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*Question: What is your educational background? How did you decide to work as an IS/IT professional?*

Answer: Computing's always been my passion, my hobby. I first learnt about computing and programming from books my father had when I was about nine. He had a lot of self-study books. He was studying to run operational research for the National Health Service, and so he had all these great books at home that taught you how to programme an imaginary mainframe computer, but to punch cards as instructions.



So that's how I first learnt before I had even ever touched a computer, and I was lucky to have a, I think like many people in Britain, a Sinclair ZX81. It was one of the very earliest micro-computers you could have at home, a BBC micro-computer, so that was my first real introduction.

At school I was very much maths, sciences, double maths and physics to A Level and S level, and I sort of knew that I wanted to do computer science of some kind, but perhaps didn't want to do traditional where you would learn programming from first principles. Again I felt I already knew, perhaps a bit arrogant, but I already knew that sort of side, and at the time, this was the mid 80s, artificial intelligence, just how far could we go programming computers to be smarter, brighter, even human-like intelligence or interact with them was becoming a hot topic, and Sussex University had one of the few graduate courses for under graduates available, so I did a BA in computing and artificial intelligence in the computer science programme at the University of Sussex.

*Question: In a few words, could you explain for our students, what your job entails? If you were to mention one aspect in which your job has changed over the last 10 years, what would it be?*

Answer: My beginning of my career was very much hands-on programming, software design and new applications, working with government and companies to build software itself, and then latterly I also designed some of the IT infrastructure that ran that software.

But now, if I'm honest, I think I spend far more time talking to people, talking about what technology can do, understanding what people's

problems are and bringing a commercial view to that, so how expensive might it be? What's a reasonable amount of money to pay for something?

A lot of my job these days, 60% is probably with major investment firms, private equity firms, venture capital firms. Two sides, either buying companies where technology is a critical part, say insurance player or a bank, and saying how good is that technology and what could it do for them in the future and how much would it cost, or indeed technology is business these days, so some of our fastest growing companies are technology firms. Some of our biggest export firms are technology firms, so if you're acquiring one of those, you might hire someone like me to come and say "okay, how well run is that firm, what should it be spending, how much perhaps is it worth in the future, is it selling a product that people will need, are there extra things it could sell and do, how well does it play globally and not just in Europe", those sorts of issues that try to value for IT are sometimes a very concrete commercial value, would you pay a billion dollars for this work, yes or no?

*Question:* Could you perhaps explain for our students what cloud computing is?

*Answer:* So for me a lot of technologies are involved in cloud computing. Some of them are quite old. Virtualising, where you share different applications and users share resources; that's a technology that came out in 1950s' mainframes. Bureau and batch technology where you use just what you need, again that's something that's been with us since the 60s, 70s, in different guises, but if you bring those things together with mass access to broadband technology for corporates and consumer users, you bring that together with the hugely falling price of computing power, you take a true utility model where you can use almost as much as you can imagine in any given minute or hour, but then need no more than that, you bring all these things together and you get a commercial revolution in IT.

So I've lived through a few different changes. I remember the mainframe era, moving into mid-range and micro-computers, home computers and PCs. That was a huge liberation for business and for home users.

Cloud computing for me was as big a change, not because of any one single technology, but because suddenly the whole value chain of IT was going to change. It meant that providers would take much more responsibility for running and maintaining systems, because frankly we don't have chief electricity officers in companies anymore or we don't have to run our own diesel generator at home, or rarely, because utility providers take responsibility for that. It's no longer something that each company needs to do.

At the moment companies spend far too much money just keeping their computer systems running, or maintaining them or securing them, and really that's a wasted cost. That's friction in the system.

What's happening with cloud computing, that's been taken out. The responsibility and the cost for that is moving upstream to the provider, and they'll give you the latest software, the most secure version. They will keep it running night and day hopefully, and it's their responsibility and you pay for them to do that, but also you pay only when you use it.

So cloud computing's all about, well two things, a utility model, so you pay for what you use when you need, whether that's software or giant amounts of extra computing power or storage, and also it's about a shift in responsibility so that users and corporates become, they should be concerned about what applications, how do they use those applications, how do they choose them and fit them to their business? They shouldn't be concerned with keeping the lights running on in a data server room or installing the latest patch, or maintaining technical details on an operating system database. That's no value to business at all.

So cloud computing is to me a wave of change going through the whole industry, top to bottom. Even small software suppliers, and I work for a lot of fast growing software companies, once upon a time it might have taken you years to establish an audience for a new piece of software and even find out if it's ready or not or fit for purpose or you can actually achieve a market value.

Now I know of software companies in the first six months have several thousand users around the world, because they built their software on a cloud platform, allowing people to trial and test it that way, and suddenly they've had thousands of people giving feedback and they've done that at very low cost. So we're also taking a lot of cost out of industry and hopefully replacing it with some real value.

*Question: If you were to mention one way in which cloud computing can make a difference and bring value to the activities of business organisations, what would this be?*

**Answer:** It opens up a whole new business opportunity because the value, the cost of entry has decreased hugely, and because you have safe, secure, standard global platforms that you can run the same business software on anywhere in the world, and for instance I have several customers who are now world leaders in things like HR software and support, everybody needs to be paid on time, everybody needs their pensions calculated. That's a common business model wherever you are in the world. These are UK firms but they have truly global customer bases, and in fact Asia may be their fastest growing base. So that's a great example that cloud platforms let you reach markets you may never have tried before. It also

means your competition could be from Korea or Malaysia these days, so you have to watch out for that too.

*Question:* Finally, what advice would you give to students who want to work in the IT sector in the future?

*Answer:* a) be passionate about it. It's very hard in life to be successful in anything if you're not passionate about it, but IT is such a broad, broad world these days, and so many different skills, not the purely technical programme infrastructures skills, but I've hired linguists or I've hired translators, and technical authors and business analysts, and mathematicians and physicists, all of them essential to different types of problems. So IT is a very broad field in that sense.

And also it's everything these days from creating gaming, powerful user experience on mobile apps and tablets, home consumer use, music industry, media, as well as banking and financial services and very big corporates and governments. There are so many different ways of using these skills. Don't be stereotyped into thinking there's any one caricature.

I'd also say hybrid skills are probably the most valuable. So if you have a flair for marketing and technology or a flair for commercials, or understanding a particular business domain, or multiple languages or different cultures, and you can blend that with technical skills as well, I think those are the jobs which are the most rewarding and probably the most secure, because if the cost of computing falls, actually we'll do more applications, we'll build more solutions, but we need people who will sit in front of that user or entrepreneurs who will be thinking about what consumers want, who can create those ideas, and that means I think there will always be jobs in IT.