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# The Deloitte On Cloud Podcast

**David Linthicum, Managing Director, Chief Cloud Strategy Officer, Deloitte Consulting LLP**

**Title:**          **All in on AI with Tom Davenport**

**Description**:          AI has been around for more than three decades, but for most of that time, it's been cost-prohibitive for many companies. In this episode, David Linthicum talks with Tom Davenport about his new book with Deloitte's Nitin Mittal, *All in on AI.* The wide-ranging discussion covers how cloud enables cheaper, faster AI; how AI can help companies automate more of their business so their people can focus more on value-added activities; and the role and value of the modern Chief Data Officer.

**Duration:**          **00:25:40**

**David Linthicum:**
Welcome back to the On Cloud podcast. Today on the show I'm joined by our good friend, Tom Davenport. How are you doing, Tom?

**Tom Davenport:**
I'm great, David. Thanks for having me back.

**David Linthicum:**
Yeah, it's great to have you back. I mean, you and I met in person at DU. I always say BC, before COVID. And I got into what you were doing with the AI stuff and then started following you then and really been kind of blown away with some of the research and, some of the articles you've written, and certainly the books that you just published, and certainly your current book which is *All In on AI*. We'll talk about that a bit later in the podcast but catch us up. What have you been up to since last time you were on the podcast?

**Tom Davenport:**
Well, yeah, I think the last time, I had participated in an analysis of a cloud survey, so I talked about that some. I have continued to work on analytics, but mostly AI, since then with some occasional ventures into cloud-related activity and research. I am now publishing three books on AI.

**David Linthicum:**
At the same time?

**Tom Davenport:**
More or less. One is on AI in health care. One is called *Working with AI*, and that one's from MIT Press. It's a bunch of stories about—Deloitte always uses this term "with". It's not AI or humans, it's one with the other, and, so, this is 29 examples, plus some discussion, about people who work with AI on a daily basis today. I call it the future of work now, because we thought this wasn't going to happen for a while, but it's pretty common already. And then the third one is this book *All in on AI*, which I co-authored with Nitin Mittal, who's the head of AI for Deloitte in the US.

**David Linthicum:**
I know, and I think he's been on the podcast too. Wow. I write a lot of books too, but I don't write them concurrently, so you're to be congratulated and should we be concerned or should we—

**Tom Davenport:**
Well, I guess if you look at the books, you can decide whether you should be concerned but it's—at least they're all more or less on the same general topic, and, so, I don't think that the volume has hurt the quality too much, but I'll let the readers decide.

**David Linthicum:**
Well, everything I read from you is always excellent, so I suspect the books are going to be excellent as well. Tom's written a bunch of articles out there, is truly a thought-leader in not only the AI space, but the technology space and also the data space in general in terms of how enterprises are going to embrace this technology and make it as a true force multiplier for the business. So, what has changed in the last couple years in terms of AI?

**Tom Davenport:**
Well, the more aggressive embrace of it, certainly. There was a lot of—there's still a lot of experimentation, but you have a number of companies that are really getting quite serious about it, making some serious initiatives, making some serious money at it, and I think that's been a change since the last couple of years. There are some interesting technical developments. I haven't really written about them yet, but I do have a little research going on these large language models, and, in some cases large image models, that can generate amazing quality of text. I'm hoping I can use one to write my next book. No, just kidding. I have persuaded my editor at Harvard Business Review to let me write the first paragraph with one of these large language models like GPT3 or Lambda or whatever. So, I think that's certainly changed in the last couple of years. And I do think that for a lot of companies—I've found this to be true in the book—that they attribute the cloud to their ability to produce AI more rapidly and focus on developing the models and implementing the models and not running data centers, so I think that's helped a lot.

**David Linthicum:**
Yeah, my first job—I just turned 60. My first job out of college was as an AI analyst, believe it or not, and that wasn't just a few years ago. That was when I was I was 21 and doing LISP programming, things like that. And the reality was it was just too expensive. In other words, we were doing it for different modeling techniques. We were doing some stuff for the government, but at the end of the day, to set one of these things up in 1985, 1986 dollars, it was $20 million just kind of all in to get things going.

Now it's relatively cheap, maybe $200 depending on how much knowledge, data, and training they have to do and the ability to kind of bind it into other application development platforms and bind it into other data. So, really what the cloud has brought, not only the AI platforms have gotten immensely better than back in those days, but it's affordable. So, in other words, small businesses can punch above their weight finally because they're able to leverage this technology to take their business to the next level, to becoming different innovative players in the marketplace. Am I off?

**Tom Davenport:**
No. I think that's true. Now, the opportunity is there. Whether they are taking advantage of it, I'm not so sure. Certainly, the computational capabilities are a lot cheaper, and a lot of software is even open source now. And I think, really, more than anything it's the lack of awareness of what AI can do for a business, maybe some issues around can they get enough data to train their models and so on. That's often another issue, but certainly it's—cost is overall I think is not nearly as much of a barrier as it was before.

**David Linthicum:**
So, let's focus on your new book for a couple of minutes, the one you wrote with Deloitte and Nitin, *All In on AI*. Summarize it for the listeners, and what are some of the key highlights of the book and, something that you feel—things that were very interesting that you had to write about.

**Tom Davenport:**
Sure. So, this book is about legacy companies, not so much digital natives, but legacy companies who've decided that AI is really critical to their future success and, so, they've gone all in on it. We didn't find a ton of these companies, but I think we probably mention about 20 or 25 in the book, and I've learned of a few since then all over the world, some in the US, one in China. Ping An, I think, is one of the most impressive users of AI and one of the most impressive companies in general that I've seen. Airbus in the UK, one in Japan called Sompo, and then companies like Capital One and Deloitte, actually. I don't know if you've talked about this yet on your podcast, but Deloitte is doing a lot to introduce AI into its business, and I think this piece that we wrote in the last chapter is the most detailed description of the things that Deloitte is doing across its different practice areas to embrace AI.

**David Linthicum:**
Yeah, it's out there one thing to evangelize on the value of AI and show how it's used in certain scenarios. But the ability to implement it and show the world that we can do an implementation and bring that to light has some certain value, and then companies follow suit. You have to be able to do something right and understand what it is by doing before you can be excellent at it. I think that's why we're moving in this direction. So, it's a big doer-maker culture here, which I think is the right way to do it instead of thinking about things, which I think is important, the ability to kind of make hay out of it. So, do you think—I'm an architect by trade—do you think at some point in time I can retire, and we can have AI engines that'll do these complex configurations of technology and work through business requirements and come out with a perfectly optimized architecture or is that going to be held off for a few years?

**Tom Davenport:**
Let's just say I haven't come across any of those. I did—I was doing some research for a vendor, and I talked to a company in Europe who plans to develop a system like that to help design the architecture and decide for any given application or use case where it should run and so on, but they haven't actually done it yet. And I think they were talking about using the technology that you were probably working on when you started your career. They were going to develop some rules for it, and that's not a bad thing to do in the early stages of an AI application, but eventually, if you want to really have a precise answer that you trust, you have to move to machine learning, which means you'd have to evaluate a lot of different architectures and see which ones work out better and label them, and so on. So, it's kind of going to be a while, I think.

**David Linthicum:**
Yeah, I think so. But you think about it, it's a lot of existing repeating patterns, and kind of the difficulty we have right now since there is a skill shortage, everybody has—approaches architecture, and we can go with not only computer architecture, what we're talking about, but actual architecture with buildings and building planes and all these things that we're repeating over and over again, just trying to do it in better, more innovative ways, optimizing the architectures in such a way. There's probably no reason you can't automate a greater deal of that, versus just kind of have it in the brains of the humans that are building things, because our biases get into play, different cloud provider knowledge over other cloud providers, and it really kind of affects the end state solution. So, it's not completely objective, probably never will be completely objective. Even with AI, it's going to have its own biases that are part of it, but it'll eliminate a lot of the human weaknesses from doing this kind of work, or you think I'm off base?

**Tom Davenport:**
No. In fact, in building architecture, you do see the rise of this approach, called generative design, which uses AI and simulation-oriented tools to develop a lot of different designs for a component, or for an entire building even, and then a human architect can look at it and say which seem appealing, "Gee, that's something I didn't think of," which I think often happens, and you're really starting to see the same sort of thing in content creation about images and text and so on. I think in a way we'll all be a bit delinquent if we're producing an ad campaign or we're writing some marketing copy, even writing an important e-mail, if we don't let some of these smart machines take a cut at it and say, "Did you think about this?" Because it'll probably come up with something you didn't think of, either in an architectural diagram or an image for an ad campaign or marketing copy.

**David Linthicum:**
Yeah, it even would come to the fact that we're looking for different answers around sub-problems. So, with me, you have to know a lot about a lot of stuff as an architect, but we're getting into specific discipline of networking, the ability to have an AI engine to assist with the development of a cloud-enabled network with a VPN and these sort of compliance registrations, things like that.

It would be great if I could ask those questions and put in the parameters and then have patterns of the correct answers which would come back, even if they gave me options of things to look at instead of five factorial absolutions, which basically what you look around in any subdomain, whether it's networking or databases, things like that, they're giving you five top answers that'll likely be optimized for the problem domain you're looking for. So, anyway, always looking for ways that I can automate myself and I can hang around the pool all day. Let's talk about a research—

**Tom Davenport:**
Don't do it too quickly, David.

**David Linthicum:**
Hey, you know what, I'm happy with doing that. Always love automation and the ability to have technology kind of step up and do what humans can do and have us move on to bigger and brighter things. So, a recent research project with AWS on the role of chief data officers that you just did, tell us about that and what were some of the insights that you found out around that?

**Tom Davenport:**
Well, yeah. It was one of a larger surveys of chief data officers. We found about 265 of them in a quantitative survey, and then I interviewed 25 of them one-on-one, and it was really quite interesting. It confirmed some of my biases, but not others. It confirmed my bias that being a chief data officer alone is not a good thing to do, as somebody said in an interview.

That's a two-year job, because just architecting data and approving the data infrastructure and so on, is not going to be visible enough to most executives within an organization. After two years, they're going to say, "Yeah you solved some of our data problems, but how much is it really worth to us and what have you done for me lately, and is our data environment really better?" They're not going to be able to understand that easily. So, fortunately, there's a good market for chief data officers so they can find employment elsewhere, but I've written previously on the fact that their average tenure is about 2.5 years.

What makes it better is if you're a chief data and analytics officer incorporating AI as well, and then you can provide all sorts of value-added use cases that are much easier to assess the value of to the organization and are much more tangible, I think, accomplishments to people who are looking at your performance. But I think the bulk of the people I interviewed face-to-face at least are chief data and analytics officers now, and in general I think they're doing fine.

The one thing that I did not—one bias I did not confirm is that I always believed that data governance was a hard row to hoe, as they say, that it involves changing people's behavior, involves getting them to do things to manage data that they don't necessarily want to do, or that they feel that they're paid to do, but data governance was one of the biggest activities, probably the single highest priority, that these chief data officers were focusing on. So, I found a few that were trying some new approaches to that, kind of designing in governance into the way systems work and building new data marketplaces and so on with a lot of reusable data and that sort of thing, but I don't—I hope that they don't stub their toes on data governance. That I think is the only concerning thing I've found.

**David Linthicum:**
Compliance is going to be a part of it, data sovereignty. I mean, that's always going to be a concern of the data officers. And the thing is, you have the role of a data officer, you're looking at the holistic reason the data exists and how it's valued and how it's leveraged, so it's operational aspects of it as well as analytical aspects of it and the ability to kind of derive insights out of it that we couldn't do before. And the ability to put those insights back into the core processes, can they do the business good. And it really kind of surprises me that people are in there for a job for two years and then out because they're not really—they really can't make a huge impact in doing that. I mean, write reports and change a few minds, things like that, but not having any kind of operational impact into the day-to-day use of the data and its ability to kind of take the business to the next level, so this should be something that's probably more heavily invested in by the companies out there. What are your thoughts on that?

**Tom Davenport:**
Well, I agree they should have more patience about it. Modernizing a data environment, moving it to the cloud, and so on are not things that happen overnight at all, but these for a lot of executives are sort of infrastructural, they're hard to understand and value, and, so, that's why I think the successful CDOs are those who also have some responsibility for data and analytics, and in many cases, they're doing the data modernization work sort of use case by use case, so then the overall infrastructure gets better maybe a little more slowly but they can—they have something to show for it, if you will.

**David Linthicum:**
So, one of the trends I'm seeing is people are moving data into more of a real-time analytical realm. In other words, where I can see data as it happens and I can pull this data directly back into the core business processes. So, we're kind of moving from the olden days of data warehouses and data marts, and then we're doing data lakes and data lake houses, things like that, but the focus is really on not sometimes seeing the data, and typically with a month or two latency, which is really kind of what the data warehousing stuff is all about. But the ability to kind of see the data in a form where it's going to be more valuable to me in its analytical state, analytical abstractions, and be able to understand that either through dashboarding but also plug those directly into the base systems or also feed them in as learning data directly into knowledge engines, AI machine learning based engines to have them do more good around running the business, and that doesn't seem to be happening at the rate I thought it would. What are your thoughts on that?

**Tom Davenport:**
Yeah, I mean, I've certainly heard some examples of that, Capital One probably being the most prominent. They said over and over again we used to sort of batch data to some degree. We used to have some latency about how we analyzed it, and now much of it is streaming and we try to analyze it in real time, as you say, to affect the business or respond differently to the customer and so on. But I think for a lot of companies that are trying to do that, there's still data integration issues. To me, one of the really interesting things in this *All In on AI* book was the emergence of these multi-company ecosystems for sharing data, adding value to it, and so on. So, Ping An, this Chinese company, has five big ecosystems. It's the largest private sector company in China now, even though it was formed in the mid-'80s, one in banking, one in insurance, one in automobile services, one in smart cities, and one in health care.

And just in health care alone, they have a product called Good Doctor. It's an intelligent telemedicine tool, we have telemedicine more now because of COVID. It's mostly just talking to the doctor over Zoom. They have over 350 million customers for this product. It's just mind boggling. Airbus is doing it with all the airlines that they supply aircraft to and all the aircraft themselves, streaming data out behind them as they fly through the sky. This is a program called Skywise. So, still integrating the data to some degree and trying to figure out how do we add value to it, but I think it's going to make a huge difference in the future.

**David Linthicum:**
Yeah, it's great to hear that, because that's always been something that people have been calling for years is the ability to pull information to get common patterns out of not just information that's native to your particular company, but to a particular industry, and now we're dealing with things such as supply chain. Certainly, health care is a big thing, the ability to kind of look at diagnostics and share diagnostics and outcome data across different hospital groups so we can lower mortality rates, which is a good thing. But, also, the ability to optimize supply chains and all these things where, if we're able to combine and understand data when we're dealing with multiple companies—if you think about supply chain integration is about coordinating information exchange between multiple companies to optimize the way in which goods and materials and parts and things are showing up for manufacturers to build stuff and ship them out and things like that. We've fallen down during the pandemic. It just seems to me that that should be an explosion right now. So, what you just talked about, little groups of people who are—the airlines and banking systems, things like that, it just seems like that's low-hanging fruit where companies can do that now and go off and generate a huge amount of value. Am I off?

**Tom Davenport:**
No, I think that's definitely the way organizations are going. You're right, we had a major hiccup on anything related to the supply chain it seemed during COVID, but I'm hoping we come out of it with maybe not the ability to predict—I mean, not the ability to forestall all the problems that occur in supply chains, but we'll at least be able to predict them ahead of time and find alternatives more quickly.

**David Linthicum:**
So, what are you going to be thinking about next? What are you working on next after you finish these three books? Is it—what are the topics you're going to focus on?

**Tom Davenport:**
It takes me a little while, but I've been very interested in decision-making and what tools like AI, and even going back to business intelligence and decision support, are doing for decision-making. So, I think I'm going to write something substantial on decision intelligence, which is popping up again as a term a lot of people are interested in. And as I say, I'm really interested in what these large language and image models are going to do for businesses. I found them quite dazzling personally, but I'm trying to find what companies are actually accomplishing with them.

**David Linthicum:**
Yeah, I think we're talking about that earlier in the podcast, but the ability to have these things make critical decisions and able to make them better than humans because we're able to consider a much more wide array of information and much more wide array of information patterns, and I think that's really kind of the next destination of this stuff. So, you're absolutely in the right space to be looking at that as kind of your next engagement of intellect. So, where can we find your stuff on the web? Where can we get your books, Tom?

**Tom Davenport:**
Tomdavenport.com. I put almost everything that I write or at least links to it on my LinkedIn page, and the books will be at all your normal booksellers. MIT Press is coming out with a working with AI book, and Harvard Business Review Press coming out with *All In on AI*. That one's not coming out until January.

**David Linthicum:**
Well, this is great. I mean, keep us updated on your work. We definitely have you back on the podcast again. I'm sure you're going to have three more books that you're writing at the same time, which is kind of hilarious unto itself. I don't think I could keep—I barely have a chance to keep track of one at a time. Let me tell you, Tom's work is incredibly important. The ability to understand not only how we're leveraging AI as a force multiplier for the business, but how it integrates with various data analytics systems, that's converging right now.

If you're not considering these as kind of separate intellectual silos with the ability to make sense of information by engaging AI systems, by engaging problem patterns, by engaging decision management, decision support, and doing this stuff in real-time so we can play it back to the business, so we can optimize these business to be as automated as they possibly can and then making decisions as near as we can to perfect information and perfect decision making, so that's going to be the work ahead of us moving forward.

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