that you need to do to do their work better, as opposed to having a monolithic structure on the side that develops those things independently to the business.

Michael Bruno: All right John. I'm going to wrap things up with you, and I always like to bring it back to workforce issues because as you've mentioned many times, it's all about people in the end. The Tech Vision report indicates that company leaders are thinking hard about how their business operations have to change and become more digital. Maybe no surprise there. But employees face as much change and they face as much responsibility to adapt to this brave new world. This seems to have some pretty profound effects on what it means to be an aerospace worker. It's more than just how well you can run a slide ruler or bend some metal or, or even live near a factory.

John Schmidt: Well, Michael, you mentioned earlier a whole new way of looking at your business and that is true and it has big implications for the workforce. 89% of the executives we surveyed say employees face the largest and fastest pace of change in history. And this means companies have to consider the people element in all these digital efforts.

I was speaking with a digital officer last week, who was really clear with their comment, and this person said that technology is not the biggest issue. Helping people get the most out of the technology is. And I think that they're spot-on. The implications run from recruitment to talent development into how we introduce changes to the businesses themselves. The best digital tools in the world in the hands of someone who's not trained to use them, and internally ready to use them, would be worthless. And that's probably why when we do our surveys, we get 91% of the executives saying they have to train their staff to be technically competent so that they're able to be in a position to receive the benefit of all this stuff we've been talking about. You know, digital is only going to be as powerful as the people who wield it.

Michael Bruno: I'm just going to hammer one last thing you said at the top of your answer, but I'm just struck that 89% of executives say employees face the largest and fastest change in history. So, it kind of sounds like if you didn't think things were changing, then buckle up because they're going to change even more, and maybe even quicker.

Well, that's a wrap for this edition of Check 6 with Accenture. John, Chris, thank you very much for joining me today.

John Schmidt: Thank you Michael.

Chris Tridico: Thank you Michael. Always good to see you.

Michael Bruno: Be sure to check out the new Accenture Tech Vision 2021 report and join us at Aviation Week again soon for another edition of Check 8, which is available for download on iTunes, Google Play, Spotify and Stitcher. Thank you for listening and have a great rest of your day.