



THE FEDERAL CATALYST

Personalizing Our Physical World (episode 3)

Podcast Transcript

Announcer: Welcome to the Federal Catalyst with Accenture Federal Services, the podcast series addressing critical management and technology issues impacting federal leaders. Each episode goes behind the scenes with our experts and others to discuss the latest research, innovations and breakthroughs shaping how federal agencies achieve their mission.

Chris Copeland: I am Chris Copeland, chief technology officer for Accenture Federal services. We are going to dig deeper into the Accenture federal technology vision today. This is the annual research that I lead with Kyle Michael examining how the biggest technology trends are impacting the federal government. Trend 2, Programmable World, is one of the four trends in this year's report in today's focus. In this report, we argue that what makes the web so consequential and unique is the integration of interactivity, intelligence, and personalization into the user experience. And increasingly, these qualities are being infused into our physical world, creating smart systems, smart cities, smart environments, and so on. Given the size of its physical footprints, this trend has vast potential for federal agencies. For example, the Defense Department JAD C2 Strategy is working to create an interconnected battlefield to empower the warfighter. What else can federal agencies do in the programmable world? To

answer that question, we have two authors of the report with us today. Jessica Bannasch is a senior technology architect with Accenture Federal Services focused on intelligent automation. For the federal government, Rick Driggers is our OT security lead and a former CIA official. Jessica, Rick, great to have you both here.

Jessica Bannasch: Hi there. Looking forward to the conversation today about the programmable world trend.

Rick Driggers: Thanks, Chris. It's great to be here and I look forward to the discussion.

Chris Copeland: So let's start with the foundation. The programmable world is being built with the collection of technologies. What are the most critical ones?

Rick Driggers: I think it's less about what the technologies actually do and what they enable. You know, those kind of critical functions. So I would say, you know, economically, you know, technologies that improve our global supply chain, the efficiencies, the security and the sustainment of that global supply. Matching too, including consumer products, critical technologies as well as food supply chains. I think that's going to be critical going forward. Education, access to education, and advanced



educational resources regardless of where you live, what your ZIP code is, the region of the world is going to be key in providing personal opportunity, personal security as well as prosperity. And on the defense front, you know, I think about a digitally connected battlefield enabling unprecedented situational awareness for every Airman, Sailor, Soldier, Marine that's operating in that battle space. And I think that's going to be amazing and it's going to drive down decision timelines and the things of that nature. But I do think one thing that needs to be mitigated is the autonomy of commanders, particularly those commanders at the lower-level echelons, because that's where the combat is actually happening. So we have to build in ways to maintain human trust that's going to be critical across all of these digital ecosystems.

Jessica Bannasch: The most critical piece to me is not so much the technologies themselves, it's more about successful implementation and adoption of an end-to-end process leveraging MLR, mixing, AI, et cetera. So, you know, if users and businesses do not understand how these technologies work and make their everyday lives easier, it won't succeed. So, with proper education, users will evolve and adapt. But, really, we're used to manual interaction, and the auto magic nature of this concept will take some time to accept. On the other side of the coin, if the implementation of the technologies is botched, the end user has a bad experience, and we lose their trust in the automation and intelligence.

Chris Copeland: Rick, Jessica, that's great. So last year we talked about digital twins, and in this year's report we've really focused in on them more. How can federal agencies take advantage of digital twin technology?

Jessica Bannasch: I'm just going to give some examples here. I think a digital twin for space and warehousing optimization is going to be big

since we've delivered warehousing, inventory procurement and facilities management solutions on multiple technologies for different federal organizations. As an example of this, the digital twin could help to optimize operations, reduce wastes, perform automated current inventory checks, location recommendations for incoming shipments, and facility maintenance recommendations just by visualizing floor operations through the digital twin. All of these things we've tried to automate with integrations, RFID, custom business logic, processing of manually entered data, and so many other solutions. But it's now becoming a reality that we can truly do this without human intervention through digital twins. With this being said, the successful implementation again is key. The digital twin is only as good as the information built on it. If the twin is out of sync and the customer doesn't understand their full operations, the concept doesn't work.

Rick Driggers: Yeah, I think digital twins offer a lot of opportunity. You know, we've seen in some areas, you know, military installations and government facility planners and engineers, you know, they can design more efficient and effective facility operations. They can build better understanding of the security vulnerabilities and they can conduct resilience planning. I think they can also use models to simulate the effects of significant storm surge or sea level rise on infrastructure that's critical to operations and they can build evacuations scenarios that optimize preparation, response, recovery, and planning. I also think, you know, if I'm talking about cyber digital twins, you can really model the organization's cyber security posture really across the enterprise. I also think that it can be used to model malicious activity and attack pathways and really increase the readiness and the response for cyber security and network defenders. You know, the technology also can be used to augment training and exercises to really improve



readiness or optimize change management and asset management to enhance also cyber security. So it's really impressive technology at this particular time. It's a bit cost prohibitive and I think you know in the next two to four years we're going to see more digital twin technologies, particularly across the critical infrastructure community where I think that there's a lot of really promising applications.

Chris Copeland: Yeah, I couldn't agree more. I think digital twin technology is really going to find its home and in a lot of aspects of what we do across the federal government. So let's talk about another use case, one where we see immediate applicability is in smart or connected workers. What's the long-term potential here?

Jessica Bannasch: Connected workers is near and dear to our platforms use cases. From maintenance request to incidents and case creation, we can leverage our and Marta. Workflow the world around us. So what do I mean by this? With AR devices I can quickly say I'm having an issue with my laptop for example, and the AR technology then asked you to take a picture of the laptop and the laptop serial number. At this point, instead of submitting a ticket, we can use MR leveraging a HoloLens headset, for example, to search through a knowledge base. The mirror is able to walk me through the process of fixing my laptop on my own by visually overlaying data with a step-by-step guide and setting indicators on what the user should be focused on during the troubleshooting process. There's definitely a long list of use cases for this that exist today. So what is the long-term potential? It's huge.

Rick Driggers: Yeah, I think the potential, you know, is a workforce that is increasingly enabled to accomplish more and more complex tasks and these kind of highly specialized work environments that are kind of popping up. You know, we've got connected platforms can enable

increased productivity, quality, standardization because the information is going to be available to the worker where and when they need it, kind of as they move around, you know, their specialized work environment to accomplish tasks. That said, I do think we need to start building the knowledge and the expertise now. For the next generation of workers, you know, we're behind the power curve and a lot of these technology domains with regards to the workforce. And so I think we need to really start focusing in, now we see a huge gap, particularly in the cybersecurity workforce. So I think focusing on building the future workforce that can really leverage these advancements in technology, particularly in this programmable world, is going to be critical.

Chris Copeland: Yeah, I agree. I think we always talk a lot about no matter how great the technology itself is, if we can't enable the workforce to take advantage of it, it really doesn't ever achieve its full value. So one interesting thing I found was the role human-centered design plays in creating a programmable world. This is driven by the need to create user interfaces that exist as part of the environment but are also stigma free for the user. Are organizations putting enough thought into how users will interface with these systems?

Rick Driggers: No, I don't think they are and, quite frankly, if you know, go back 10 years or 15 years, I don't think they have. And I think people want to interact, particularly when we build a programmable world, right? People are going to want to interact with each other and digital and physical objects, you know, in much the same way they do now. But, of course, they want all the added benefits. On the efficiencies and the personal connections, I think it's critical to focus on adoption and accessibility now, and I know that it's not happening at the scale we need. So we do need to focus on that. I think



adoption and access are just as important as the technology itself.

Jessica Bannasch: How do we build this thing so that it's intuitive, it's useful to the end user, and it's reliable? If we don't get this right, there's generally frustration from the user, and at this point they'll look for alternatives and their usability numbers then plummet. So how do you do that? Ask them what they want and what will make their day a little bit easier. Human-centered design really focuses on that.

Chris Copeland: So one of these key technologies is 5G that I think most people are familiar with. How important is 5G to delivering the level of interactivity that users expect?

Rick Driggers: Yeah, I think 5G is critical. You know, it's critical and it's incredibly promising due to the extremely low latency that it enables, you know, and we're building and have been building towards this programmable world for years with the proliferation of 5G infrastructure globally as well as Internet of Things and industrial Internet of Things and all these edge devices. This, you know, the rollout of 5G across the globe has really fueled the adoption of low- power, low- latency connected devices that are in our homes and businesses. Like, I think, you know, as we integrate more complex technologies into this programmable world, you know, we've got built-in, intuitive, accessible interfaces and literally leverage, you know, new kinds of augmented reality, whether it's glasses or smart materials or other physically manipulated technology that can be used to engage the programmable world. I do think one of the concerns with 5G and particularly as it relates to latency is you know, there's a focus on driving down latency, but consistent latency or latency consistency is incredibly important to our critical infrastructure. Particularly infrastructure like power generation or hydroelectric plants, as well as critical manufacturing facilities.

Jessica Bannasch: I think this is insanely important. This is the key to the connection of IoT- based devices. Faster speeds, reliability, and the ability to gather and share information in real time will create more opportunities for people and businesses and enhance our day-to-day experiences.

Chris Copeland: One way to define the programmable world is a wide field of connected sensors. Hey Rick, what could possibly be wrong here?

Rick Driggers: Yeah, well, hopefully we won't have robots taking over the world. And, you know, Skynet responsible for all of that. You know, we really need to anticipate the future security challenges in this space. We need to continuously evolve security solutions to ensure the integrity, reliability, and security of all our connected technologies. And we need to pay particular attention to the safety and privacy of our people as we're doing that. We cannot design and build critical infrastructure systems going forward in the same way that we did in the past. We have to engineer security into the design planning at the very beginning instead of trying to bolt it on afterwards. You know, security's been a concern with the beginning of the 5G rollout, you know, since that all started, and it still remains a significant concern. But I think with the exponential increases in new devices and connections that 5G enables, you know it's going to greatly expand the attack surface and add far greater complexities and scale to the security challenges we face today. So we really have to pay particular attention and put particular focus and resources against the security challenges that we are going to anticipate.

Chris Copeland: I think we know that security and data protection are paramount here, and Rick briefly touched on privacy. Let's double click into that a bit. What are the key privacy



issues that we need to account for?

Rick Driggers: Yeah, I think privacy is always going to be a concern, especially when it comes to the government. And you see the mass amount of citizens, particularly in our country, leveraging social media and putting all kinds of, you know, data and some of it personally identifiable data, you know, out there on their social media feeds. But when the government comes into play and they're collecting that data, it's different. And so there's got to be transparencies that are built into these technologies. There's got to be transparency with privacy policies. I think that's going to be critical, but I also think that we have to enable the citizen or the person to have some level of control of their privacy in terms of the technologies that they're interacting with.

Chris Copeland: Rick and Jessica, thank you. This was an incredible discussion. I learned so much. Thank you both. If you enjoyed today's program, you wouldn't want to miss the next episode of the Federal Catalyst as we go deep on Trend 3, the unreal from this year's technology vision. And if you haven't explored our Accenture Federal Technology Vision yet, I encourage you to do so, as it's tailored for the unique needs of federal leaders like yourself. You can find it online at www.accenturefederal.com. I am Chris Copeland, and it was my pleasure to host today's episode. Connect with me on LinkedIn to share your feedback.

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