



For Cloud Professionals, part of the On Cloud Podcast

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Title: Cloud is here to stay—and that's a very, very good thing

Description: The pandemic has forced many companies to move to cloud just to survive. However, now that they've seen its benefits, most are staying put, and that's a very, very good thing. In this episode, David Linthicum and guests, industry thought leader and author Dr. Shawn DuBravac and Deloitte's Duncan Stewart, discuss why that is. Bottom line: cloud gives companies the technology and agility to offer better products and services, to create deeply customized customer experiences, and to gain a competitive edge. The trio also discusses cloud trends for the next decade and how companies are already augmenting their cloud ecosystems with enabling technologies, such as the intelligent edge and 5G.

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Operator:

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David Linthicum:

Welcome back to the On Cloud podcast, your one place to find out how to make cloud computing work for your enterprise. This is an objective discussion with industry thought leaders who provide their own unique perspective around the pragmatic use of cloud-based technology. Today on the show we have Duncan Stewart and Shawn DuBravac. Dr. Shawn DuBravac is the author of the *New York Times* bestselling *Digital Destiny: How the New Age of Data will Transform the Way we Work, Live, and Communicate*. Welcome, Shawn. How're you doing?

Shawn DuBravac:

Wonderful. It's great to be here with you.

David Linthicum:

And joining us today is also Duncan, and he is the director of TMT research for Deloitte Canada, member of Deloitte's Center of Technology, Media, and Telecommunications; TMT Center; and a globally recognized expert on predicting the future of customer and enterprise technology, media, and entertainment in telecommunications. He's been the co-author of Deloitte Global Research annual predictions report on trends in TMT since 2008. Man, you've been doing this a long time. So, Duncan, how are you doing?

Duncan Stewart:

Getting older as you introduce me, in fact.

David Linthicum:

So, let's go ahead and, Shawn, let's start with you. What's in the day – what's the day in the life of Dr. Shawn, and what was the genesis of this book that you wrote? Suddenly it's taken the world by storm.

Shawn DuBravac:

So, I spent a number of years as the chief economist for the Consumer Technology Association, best known for the owners and producers of CS. A few years ago, I left and started a boutique research firm where I focus on the implications of the emerging technologies and ultimately how they're impacting legacy businesses, so that's where I spend most of my time today.

David Linthicum:

So, Duncan, what do you typically do with your time? You writing books?

Duncan Stewart:

No. I haven't got the attention span to write a book. I probably write 30, 40, 50 shorter articles per year for Deloitte, all on tech, media, and telecom.

David Linthicum:

Yeah, I've written 13 books, but none of them ever hit the *New York Times* bestseller list, so I got some envy going on here. So, let's talk about some of these core topics; talk about COVID adoption trends, and we'll talk about cloud-adjacent technologies and things like that. Shawn, I'm going to go to you first. Ultimately, we've been through the wringer in the last year. However, there's been some bright side to it: the ability to adopt technology at a quicker pace, the ability to accept risk into developing creative and innovative solutions. So, what has COVID basically forced us to do? How has it helped companies overcome adoption concerns? What have you seen?

Shawn DuBravac:

I mean, obviously, the pandemic forced many companies to adopt a number of technologies that they had either tried to avoid, or just weren't in a hurry to adopt, and it accelerated that. We talk a lot about the pandemic being an accelerating event, and certainly that was the case for companies both small and large. And I think we're really at the next big step in that. We've adopted many of these technologies; now we need to understand how it changes our culture as an organization, how we manage our workforce through these changes, and manage a workforce that's now using these technologies. So, there's still a lot of big open questions ahead of us.

David Linthicum:

So, Duncan, kind of the same concept. You work with lots of different companies moving forward and doing lots of research reports and kind of look at the behavior of the market in general. What has surprised you about last year?

Duncan Stewart:

So, the great thing in my job, is not only do I meet a couple hundred cool tech and telecom and media companies per year, I see usually the same companies year after year after year. So, flash back to 2020, 2019, and there were a bunch of my companies who were pretty cautious about the cloud. And they've been forced into it, and they were worried. They were worried ahead of time. They were going slow. They were saying, you know, oh, I'm worried about security and multi-cloud and how does this all work and I'm not sure. And then I'm talking to them this year and they're like, who's afraid of the big bad cloud? This just isn't a thing. Come on in, the cloud is fine. They found that a lot of their fears were not justified, so not only did they move to the cloud in the pandemic, they're going to stay in the cloud after.

David Linthicum:

Yeah, I'm seeing the same thing, and a good friend of mine is a CIO of a mid-size company and didn't move stuff into the cloud, maybe a few little ventures into software-as-a-service, things like that, and suddenly the pandemic hit, and he couldn't get people into the data center because of the quarantine to replace power supplies that were in an outage state and the storage systems that were going down, even though he had the replacement systems there on the floor of the data center in shrink wrap ready to go.

Suddenly cloud became a bit of a priority in his world after that, and I told him that a lot of those things that people really didn't understand what the risk was, that was driven home by the pandemic were mediated by the cloud, and that's why people started moving those directions. So, Shawn, back to you. Here we are 2021, let's say the pandemic's going to end at a particular time, hopefully sooner rather than later. What happens now? Are we going to basically go back to the same old inefficient ways? Are we going to revert back to our IT thinking before the pandemic hit, or is this going to have a permanent effect?

Shawn DuBravac:

No, I think this definitely has a permanent effect, especially as you think about those companies that had hesitated in adopting some of these technologies, especially moving some of their services to the cloud. If you think of your small local restaurant that was only focused on its physical location and didn't have any connection to the cloud, they're not going to go back and unwind that. It was enough work for them to get to where they are today, and so I think you're going to continue to see them build upon the technologies that they've put in place and the technologies that they've employed in the last year. Like I said, though, I think there's still a lot of questions around what are the implications for these new technologies and how will it impact the services we offer, how will it impact our competitors? So, those are the things I think companies will need to start focusing on.

David Linthicum:

So, Duncan, do you think we're going into a growth period, a contraction period, or going to be pretty much the same as we move post-pandemic?

Duncan Stewart:

Well, weirdly it could even accelerate. So, the way – I wrote the prediction in this year's Deloitte predictions report on cloud, and so I've been tracking in real-time the hyperscalers as well as the chip companies that sell into the data center, and they've all been reporting in the last week or two. By and large, their go-forward guidance suggests that the trend is accelerating. In my own conversations with clients around the world, I'm hearing the same thing. A lot of companies had a really tough 2020, and so they cut their IT budgets. As things normalize and as things bounce back, think about – I mean, I'm just picking on somebody here. Think about the airline industry. They didn't spend much last year. They're probably not spending a lot right now, but as things normalize, they've got a couple of years of catch-up spending to do, so I'm actually expecting cloud to possibly accelerate, at the very least stay at around that 30, 31, 32 percent growth rate.

David Linthicum:

So, we have traditional companies out there, and this question's going to be for you, Shawn. I wrote an article a couple years ago called "The Brandpocalypse," and the fact that a lot of traditional businesses, people that are name brands, that are household brands and been household brands for 150, sometimes 200 years ultimately are going to be disrupted, and they're going to find that these disruptors are leveraging technology as a force multiplier. They're weaponizing the digital assets within these organizations to be more creative or provide a better customer experience, provide a better way to deliver products and services moving forward. So, do you see in essence legacy companies speeding up their digital transformation to combat these disruptors or even becoming disruptors unto themselves, or you think they're just kind of whistling past the graveyard?

Shawn DuBravac:

No, I think there's a lot there that you hit on. I think one is we need to recognize when we implement these digital tools, and we implement cloud or really any of these technologies that we've talked about, it also changes the fundamental service that we're delivering. It doesn't change just how we deliver the service, but it ultimately changes what we're delivering, it changes the behavior of our customers, and so there's pretty massive second-order effects that companies need to internalize, and I think that's where a lot of missteps happen. They move into the cloud or they move some of their services into some of these new technologies, but they don't fundamentally recognize that that means they need to be delivering an entirely different product to a customer that's changing.

And then a second piece related to your question is we've focused so much on our own internal digital transformation that we really haven't looked at the digital transformation that our customers are going under and the trajectory that they're on, and so we also need to look at how are our customers changing as a result of their digital transformation and then ultimately what are the implications for us.

David Linthicum:

So, Duncan, kind of same question. Do you think these global 2000 companies that are more traditional businesses, very successful, almost \$1 trillion in revenue, those sorts of things, do you think they're going to suffer after the pandemic, after a lot of these organizations learn how to weaponize technology?

Duncan Stewart:

They would except for a weird thing that's going on, and this came out of a call I had yesterday with a client in Belgium. Why Belgium I have no idea, just they happen to be in Belgium. Their observation is that they were still actually a little bit cautious about the cloud, even through the pandemic, but they were being dragged kicking and screaming, willy-nilly into the 21st century and the cloud by their vendors. So, they've got ERP, they've got database. As those providers moved to the cloud and dragged their customers along with them, I think that there are very few companies that are just standing still and not, not doing this. So, I think that sort of innovator versus legacy split is narrower than it would otherwise be, because as the vendors move to the cloud, a lot of other companies are following them whether they want to or not.

Shawn DuBravac:

I think Duncan makes a great point there that it isn't just the customers that are changing. It's also the vendors changing. So, companies are getting this from both ends, if you will. It's coming at them from their supply chain, but it's also coming at them downstream as well.

David Linthicum:

Yeah, I think it's something that we're going to have to mediate moving forward, because there is a certain amount of investment I think needs to be made that a lot of these traditional companies aren't making. So, we're leveraging technology as a way to innovate in our business and we have machine learning, we have AI-based technology, we have deep analytics technology, things like that. We even have technology that's so effective that people are talking about ethical issues around leveraging technology in a certain way to influence people, something that may be an unfair or unethical advantage moving forward. So, we have all these opportunities to leverage technology, which is relatively commoditized today via the cloud, in new ways that will drive growth, big enterprise, enhance the customer experience, things like that. Shawn, I'm going to go to you first. How are enterprises doing this and how should they be doing this right now?

Shawn DuBravac:

Well I think, again, as I noted earlier, they're looking primarily at their existing suite of products and services and how they can deliver those same products to their customers. I think moving forward they really need to think about what new products does this empower us to bring to the market. What are the new services that we need to be thinking about that now make sense? One of the things I notice with emerging technologies, and I think you could put cloud there as well, is that it ultimately fundamentally changes the return on investment, and it makes some things become viable that historically weren't viable, and so companies need to revisit some old business models in some cases and look at services that they haven't been delivering to customers that they might want to deliver to customers.

David Linthicum:

So, Duncan, a few years ago, I bought two things. I bought a truck and I bought a car, and ultimately from two different companies that had very different approaches in terms of how they're going to deliver the car and build the car, things moving forward. Truck, had to go into a dealership and agree on a price, configure the truck, order the truck, six months later the truck showed up, and by the way it was two months later than they said it was going to be, but got the truck.

Car, able to – had to order it online because that's the only way they took it. They were able to tell me throughout the entire production life cycle who was working on the car, what the car was doing now, they were putting in the HVAC system, putting in the battery, what train it was on, the weather that was going to be surrounding the trains as it moved from one side of the country to the other, and the exact delivery time, including scheduling delivery, the system by integrating directly with my calendaring system. Two different experiences basically to get the same thing. One was heavy on digital enablement and leveraging cloud and leveraging technology. The other one was not. In essence, very inaccurate and wasn't as good of a customer experience moving forward. To you, ultimately, how are people going to digitize it so they can be equal to providing expansive customer experiences that are really going to make a huge difference?

Duncan Stewart:

I'm seeing the same thing you are, which is that moving to these tools is the way you deliver a superior experience, both to enterprises and to consumers. I think you nailed it.

David Linthicum:

Yeah, and you have the typical frustrating thing when you call a bank and they always say type your account number in. You type it in on the phone, and then as soon as someone gets on the line, they say, "Can I have your account number?" There's always those sorts of things. There's little kinds of ways I think that businesses are learning to provide a better customer experience and also a product experience, able to deliver the same products and services at a discounted rate, then that is going to promote themselves in the business, and they'll be kind of a disrupter unto themselves. So, I will go to you, Shawn, and what are the cloud trends that we're coming on now that we're seeing in 2021 and ultimately, which ones are going to be significant and which ones are not going to be significant?

Shawn DuBravac:

When I look at consumer brands, I see them relying on the cloud much more heavily than they have in the past when they interact with their customers, and I see them using them as ways of delivering entirely new services, so I think that's one big trend that I pick up on. You see the television manufacturers, for example, recognizing that their connected displays are now platforms, and so they're using the cloud to enable a platform experience where they haven't historically done that. In the past, they were manufacturers of physical goods, and I think that's a trend that you're going to see more broadly adopted elsewhere. Once the product is connected, then it becomes a platform, and the manufacturer can use that platform for lots of different reasons, in lots of different ways. So, they can deliver new services, they can monetize those services in different ways, they can connect with their customer in very different ways, and I think that's a big trend to watch for.

David Linthicum:

So, Duncan, we're a year in advance. We get in a time machine, move forward one year into the future and we're looking back on 2021. What do you think, the cloud trends we're going to be talking about?

Duncan Stewart:

I think we're seeing a tipping point for two specific trends, and it's not even just going to be for next year. I think this is going to be the next decade. First of all, cloud – for a long time, we talked about cloud, and we kind of didn't talk about its context in terms of sustainability. I think a few years ago people were saying, "Oh, the cloud's using a whole lot of energy," and the reality, of course, is that doing almost anything on the cloud uses way less energy than doing it in real life or doing it on-prem. So, I think that a big trend over the next few years is going to be the cloud is green, and I think there's going to be a lot of conversation to discuss about sustainability, but also what can cloud and data centers do to become increasingly energy efficient?

Duncan Stewart:

The second big trend that I'm seeing is going to be about regulation. Now, we've had a lot of regulation on cloud around stuff like GDPR and sovereignty, but this is actually something I'm working on at Deloitte right now. I'm working on a report on this. We look to see the next five, six, seven, eight years be increasingly heavy around regulation of cloud, of cloud platforms, and lots of rules around what they're able to do and what they're not allowed to do, and also with cloud companies figuring out how to manage between different regulations and different countries all around the world as it's unlikely that we're going to see a global standard.

David Linthicum:

Yeah, Duncan, I think you're spot on with the greenness of cloud. That's something I've been an advocate for, for a long period of time. If you look at the fact that we're sharing infrastructure between many different entities in a multi-tenant environment, and if you go into a typical data center and you do a performance monitor check on each of the servers, you're going to find them at a whole 3 percent to 5 percent capacity in terms of utilization, but if you go into a cloud center, they're going to be close to 100 percent capacity on each of the physical servers, and therefore able to run fewer servers, they're able to do a lot more, and I think that's going to be something that's apparent in the future. I think it was a rather confusing thing moving forward, but to move into cloud means doing something that's going to be – that's going to reduce carbon footprints and use less power.

So, let's talk about the intelligent edge, and this is something that's been moving forward as we get into edge computing, the ability to kind of push some of the AI and ML capabilities down onto an edge-based system. And we built a prototype a couple years ago, a connected motorcycle system where there was a TPU running an AI-based system on a Raspberry Pi that sat on the motorcycle that was able to make decisions kind of based on the behavior that it was understanding that the motorcycle and the rider was doing moving forward.

And this was kind of cool because it was kind of a disconnected environment, so in other words, we didn't have to send everything back to the backend systems. We were actually doing something by putting the data, or in this case, the edge computing, which is the Raspberry Pi, close to the acquisition point, meaning the motorcycle and the rider. So, moving forward, this is rather confusing because I get reporters who call me up all the time and they said, you know, what about edge replacing the cloud? I'm not sure I see that. What about cloud working and playing with the edge? I do see that. So, Shawn, I'm going to go to you first. Does intelligent edge, which we just discussed, does that end up replacing the cloud as we know it?

Shawn DuBravac:

David, as you just mentioned, I think that they will coexist. I think they need to coexist, and I think if you think about what AI is ultimately doing, whether it's computer vision, machine learning, voice recognition, it's all about making prediction cheap and making it inexpensive, and so we're going to start to run those predictions in lots of spaces. There's going to be times where you're going to want that done on the edge, there'll be times where you'll want it to connect to information that's available on the cloud, and so you'll need to see those two things interact together. They'll coexist, and in fact, I think they have to coexist.

David Linthicum:

Yeah, I couldn't agree more, and Duncan, I'd love to get your weigh-in on this. Ultimately are they mutually exclusive or do they have to work and play well together?

Duncan Stewart:

Have to work and play well together. I think it would be useful to size them just now for a sec, David. Deloitte actually as part of our predictions, said that intelligent edge market this year would be about \$12 billion in 2021, and now that's up 100 percent from 2019, which is great, but still \$12 billion. That's not small, but it's not real big either, especially compared to the, if I can use the phrase traditional cloud market of ballpark \$0.5 trillion. So, it's a piece of the puzzle, but it's not even half the size, a quarter of the size. Although it's growing, I don't see it in any position to replace the cloud. I mean, it's absolutely useful when you're doing real time low latency stuff like trading financial instruments, video gaming, or driving a motorcycle real time decisions at speed. But there's 90 percent of computational tasks do not need the intelligent edge, and if you don't need to do it at the edge, you're probably, for the economies of scale, that you suggested earlier, you're probably going to keep doing it in the cloud.

David Linthicum:

So, Shawn, who wins the game of the intelligent edge?

Shawn DuBravac:

You know, I think that it's going to require a lot of pretty rich partnerships. I don't think that there's a single way to win the intelligent edge or a single company approach that's going to win it. Just as Duncan laid out, there's a lot of different use case scenarios where you're going to do things at the edge, and there's going to be times where you don't need to do it at the edge and you're doing it in a cloud-based way because it provides efficiencies. I think the same is true with the way companies are going to approach it.

David Linthicum:

So, moving forward, and Duncan, I'm going to go to you on this one, we have the cloud which has been kind of a game changer. It's a force multiplier. It allows small businesses and people to punch above their weights, leveraging computing systems that they typically couldn't afford. It was funny, kind of interesting to me. I was running around the country doing cloud talks, and I was actually out in Appalachia doing some cloud talks, and they looked at me like I was crazy, and the reality is they didn't have connectivity, so there's nothing that could be done. The cloud was something they couldn't leverage. Now we have 5G. We have the ability to get the bandwidth, and the ability to get the security systems pervasive all over the country and bring bandwidth to areas that were typically bandwidth deserts moving forward. Ultimately, how does 5G and the cloud kind of work for each other, and moving into these different areas, and how does the suburbs and the cities and the rural areas kind of benefit from this?

Duncan Stewart:

I mean, I actually think it's – you're sort of talking at it more from a consumer perspective. I find the enterprise applications, so I mean, I'm talking to telcos, and they're selling 5G to consumers. Consumers love it, but they won't pay anything extra for it. It's really hard for a telco to monetize 5G to the consumer, but to the enterprise, they love that stuff. You know, you can give me hundreds of megabits, you can give me better coverage, you can give me device densities that – because right now on 4G, you cannot talk to every single machine inside an automobile plant. It simply doesn't support that density of devices. 5G does, so where it gets real exciting is connecting the enterprise of the future to the cloud, and I think that's going to be the biggest change, the biggest revolution, but also the biggest revenue opportunity.

David Linthicum:

So, Shawn, we have some things that are – need to change within the country, and the ability to get these resources out to everybody that needs to consume them. Is that going to be the focus of 5G or is it basically what Duncan just said, it's going to be the ability to enable the enterprise, become pervasive, and bandwidth become commoditized and easy to obtain where right now it's not?

Shawn DuBravac:

I agree to a large extent with Duncan. I think where we're going to see 5G really thrive is in these enterprise settings or any area where there's mass congestion. Now, pre-pandemic, and hopefully post-pandemic, that involved large stadium settings, so you see a lot of use case scenarios around these type of areas. We haven't been in those settings lately, certainly not at the congestion levels that necessitate 5G and really allow 5G to thrive, but when you look at the enterprise, especially the industrial economy, you see all of these machines in a facility or a plant that could be connected in some way and uploading information, downloading information, sharing information across the cloud, I think there's a lot of opportunities there. The other piece is, just like with 4G,

5G will usher in new use case scenarios that we didn't imagine, and so there'll be some really interesting things, I think, that will materialize there that take advantage of the key attributes of 5G and cloud coming together, and I think companies are going to start to think about that as well.

David Linthicum:

Yeah, this is a great discussion. I think moving forward, 5G is going to be a big game changer, and it does a lot of things. Number one, it will democratize the ability to get to bandwidth that we need to train people and have people work at home, and some areas where they couldn't get the bandwidth before. By the way, I've lived in those areas. And the ability to, in essence, allow everybody to work in a pervasive way where we don't necessarily have to crowd into cities just because that's where the infrastructure is. I think there's some big things coming. I think this is exciting. And I thank both of you guys for being on the podcast and kind of bringing us the message. So, if you enjoy this podcast, make sure to like and subscribe on iTunes or wherever you get your podcasts. Also don't forget to rate us. Also check out our past episodes, including the On Cloud podcast hosted by my good friend, Mike Kavis, on his show Architecting the Cloud. And if you'd like to learn more about Deloitte's cloud capabilities, check out deloittecloudpodcast.com. And if you'd like to contact me directly, you can reach me at dlinthicum@deloitte.com. So, until next time, best of luck with your cloud projects. We'll talk real soon. You guys stay safe. Cheers.

Operator:

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