



# AI & SKILLS PART 1: A QUANTUM LEAP

## WALK IN THE CLOUD

### VIDEO TRANSCRIPT

Host:

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Tom White Bio:

Tom is a Managing Director in the Next Gen Engineering practice, specialising in building innovative digital products and services for clients in all industries. His interests and experience span digital transformation, product and platform engineering and technology strategy.

Intro: Walk in the Cloud.

Ellen: It's a matter of some debate whether we're all living through the 4th or the 5th Industrial Revolution, but there's general agreement about where and when the first one happened. England in the 1800s, and if you're looking for a cradle of that revolution, you could turn your eyes towards Birmingham. I'm Ellen Bencard and that's where we're heading on today's Walk in the Cloud. Birmingham Tech Week channels the spirit, growth and energy of that original boom into a series of events focusing on today's potential, and there is plenty of it. We decided to do a live recording of this podcast there.

We were introduced by the very impressive, applied futurist Tom Cheese-Wright, who threw proceedings over to me, to talk to Accenture's Tom White. Tom, thank you for joining us. Why should we be listening to you, Tom. What do you do?

Tom: Well, that's a question I've asked myself this morning, actually. So yes, I'm Tom White. I'm the head of strategy and growth for Accenture Technology in the UK. So I'm a software engineer by trade. I'm one of the leadership team of a business that we call Accenture Next Generation Engineering, so I spend my time with customers building modern cloud native products and services. Some of the organisations who are represented here today. And as of today, I'm a podcaster. This will either be the start or end of that career, so let's see how we get on.

Ellen: So Tom laid down a fantastic foundation stone for us and I want to build on that. Let's start with AI, which I suspect there's not a presentation today that isn't going to mention it, but you're at the coal face, you're out talking to clients all the time. Cut through the hype bubble that we're at the top of right now. What's actually going on? How are people using this and thinking about it?



Tom: Yeah, sure. So, I think the starting point for thinking about AI is we need to recognise where it's come from and where it's going. AI is a concept that has been around since the 50s. And between then and today it's been in go fast mode. It's been in go slow mode. There's been decades where not much has been achieved in terms of academic or technological breakthroughs. And then last year, we had the iPhone moment for AI and it's gone into lightspeed. ChatGPT dropped and all of a sudden, it's front and centre of mind for everybody from university students through to the boardroom. It was the fastest ever application to get to 100 million users. There's a huge amount of hype and excitement, like you say. Just to bring it back to the here and now and what I'm seeing and experiencing with our customer. What AI is really driving is a renewed focus on digital. Because to get to value from AI, fundamentally, you need data, a lot of it, and you need some other stuff like accelerated compute, which maybe we can get into, but you need data, you need the ability to access that data and that really means getting that data into a modern data platform; probably on the public cloud, you need interoperability between your systems and your partner systems. And to answer your question directly, the reality is very few organisations are there yet, unless they were born in the cloud.

Ellen: And what are the typical things that people need to do to get that digital core up to speed so they have the data they need for this AI dream to come through?

Tom: All of us will be familiar with the term digital transformation, but I think you can think about it in two waves. Perhaps with the exception of organisations who are digital native and were born in the Cloud, digital's really only into sort of the perimeter of most enterprise organisations.

So, their customer-facing applications, maybe some of the B2B or B2C apps, perhaps applications used in a call centre, many examples, but the common theme across all of them is when you really get into the nitty gritty systems of record, the mainframe, the applications built on languages that some of the younger folk in the room have probably never heard of, that's not digital. And those systems are more often than not the ones that hold the data and when that data is curated and inspected in the right way, the insight. The digital core is about getting access to that data and being able to service it to your end users and then get some intelligence from it and it's that scenario that you really get an advantage from with AI.

Ellen: So, I want to push you past AI because that's actually very much today's technology and we're talking about technologies of tomorrow and I know that your bet is on something else.

Tom: Yes. So, I don't think the bookies will take bets on this, but if I was a betting man, the real excitement for me is around what quantum will do for AI. So, quantum computing blows my mind. I don't understand it, but I can share a little bit of insight I've managed to glean. Look, we're in the West Midlands, the home of the Industrial Revolution in the UK, and that Industrial Revolution was powered by what?

Ellen: Steam.

Tom: Thank you, steam. It was the age of steam. It was steam that fundamentally unlocked that wave of technological advancement and value to the organisations that were prevalent at the time. What's the equivalent today? Well, today is the age of what do we all have in our pockets?

Ellen: We have our silicon driven iPhones.



Tom: We have phones of any vendor of choice and within those phones are silicon chips, as you will find in all computers, and what's happened to computers over the last 10 years is they've got faster. And they've got smaller and they've got cheaper. That means they can process more data and they can do more things at once, and they don't have blue screens of death, and they don't run out of memory. And all this good stuff. And they're super, super reliable. But there's a problem. That can't keep happening forever, because the laws of physics, those pesky things that we live by and they govern the universe we operate in, they're gonna get in the way. So eventually transistors will get so small down to the width of just a handful of atoms. They can't get any smaller and what happens then? Computers will stop getting faster, or perhaps not at the same rate that we've got used to. And that's where quantum comes in.

Because quantum computers don't use what's called a digital architecture case, they don't use silicon, they don't use bits; traditional bits, ones and zeros. They use qubits or quantum bits, and those take advantage of the mind-bending properties of quantum mechanics, things like spin and superposition and being in the same place at the same time and tunnelling.

Ellen: OK, so make this real for me and give me some use cases as to how does this then translate to the real world?

Tom: Just to make it real, it's probably not quite in the other Tom's world. This is here now. Over the break at lunchtime, you could log in to a public cloud provider and access a supercomputer. The hardware is wheel to wheel and it's there now. What's not there now is the scaled real-world applications of it. Quantum computers are great for certain problems, I won't go into the weeds of what they're good for and what they're not good for.

Let's just say it's not gonna help your Google homepage load faster, it's a specialised type of computing. And wherever there's a problem that needs you to take huge numbers of variables into consideration, quantum computers are brilliant at it. OK, hundreds of thousands or millions of times faster than a traditional computer. So, when you think about what industries that could apply to; drug discovery, modelling how atoms interact. Supply chains working out complex routing of supply chains around the world or finance, taking in lots of different variables and understanding how to manage risk or price financial instruments or things like this. And these are all industries that are so prevalent across the West Midlands.

Ellen: I know I could talk to you about this the whole time, but, moving on. Let's talk skills because obviously moving to quantum is going to be like moving from the boatman who used to run on this canal, to railroads; totally different set of skills. How do we develop them and how is the UK doing? And the West Midlands, specifically, in getting to those skills.

Tom: There's lots of parts of that, which might mean you might need to rein me back in a little bit here. Firstly, on the quantum side, the West Midlands is leading. The government has a national quantum strategy. It's just founded National Quantum Centre in Oxfordshire and there's various different locations around the UK that have got particular areas of specialism. Birmingham University, for example, hosted the National Quantum Computing Hackathon this year and they took real world use cases from across those industries that I mentioned. From prominent industry partners who are based here in the West Midlands, and they built real world solutions to business challenges that those organisations face today. So, on the on the quantum side, it's early days, but the region is well up there and leading in the UK.



Ellen: And what types of skills are we talking about? Is it a different way of thinking?

Tom: It's going to require the same journey that we've been on for digital, I think will happen again. We're currently going through a bit of a transformation in the education sector where there's a real premium on STEM skills; science, technology, engineering and maths in universities. I think the education sector has done a brilliant job of waking up to that, but we haven't quite had enough time for the talent and the people to go through that system. So, I think I'd say it's a, it's kind of four or five out of five on having the platform to be able to get to digital skills, but maybe a three out of five in terms of where we are on that journey because we just need a bit more time for our traditional non-stem and more humanities.

Ellen: And talk to me about the challenge of training those of us who are in the workplace right now, because I know you're doing work with clients and Accenture itself is doing a lot of in-house training. What can we do today?

Tom: The skills and training focus in general and what we're really talking about here is what do we need now, what do we need next? I'm sure Birmingham Tech Week, for those who are here, you'd have heard talk about digital skills last year, there'll be talk about digital skills today, tomorrow and it will be here next year. So, it's the substance within that matters and it's important to recognise that the demands on people who are re-skilling this year alone are very different to what they were two years ago. If you maybe think about it in terms of having foundational digital skills; how to use mobile applications, internet applications, understanding interconnectivity between them, things like this, that's very different to what you might describe as needing digital for today, which is going to need much higher levels of data fluency, starting to get your head around some of the underlying technologies of things like ChatGPT and large language model. So, I think that's the first point. The goal posts are moving. We should just accept that. But when we talk about skills, we kind of have to get into the weeds about what do we really mean. In terms of what's happening here in the West Midlands, there are collaboration and partnerships happening everywhere.

I'll talk to the one that I'm close to, which is Accenture has something that we call the School of Tech Futures, which is about taking people through an immersive multi-week training programme. It's something that we do with our own staff and colleagues. So, we take our graduates and we put them through it, but we also offer it in universities. Here in the West Midlands, we trialed it this year and last year with Aston University. Something like 80 students through the 1st cohort, and I think there's another hundred signed up for next year, but it's not just us. There's lots of professional services organisations, some of our technology partners who are represented here today. You know it's a real hotspot of collaboration between industry, between the education sector and between government.

Ellen: I'm going to interrupt our walk there because we'd rather leave you hanging than drone on for longer than you have time to listen. Next episode, I'm going to be back with Tom and the second part of our conversation in Birmingham where we move on to sustainability and more talk about the tech skills before Tom and I, back in our home offices, reflect on what we learned from our stroll through the heart of the West Midlands.

Outro: Walk in the Cloud

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