



Capturing the Past, Inspiring the Future

Sue Daley

Interviewed by

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Welcome to the Archives of Information Technology. It is Thursday the 16th of May 2019, and we are in central London. The Archives captures the past and inspires the future. I'm Richard Sharpe and I have been covering the IT sector since the 1970s. And we have a first for the Archives. We've never had anybody before who has swum the Channel, and to my knowledge I have never in all those years interviewed anybody who has swum the Channel, but our contributor today has. Not only that, but she is back from the base camp of Mount Everest in the Himalayas. So she is a, a well-rounded person, both on land and on sea. And she is Sue Daley, who is a member, an associate director, of techUK, which is really the trade body of IT companies in the UK, is it not, Sue?

That's right.

[00:55]

That's right. Where were you born, and what did your parents do?

I was born in Huddersfield in West Yorkshire. And my parents, my father was in local government, so, he was a public relations officer for the local government up there, Kirklees County Council. And my mother, I suppose when I was, until I was about twelve was a stay-at-home mum, and then, I remember, I was about eleven or twelve when she decided she wanted to go back to work, and worked in finance and banking until she retired.

[01:32]

What did you think your parents gave you that has projected your career as it is so far?

That's an interesting one. Thinking about it, my father I suppose working in local government and local councils all of his life, after working in Yorkshire, he moved down to Bedfordshire and carried on doing the same job, so, working in local government and politics, I suppose that, that, I've carried a bit of that on into my own career. So I've always been around town halls or local government offices, and seen how my dad worked with the media, and worked with local politicians. My mum. My mum I think really gave me that sense of, of women empowerment and women

going back to work. So she was a stay-at-home mum, she looked after myself and my brother, and then, when she decided to go back to work, technology had moved on greatly, you know, she wasn't up to speed. She took her courses, she even took computing courses, and got herself trained and retrained, and was determined to go back to work, and did. So I think, I've obviously learnt a lot from her in terms of her drive to be up to date and up to speed, but also to, to go back to work and have a career. So, I think, yeah, a bit from both of them really, in everything I do.

[02:51]

You're in central London now, and Huddersfield is up north is it not?

[laughs] It is.

Is there, is there a characteristic of a, of a northerner being in central London that you have?

I suppose I've been in the south longer than I've been in the north, but in my, in my heart I'm very much still a northerner.

Right.

And I think, it gives you that ability to see how different people around the country see these issues as well. So, techUK, yes, we are based in central London, but do a lot of work around the country, and, and you know, what's happening in the North with, you know, the northern tech hubs in Manchester and Leeds and other areas, it's really exciting to see. I was in Manchester last week at Tech Show North. There's a real buzz and real excitement about what technology can do for transformation in the North. So it's great to see, see that happening as well.

So it's not only Silicon Roundabout?

No.

Or Silicon Fen.

No. We are techUK, so we, we get round the country. So for example, Bristol is a really exciting hub around Internet of Things technology, so we do a lot of, a lot of work down there. So yes, we get out and about to support the whole of the community.

[04:00]

You went to a primary school and to middle school, yes?

Yes.

And, in middle school you, joined a computer club.

[laughs] I know. I actually...

This is a... Now you are the first person I think I've interviewed whose actual first taste of computing was on a Micro. Was it on a BBC...?

BBC Micro. Yes.

BBC Micro.

We had... In fact my parents bought myself and my brother, I can't remember when, it must have been very early Eighties, a BBC Micro as a joint Christmas present.

Wow.

Which at the time we were both a little bemused by. But, we were, you know, a small village in Yorkshire, we were the only one to have one. Later our primary school even got one, and we were the only ones that could work it. So, we became the kind of, I suppose, IT support for the primary school of the day. But yes, then I went to middle school. It had a computer club. And I actually just found I had a, a certificate for Level 1 from my computer club that I still have to this day. But yeah, it was, it was clearly something that my parents knew was coming, and wanted to get us up to

speed on. And, yeah, I suppose a love of computing and technology went on from there.

[05:08]

We have the contribution in the Archives of the people who devised the BBC Micro, Chris Curry and others, Hermann Hauser.

Wow.

And, also their great rival, Sir Clive Sinclair.

Yes.

So, you were the first in it. And so you understood this. It wasn't intuitive, was it; you had to work at it to understand it?

Absolutely, yeah. And, I think if you sat me in front of one right now, I, I may, may struggle to, to get it to work. But back in those days, I mean, as kids we, you know, we used it for, for gaming really, not, not... We did programming a little bit at school to, you know, to, at a very simplistic level. And, yeah, it was, it was a, a brilliant machine to kind of get you going. But it wasn't as widespread as it was today, obviously.

Chris Curry was at Sinclair, and he, [laughs] he used to spend Christmas on the helpline. [SD laughs] So Christmas Day, he was getting phoned up by irate parents saying, 'I've just bought this for my kid and it doesn't work. What do I do?' I think his standard answer was, 'Send it back and we'll send you another one.'

[06:10]

But... So, so that was your middle school. You then moved on to do GCSEs and A Levels at a girls' school.

Yes.

Rather than a mixed school.

Yeah, well we moved, my father's job moved from Huddersfield down to Bedfordshire where he was a public relations officer for Bedfordshire County Council, and, then, the school that I was in in Rushden, was a girls' school at the time; it turned into a mixed school. But that was the, the school that I attended, so yeah.

Oh OK. And how did you find that, being in a girls' school?

It's a big difference. Because you're used to interacting and engaging with, with boys as well as girls, obviously. It was... Some of the classes were, I have to say, were a little less raucous maybe, but, it was definitely a different vibe, but one where I, you know, I still have friends that I keep in touch with from there. And when we got to A Levels, they were mixed. So, good friends from there as well.

It is said that girls do better in single-sex schools. Is that, did you get that feeling?

I... [pause] I definitely felt that in some of the classes I probably got a little bit more out of them because it was a bit more focused.

Right.

But we had a girls' school and a boys' school in the same town, and I know, just as the girls that went to the girls school have done well, I know the boys that went to the boys' school have done well. So, so perhaps, yeah.

[07:34]

Did you carry on your interest in IT and computing?

Not so much, I have to say, not so much in, during GCSEs and A Levels. I found other interests, more creative interests, which are important as well, right? So, very much into music, and very much into art and, and English. And, no, my kind of, BBC Micro days were, were paused slightly while I, while I went through that, that process, and then went on to uni and, to study history, and, and to get more into politics and, and international relations and international affairs.

So what were your A Levels? Presumably history?

History, English and music.

Right.

So I play the piano and, and used to sing quite a lot. So much more on the creative side.

OK. No technology, no maths, no physics, none of that sort of stuff?

No. No, very interesting. No, it's... It always makes me wonder, if I'd done a different path, where I would have been today, but... No, but, I have to say, in, particularly in music, we were doing A Level composition, that was all computerised, you know, it was all, the keyboards and the computer programs of the day allowed you to create these wonderful masterpieces that, that you wouldn't have been able to do years before. So a bit of computing, but, no, not, not behind the computer as such.

[08:47]

Had your parents been to university?

My dad went to art college up in Liverpool, so he was an artist and a graphic designer before he went into public relations. And my mother, no. So I was the first, first one of my family to go to university.

Go to a real university [SD laughs], and, and do a, a BA honours in history and American studies.

Yes.

And, did you live away from home for that?

I did. I went back up to Yorkshire, I went to York University, St John in York, which is affiliated to the University of Leeds. And yeah, I went back up north, which was, which was nice. And then, did a master's degree in Birmingham on international relations. So, went, headed back down south slightly.

This was '94 to 97.

Mm.

Because you're, 42 now?

I am. [laughs]

Congratulations. And you had a year abroad,, a year in the US, in an affiliate college, is that right?

Yes. Yes, went to...

Where was that?

Union College in Upstate New York.

Wow. Nice.

Yeah. It was really... It's a brilliant school. And in fact I still have, my college roommate while I was there, I still keep in touch with, and she's very much part of my family. But, absolutely brilliant school. And that's really where my love of American politics really came into its own. I had a great teacher there, a professor in American politics, who really brought the political system in the US, which I knew a little bit of but didn't know in terms of great depth, really to life.

Not many computers yet then?

No, but interestingly enough, that was where, you know, I first came across things like email and the Internet. They had a big, you know, computer presence on campus. And, yeah, had, first email was when I came back to, to York, we had, you know, first email kind of addresses and, and allowed us to keep in touch with the people that we had met there. But no, that was really the, the start of, I suppose my dotcom kind of days.

[10:52]

You graduated from that.

Mhm.

And, you went into government relations, is that right?

Indeed. Yes. So, after my BA and my Master's, came back to London and started work at, yes, a political consultancy at the time, GJW, which was based in Westminster.

GJW?

GJW.

Right.

And, yeah, started in parliamentary monitoring. So, very much wanted to kind of, start at the bottom.

Nineteen years ago.

Yeah.

January 2000.

Yeah. Get, get my, get my feet wet into how the world of Westminster and the world of political monitoring and public affairs and government relations works.

OK. What was your biggest project in that period?

[laughs] Worked on a number of different campaigns for clients of course, activities. But because, I started in parliamentary monitoring and it was my job to, you know, know what was going on in the House and know what was going on in Hansard, know what was going on throughout Westminster really, and then report that back to clients, and to help work on their campaign. But worked on some, some great campaigns, from helping clients, you know, around passports for pets at the time, worked on issues around, you know, kind of, healthcare and social care, as well as defence issues, and, and some telecoms stuff. So it was a really interesting time. People were getting to grips with what, not just in, in technology, people were getting to grips with what, what this was going to do, and the impact this was going to have.

[12:28]

What was the telecoms issues?

So, actually from when I was monitoring in, and working in that area, the team, they created a team looking at e-business and e-commerce issues. So I joined that as a bit of a, an account exec. And issues around, you know, 3G, and, and telecommunications and, and what was happening there really started as well as, you know, we had had the kind of, dotcom boom and bust we were now starting to come out of, what things like e-commerce were going to mean, and things like, you know, future regulation and, and data issues.

[13:02]

You stayed with GJW, and they got taken over?

They did a few times.

By Weber Shandwick.

Yes, by Weber Shandwick.

Also a PR and lobbying operation...

Indeed. Indeed.

...in my experience.

Yes. A massive difference when GJW, which was set up by a few partners, it was a small, a small house, and then moved into a much bigger, bigger organisation, but, you know, a great opportunity to work with some amazing people who were really highly skilled in what they did and what they do. And amazing clients as well. So a great opportunity to work with some amazing people.

[13:38]

So really you spent, just, just over two years in this...

Learning my trade. [laughs]

...in this line of, in this line of work.

Yes.

Now e-commerce and e-business were then developing at the time. What type of future did you really think it had in concrete terms?

Yeah. It was a, it was a great time to be working in that area, because, organisations from, you know, banks to high street chains to shopping to retail to food, were just kind of getting their head around what, what it could do for them and what it could mean for them, in two ways really, and that was the exciting time. It was, what can technology do for organisations in, you know, internally as part of their, their supply chains, can open up, can increase more partners, more opportunity to work with different suppliers. What could it do in terms of efficiency and, and driving cost-effectiveness, and, and, all the internal bits that organisations need to do. But then

also, what could it mean in terms of transforming the relationship with the customer, and, you know, to you and I, and, and what we can sell or buy on the Internet, and, how we can interact with companies, from, you know, marketing days, you know, how marketing has changed, and advertising, all the way up to delivery and, and transactions. It was, just trying to kind of, find the way through in terms of the opportunities that it could really bring. And I think a lot of it started internally and then moved out to, what could we do with the customer? But it was a really amazing time.

[15:11]

Downsizing was one of the issues at the time wasn't it, use IT for downsizing.

Well...

The... Sorry.

No no, go ahead.

And when you look back at it, were really those ideals and projections fulfilled, or would some of them remain unfulfilled, do some of them remain unfulfilled?

I think a lot of them came to pass. If you think about the supply chains now, some of the larger supermarkets for example, there are lot more smaller players and partners now, with things like, you know, kind of, online ordering and digital transactions, e-signatures and things like that, has helped to enable that to all happen. I think the relationship between companies and customers now, obviously, we're all very used to it, it's commonplace for us now to be shopping on our phones and to be communicating probably by email or chatbots with, with high street chains as well as, you know, kind of, major providers. I think that's, that's all come to pass. I think that, companies, or a lot of companies are using technology to get those internal efficiencies, which is brilliant, but there's a lot of companies that still could be doing more. So, and particularly if you look at the, the invention, or rather than emergence of cloud computing, there are a lot of organisations that are using cloud in a way to drive efficiencies, but there's a hell of a lot of organisations that still aren't. There's a

very long tail, and it's still relying on traditional infrastructure, which if you think about the digital transformation that's going to come next, with the likes of, you know, artificial intelligence, and, sensors and Internet of Things, and, you know, smart secede and smart infrastructure, then, that lack of having that digital infrastructure that cloud can provide could hold them back. So there is still more work to be done I think in getting that long tail of organisations, particularly more small and medium size, that aren't perhaps, aren't digital yet, or haven't got digital invoicing or don't have that digital infrastructure, to bring them up to speed.

[17:14]

It seems, I don't know whether you would agree with this, but it seems to many that one area that is lamentably lacking in a proper strategy is the public sector, and particularly central government and the services of central government. Would you see that, do you see that?

So I think... No, I would probably disagree with that. I think the public sector has a very clear digital transformation vision of where they want to get to. And I think they do understand, and the public sector's wide, right, we're talking about it as a huge... But I think, public sector at the central level and at the local level both see the opportunities that technology is giving them already. We know that there are councils out there, Essex and Enfield are using chatbot technology already to provide, you know, a 24 by 7 service for citizens in a way that, you know, helps you and me in our daily lives, helps nurses coming back at two o'clock in the morning and want to know, all right, are my bins today or tomorrow? And she just wants to go to bed. So she can use a chatbot to find out. And it's more response, it's more agile, it's how you and I want to, want to, you know, perhaps contact our, our councils or our local government. But in a way it's using technology to enable them to do that, provide that service. On a bigger scale, I think, yes, the work that the Cabinet Office and GDS and, and others are looking at it in terms of digital transformation of public services is a really clear vision of way forward. And there's a lot of work that's happening to do that. And individual departments, you know, there are individual departments that are taking that forward in very powerful ways. DWP has a great data scientist team there, they're really, you know, the rock stars of, of data science in the public sector. HMRC, digitisation of tax, you know, is a huge project. So there's a lot going on

across that, you know, what visionary, what could we do if we get this right? So yeah, I think there's a lot happening. And if you look back, there's definitely a lot happening now than there was, say, even ten years ago.

[19:21]

And yet my GP can't see my hospital records, and my hospital clinician cannot see my GP records.

Yes. So...

There is a disaster there, wasn't there? Unmitigated disaster.

In terms of the, the sharing of information?

Yes. In, in terms of, billions lost.

So there's a lot happening that's good, and there's a lot happening right now, and particularly in, in health around transformation of healthcare. So Matt Hancock, the Secretary of State, has made, you know, technology in, across all of the Department of Health and across all of our healthcare services, one of his, like, top three priorities, which is awesome. And, and that's what we need, right, because there's huge opportunities here. But we need to get some things right as well. And data and data sharing is, is an issue that, we have to learn from what's happened in the past. So care.data, you know, the issues we had around care.data, a lot of that I think came from not explaining and understanding to, to us, to individuals, and bringing people on that journey, what this could really mean, if we could allow sharing to happen more easily. There are issues that need to be addressed there. Are they technical issues, or are they cultural issues, are they understanding, are they trust and confidence around how data is being used, how data is being shared, you know, can we explain to people the benefits if we can do this. You know, if we, if we have access to your data, we can, you know, provide better healthcare services to you and your family, or we could help, pull that data together, we could help find, you know, early detection of Parkinson's or something like that. If we can explain it to people in a way that people understand what it means to them, I think that's a key, key part of

moving forward. But yes, clearly there are still, there are still issues that need to be understood, and the technology industry is, is up for finding those answers.

[21:30]

One thing, you see, I think that bodies like techUK, which, obviously they speak for their members, and you are a promotional lobbying operation, is, it's always sunny up there on the uplands where we can get to.

Mhm.

But that's not necessarily so in real life when it comes to the application of this technology, is it?

No indeed. I mean, there are... We can see the vision and we can see where we're heading towards, but yes, our job, and it's everybody's job, right, industry can't do it alone, we have to work with, with partners and, and government, and, if you're looking at the healthcare, there are different parts of that ecosystem that have to come together, and are coming together to find those answers. But yes, there are some really profound issues that we need to deal with. So, trust and confidence around data is, is one. Interoperability systems and services is another. In fact, techUK, we have developed an interoperability charter to, for industry to come together to say, look, we need to, we need to find ways through here. So there are challenges and there are issues that, that need to be deal with. But I think they are recognised, and I think that's, that's a starting point to move forward.

[22:40]

Who should own the data about me?

That's a really interesting question, and I get that a lot. And actually, I think, with all due respect, I think it's the wrong question.

Good. What is the right question?

[laughs] Because I don't... So, that question starts from a concept of data ownership, and we hear that term a lot, and actually we do quite a bit of work here at techUK about data ownership and what it means, and what the term means and how useful it is. Because it means different things to different people. It means different things to you, it means different things to me. It'll mean different things to a lawyer, it'll mean different things to a potential politician. It will mean different things to different people. So what do we actually mean by data ownership? My name is Sue Daley, but there are other Sue Daleys out there. You can, you can google them and see who they are. I don't own my name, but I use it, and it is, you know, linked, and, it is tied to me. Ownership as a term is not helpful in this conversation, because data cannot essentially be owned like an umbrella or a bicycle. It's, it's not the same as owning your house for example. So, for me it's more of a case of, rather than thinking about ownership of data, it's around the, the rights and controls that I have around the data that relates to me. So how can I have the right to say when my data is being used, when it's not being used; to have control about when I can use that data, when, when I can take that data back, when I want that data to be deleted. So to me, it's more around the rights and controls and the framework around the data, and protection and privacy fits into that, rather than owning data itself.

[24:24]

And then... The good news on that is that we have now things like the General Data Protection Regulation, the GDPR, that's come into for, which I think gives you, or is a great step forward in giving you, those kind of rights and controls, the right to be forgotten, data breach notification, things like that. It puts you in, it gives you the power, and it empowers you to make decisions about your data. And I think that's, that's where, that's where I think the data ownership conversation needs to evolve and move to; it's not so much ownership, it's around rights and controls.

[24:57]

Why should people have the right to be forgotten?

[laughs] I think there was... So, the right to be forgotten actually has always really existed. There has always been a right to deletion in data protection law. I'm not a data protection lawyer; public data protection lawyers listening to this screaming. But, there have always been right of deletion. So I think the right to be forgotten is

just an extension of that. It takes it one step further and says, in this world where data, you know, about us can morph and can, can go in, in areas that we, we didn't foresee, we should have a right to have that data removed and deleted.

But if I had made up quotes of people before, and I had managed to have that deleted, and I came and interviewed you, and you afterwards found out that I had made up quotes from people, you would say, 'I should have known that when I was being interviewed.' Don't you think?

Well, I suppose, it, it's got to be looked at in a case by case basis, right?

Mhm.

So, it's... Everything has got to be looked at on a case by case basis. So, I think having the, enshrined in law that that right exists, is, is good, because it helps build that trust and confidence amongst people that they have that, they have that control, they have that ability to make decisions about how their data's being used. But of course, everything has to be dealt with on a case by case basis, and I'm sure if you're being libellous to people, then, then other laws would kick in and would apply then, right? So, case by case.

But in that case, for me, being an interviewer who has made up quotes in the past, and has managed to get that buried, because I want it forgotten, what is that case? Should you know, as the person who is being interviewed by me, that that's what I have done in the past?

So, that's an interesting question, and, I think that... [pause] Sorry, I'm pausing.

That's fine. Thinking is good.

[laughs] [pause] I... I think that, where the right to be forgotten applies is where it's data that relates to an individual, so relates to me or relates to you.

Yes.

So, yes I think that, if the, if the quote were about me, so you would say something that I would say, then it would be my information to delete. So actually, again, I'm not a lawyer, but in that situation I'm not sure whether they would even delete it.

Right. But, if it affected my relationship with you, say, as an interviewer and you the interviewee, you might look at me potentially differently...

Mhm.

...as the interviewer, if I had a track record of making up quotes in the past.

Mhm.

But I've managed to get that deleted.

But then that's a question about, where the law begins and ends, right?

Sure. Absolutely.

So, it's a question, the right to be forgotten is a right to deletion of information that relates to me. So, please remove that information that relates to me. So, if it's libellous information, or if it's, it's a quote that is simply not true, and a case by case basis, you can have it deleted. The, the question that you're raising is more the, is it, is it fair, is it moral even, is it ethical? Which brings you on to a wider conversation, which is an, is an interesting one that we're having right now in terms of the kind of digital ethics debate and discussion that's happening in the UK and Europe and around the world of where, where the law takes us, and the law, you know, is the basis, it's the, it's the bedrock of any ethical kind of approach, the law is, is there. But where does the law take us, and are there any gaps or are there any issues that, perhaps we, we couldn't foresee when you were writing those quotes that need to be addressed going forward. Now to me, the law has always got to be the starting point, which is why, even though I'm not a lawyer, I come back to, what does the law say, what does the law say in that context? But in terms of the more, wider ethical and social, or

even legal implications of how data is being used and how, you know, data impacts all of our lives, that's a debate which I think is, is evolving.

[29:08]

We'll come back to the ethics in a bit. You worked on the 3G auction for different clients...

Mm.

...when you were at GJW, Weber Shadwick, Shadwick GJW. Did the, did the vendors pay too much money for those licences?

[laughs] Well, as... It's interesting isn't it, because, preparing for this, thinking back to everything I did, that was a long time ago now, but, 2000, around.

Mm.

And the 3G auction was, definitely raised a lot of, a lot of money. The first time that that had happened, so I think it was unprecedented, no one really knew what was going to happen. And I think, it was an unprecedented event in terms of the, the money that was paid for those licences. But I think, if you see how 3G has, you know, provided those, the ability and that platform and the infrastructure to allow those services to be provided in a way that, you know, now we rely on, and 4G and now we're looking ahead, I think that, it, it set the, the train in course for the, the mobile telephony that we have today.

[30:19]

So you then moved on from being a consultant at GJW into the great CBI, Confederation of British Industry. And you were a senior policy adviser there. That was, that was your post. And you did that for, well, about four years.

Mm.

So, CBI is beginning to think, OK, there's a lot of something about this e stuff. We had better get going on it. And you became central to the development of policy in that area, yes?

Yes, indeed. When I joined CBI, I helped run their e-business council. So if you think about it, a number of traditional companies, from utility companies through retailers, all around the table going, well how do we get our head around what this new technology and IT is going to mean to them? And, yeah, it was a fascinating time, because, Government were also interested in talking to industry about what they saw the future, and, and the CBI therefore provided that conduit between the two. So yeah, a very interesting time.

[31:23]

It seems to me, by looking at your CV, and also what you did later on, or what you're doing now, that you have a great ability to not work from a background of academic understanding, but a very practical approach, of actually getting stuck in and understanding it. Because, with, with all due respect, having a, you know, a BA in American studies [SD laughs], and so on, and history, is lovely, but, what does it tell you about cloud computing et cetera?

Yes.

Where did you get that from?

From talking to industry, talking to people, talking to business leaders, talking to tech experts, talking and listening to what people are seeing in terms of the way their businesses are transforming, the way that technology is being used, talking to technologists about what they see is the future. Just really engaging and asking people questions and understanding how people are seeing these technologies evolving. And then I suppose, being able to be that, that translator between some, sometimes rather technical issues, whether it's, you know, IP addresses or 3G or, and what these technologies can do, and then being able to translate them into a way that an MP or a parliamentary committee, or even a business leader, could understand, in terms of what it could mean for them and, or what it could mean for the country. So

yeah, being that conduit I suppose has been, has been my role, and continues to be my role here at techUK. But, talking to people. I mean, engaging with people, understanding, and then convening people together so that they can have the conversations that they need to move us forward. That, that I suppose is, is where my role is.

Because this year you were voted among the top 100 most influential people on data and analytics, as a practitioner.

Yeah.

100.

I know. That's nice.

The top 100.

[laughs]

And you don't have a degree in computer science, or any of those types of things.

No. But I, I suppose I am... I mean part of my job, whether it was at the CBI or, or now at techUK, is to be out there and to engage with people, bring people together, and talk about what these technologies can do, and the real potential and the vision and, and the opportunities that the UK, whether you're a business or whether you're a public sector or whether you're a consumer, you know, organisation looking at what these technologies could mean and could do for the UK. And I do that via, you know, talking to people, understanding where the future is, understanding where, some of the opportunities and some of the challenges and the barriers. And then, you know, being that conduit to, for the industry, and getting out there and talking about the opportunities.

[34:13]

You then moved out of this world of advising and, and PR and policy analysis and policy development, to the private sector, Symantec.

Mhm.

One of the big IT security companies. Is that how you would describe them?

Absolutely. No... I mean...

OK.

Enterprise, but also, you know, Norton antivirus and things like that.

January 2007. And you became Government Relations Manager for the UK and Ireland. What was that job?

That job was fascinating, because... I joined Symantec here in the UK. They had never had anyone doing that role in the UK before; they had people working over in Brussels. So really starting from scratch to develop a, a strategy of engagement, and getting Symantec's point of view and narrative and messaging and thought leadership out to, to the UK industry and to UK Government and the politicians. So, it was a really great opportunity, brilliant fun, really at, you know, the height of their game in terms of, seeing the online threat environment, how it was evolving, how it was changing. And also the approach that, that we need to be taking to address cybersecurity issues as they evolve, you know, from, from spam all the way up to, you know, kind of, intrusion detection and, and beyond. So, it was a really great learning experience. I was doing cyber security work at CBI anyway, but to go into a firm and understand how the industry is seeing it, how the online threat environment is really happening, and what is happening in, you know, in that kind of online environment that, and how organisations need to prepare and need to protect themselves from, from cyberattack, at a time where I think organisations were understanding the online threat environment but were looking for help and were looking for assistance.

Yes. They didn't really know what to do.

They... They... In some areas they knew, and in other areas they didn't know what was coming down the path. And, I think, a lot of people were going, 'Well we just need a firewall.' Do you remember? 'We just need a firewall. Let's just get some antivirus and we'll be fine.' And my job at Symantec, and Symantec were extremely good at doing this, was, thinking about it as a, not just a technology solution, right. Technology has a role to play, and, even today you would say the same. But it's about technology getting people up to speed, so, skills awareness training of all the organisation, and then getting the right policies and procedures in place, whether that's internally or whether that's looking broader. And it's the three working together which you need to enable, you know, organisations to be protected from attack, but also to prepare for, for what may happen. Because, you know, we were all using and evolving these wonderful new technologies, but so were the cyber criminals at the time, and they continue to do so. So, having that kind of approach, of, yes it's technology, and as a technology provider you would say, 'I've got some wonderful technology for you,' but it's about having the other two as well. And I think that they were, they were ahead of the game on that kind of concept.

[37:16]

That's what, that's, that was their USP, was it, unique selling point? Is that what they brought to the game that was unique for them, do you think?

So I think, that was part of their approach I think which worked extremely well, and I think was needed at that, at the time, and it's still needed today. But, I think, the ability... Symantec had, you know, a large and longstanding view of how the online threat environment were changing. They still publish every year an annual report that looks at how things have evolved, and that, that, you know, legacy information and that understanding about how threats are evolving, I think was part of, of why they were, why they are so good at what they do.

One person who had an antivirus program said that he went to a corporation, and they said, 'No no. You cannot plug your laptop into our mains electrical supply, because you may have a virus on your laptop.'

[laughs] Yeah... I had the same at that time, and, don't get me wrong, there's still awareness raising that needs to be done, right, particularly as threats evolve. But at that time particularly there was a lot of, let's talk about what we mean by botnets, let's talk about what we mean by denial-of-service attacks. I mean when I started at Symantec, denial-of-service attacks, were they in the Computer Misuse Act, were they not? You know, were they covered, were they not? There was a lot of, you know, clarification, as these things were evolving. And it, it evolves, and the online threat environment continues to evolve at pace. So the job is by no means done, but we have to keep, you know, keep talking about and raising awareness about what issues are coming down the line.

By its nature, will the job ever be done? I don't think it will, will it?

Er, no. I think anybody that says, oh there's 100 per cent, we're, you know, 100 per cent cyber secure, there's no such thing as 100 in cybersecurity, as there is in security. And no, I mean, as technologies come more into play, you know, artificial intelligence, machine learning, cyber criminals are also looking to use them as well. So no, I don't think the job will ever be done.

[39:15]

Is it true that the public sector is particularly vulnerable to cybercrime?

No, I... I think that's a, that's a... I think, all organisations are vulnerable to cybercrime if they are not putting in the right, again, technology processes, procedures, and, you know, training and awareness of individuals that they need. I don't think it's, it's an issue just for one sector or industry; I think it's, it's a challenge for everybody.

[39:43]

It seems to me that there is a cultural change going on, which is difficult to achieve, because, what needs to be done is, on the one hand there's a demand for regulation and law, and on the other hand, there's the libertarian root of, particularly social media. Where do you strike the balance?

Yeah, it's an interesting and very timely debate right now. Particularly as, particularly as these companies have really... They are still relatively new, they are still relatively new services and products that are coming through. And, in terms of, when we think about, particularly how long I've been in the industry, you know, they are relatively newcomers. So they're still learning. And we're still learning about the impact that these services and these technologies are having on us as individuals and as a society, and it is a learning process of, of understanding the impact and getting what we need to get right. Obviously the question of, of regulation is a key one at the moment. We've just had the Government's White Paper on online harms published; that raises a number of questions, a number of issues that need to be thought through. And industry is, is part of that conversation, right, we have to be part of that conversation. But I think it's important to be clear about, you know, if you're going to look at that kind of route, be very clear about what you're trying to achieve, how, you know, being, how is it going to be effective, proportionate, risk-based. You know, it's, it's got to be clear in terms of what we're trying to achieve and what we're trying to do. And then that leads you into a conversation of, OK, well, what we're trying to achieve here, to, you know, to address, if there are harms, where there are issues that need to be dealt with, is regulation the answer, or is it... or is regulation the only answer? So, awareness, education, has to be part of that process as well. And that to me isn't a regulatory, that issue, that's a broader societal issue.

[41:41]

Right. Somebody puts out a tweet, 'Should I kill myself or not?' And the majority of people say, 'Yes,' and she does. This happened this week, didn't it.

I think there was a, that example was raised, yes, in a, in a parliamentary committee. So I, there is... I mean, it's heartbreaking, right, and it's, it's an awful, awful situation, and raises a lot of questions and issues which I think the Online White Paper is trying to explore. It's a really really important debate, and we, we need to have it, and, you know, we, we are having it, which is good. I think, if you look at where technology could help though, could provide some, not answers but help and assistance in this, is around, you know, AI and machine learning. So, that ability to spot where these things are happening using, you know, if it's voice, using, you know, natural language processing, or if it's images, using computer imagery, or, those

artificial intelligence tools and technologies that are coming through that could actually really, if you apply them, could really help to identify these issues quicker than perhaps even a human could. I think, there are, there are some examples out there of where technology that's coming through, right, could really, could really help to address those issues, help people when they need that help.

[43:02]

And yet, nasty things are sent by Royal Mail with actual stamps on them.

Yes.

We wouldn't exactly go back and say, 'Well we can't have Royal Mail, because, nasty things are going to come through.'

Well that's an interesting, that's an interesting point, because, whatever we do, you know, how do we square the offline and the online world? So whatever you do around online harms, how is that squared away, or how is that vis-à-vis the offline world? So yes, absolutely, you know, it's got to be balanced, and it's got to be proportionate I think, whatever happens next. But, it's, it's an important debate, an important discussion that we're having here in the UK, and it's right that we're having it.

[43:44]

The Twitters and the Facebooks of this world insist that they are platforms; and others say, no, you are publishers.

Mhm.

What does Sue Daley think?

[laughs] I... I think that, it's a question that's, it's not a new question, right, it's a question that's been around for a very long time, thinking back to the e-Commerce Directive and things like that, it's a conversation that's happened for a while. And I think, it's, why we're having it again now is reflective of why those services and those

products have evolved, and have, have grown up really. So, it's, it's right to have that conversation. I, I don't think it's a clear-cut one or, one or the other though. There may be services, you know, can you, can you paint everyone with the same brush? One online service be can be very different from another online service. So just to say, right, you're all one or t'other now, northern root coming through, I don't think is, is right either. It's got to be, got to be clear, the scope has got to be clear of what you are talking about when you are talking about a publisher and a platform. And therefore, who fits within which. That to me is, is a complex conversation, and I don't think there's a, there's, you know, you're going to be one or the other, so therefore, how do you determine where the boundaries are? That's, that's the question that needs to be had.

[45:04]

Many of your answers are very nuanced aren't they?

Well, I suppose that's, that's part of my, my job, and part of, of me really. I've always tried to find, and I pride myself on finding that balance, you know, finding that... If, if there are clear answers and clear, clear questions and clear answers, then, then fine, but there's always got to a balance in, in how you look at these issues, particularly in technology, because, technology is evolving. We don't just stop, and, OK, we've done social media, now we move on, or we don't just stop, and we've done cloud, and we, or cyber, and we move on. These technologies are evolving, they're changing and they've moving. So, we have to be reactive and responsive to the changes.

[45:50]

Then... You spent five years at Symantec, yes?

Mhm. About that, yes.

Right. And all of this period of course you were a woman in a technology company.

Yup.

And there aren't lots of them.

Well there, there weren't a lot of women in cyber, that's for sure, when I started, and used to go to meetings and find that there were probably two or three of us. We all knew each other of course, and we're all in the same room at the same time. And yes, to me, at the time, I think when I, particularly when I first started in cybersecurity, it was a, a slight advantage, because people knew you and people recognised you because you were probably likely to be the only woman in the room. So therefore, you know, people knew who I was, and people got to know me really, really quickly. And I think that's, that's... The good news is, it has changed. There are a hell of a lot more women now in, in technology and in my, in my world, in my community, than there ever was, which is brilliant. But...

It's not balanced yet, is it?

Not balanced yet, but we're onto that.

Even on the board of techUK, there are only eight women directors. The vast majority are men.

And I think that reflects the industry as a whole. There is still a lot more to be done, and, yes, absolutely, I would... I do a lot around, you know, I talk on women in, in tech panels. I don't like to do it all the time, because I don't think this is just a women issue, there are diversity issues; it's not just about women, it's about getting everybody from society into technology, particularly if we look at AI and how those technologies are evolving. They, they impact our lives, and will impact our lives in, in so many different ways. The industry that's developing them, so it's not just, you know, me, it's engineers, it's DevOps, it's, everything, data scientists. If that community isn't reflective of society as a whole, across all of society, then, those technologies that impact our lives could have a, you know, a really big impact in the way that we, we weren't expecting. But yes, getting more women into technology and women into the technology industry, and, and keeping the women that we have in the technology industry. So at techUK we've done a lot of work around returners, so, women that may have left the industry, how do we get them back? And that, that

applies to men as well that may have left the industry and come back. But absolutely, we need to get more, more women into tech, that's for sure, and anything I can do to help with that, I'm here.

[48:15]

I was privileged to interview Dame Steve Shirley for the Archives, and she tells, she says, she's got a joke really, she said, why do successful women have flat heads? Why? Because men pat them on the head to say, 'Well done dear.'

[laughs] Well I've never been patted on the head.

[laughs] But...

And, I would...

...you know what I mean.

[laughs] Yes. It's... To me, it's about... So, and in my day-to-day world, it's not about me being a woman in tech; it's me being a, working in tech and a, and helping to lead, you know, the tech industry. So, it's, to me, I approach it in a way of, I'm here, I have, you know, I have a job to do, I have a point of view to take, and it shouldn't matter. But, it is still an issue that, that we need to address.

[49:04]

You left Symantec in October 2012, and your next job was in April 2013. What happened between there?

[laughs] I had an opportunity to take a bit of time out. And, I left Symantec sadly, well, not... I had a brilliant time at Symantec, but I left to travel the world. I had what my mother likes to call my adult gap year, because I never took one, and went off travelling. I had a bit of an adventure. Went off around the world. Just had a bit of time. And then came back to, to re, you know, restart, re-energised.

What did that do for you, that world trip?

It really... Well two things. It really gave me time to reflect on everything that I had done, and what I wanted to do next. And it also gave me that time to just, interact with people in a different way, so, which is always useful, right. So to just go out. I spent a lot of time travelling round New Zealand on a bus, mostly full of 20- and 21-year-olds, so I was definitely the oldest person on the bus. But just had that time to see how other people are seeing the world, how other people are using tech, but also just generally, how other people are seeing the world. I went to Peru and, you know, you go to an area where technology is, isn't really, you know, as widespread as it is here, and you just see how people are living their lives, and interacting and... It just gives you a different perspective of, of where we are as a society, not just here in London or here in England, and that chance to just connect with people in a different way. And, you know, you can talk to 20-year-olds on a bus in New Zealand, you can talk to a room of CEOs in, in, you know, in the City of London. It's, it's the same, just, that, that kind of, meeting and talking to people and getting different views on life.

You don't seem to lack confidence.

[laughs] Is that a compliment? I don't know. I'm... Yeah, I, I... [pause] I've always been very confident I think, and I think that probably comes from my parents. My parents have instilled that in me, to be confident and... Yeah, I'm, I'm always, if I've, if I've got a point of view, if I've got something to say. I think you've got to be confident in life. You've got to be, you know, put yourself out there, and, take, take a chance, sometimes take a break, go and do something, go and, go and have an adventure. That's what life's about, right?

It seems to me that you've probably advised people to do that in their thirties, would you?

[hesitates] Yes, I probably would. Although there are probably CEOs now going, 'Please don't tell them to, to quit.' [RS laughs] I think, having some, a time out, gave me that time to reflect on where, where I had got to, and what I wanted to do next. But also, yeah, I think we need to remember there's a wider world out there, and,

having that time, particularly, you know, we're all engrossed in technology at the moment, and have that time just to interact with people. And I've just come back from, from trekking to Everest base camp with a group of fourteen people I never knew before in my life, and that time to interact with people, and just to, you know, talk about different things, and experience life in a different way, I think is really, is really, it's good for... You know, it's Mental Health Week this week. It's good for your mental health, it's good for your physical health, it's good, it's good to remind ourselves that there's a bigger world out there.

[52:20]

What is the most surprising thing that happened during your trekking months?

[laughs] Surprising thing. [pause] I, I think, how much fitter I got, that was for sure. When you spend a lot of time behind a laptop on a desk you definitely are not, not as fit as you used to be. I think also, just the, the, how far you can go by just, you know, meeting people and, and being open to people, and just being a bit more open and taking a chance.

[52:51]

So after your six months of travelling, you came back, and you joined Virgin Active.

Yeah.

As a gym instructor, and then a personal trainer.

I know.

A bit of a change.

It's a bit of a change. So, fitness has always been part of my, as you can hear from our conversation already, part of my life. And I was, yeah, I trained, and, and got qualifications in my spare time. And when I came back from travelling I looked, you know, around, at policy jobs, and, and... And, I looked at gym jobs as well. And I

thought, do you know what? If I'm ever going to do this, let's, let's try this and give it a go. You never know, you know, in that kind of, if you don't try, you don't know.

Sure.

So, went for, for a job at Virgin Active, and they took me on, a gym instructor, and then I became their female PT in Milton Keynes where, were they were based then. And, you know, interesting change as well, because you, doing PT, you're helping people, you're personal training every day. But at the same time you've got a sales target, and you've got, you know, targets to hit every, every month. So you, you have that kind of, in a way, of, back to that business world. And I became, you know, one of their, I hit my target most months, one of their highest selling personal trainers. So, yeah, it was, it was a, being back to the business world, but also helping people, which was brilliant.

[54:12]

When did you swim the Channel?

I swam the Channel, the English Channel solo, in summer 2016.

Oh right.

Yeah.

So this after you have actually moved here to techUK. Because you moved here after about eighteen months with Virgin Active. Some... What happened in your brain to say, hold on, let's get back into this tech business?

Yeah. My, my brain went, well I'm loving this, and I'm loving helping people. I feel like, you know, intellectually I was missing that kind of stimulation of, of understanding, particularly where industry was going, where business was going. So, started putting, you know, putting my feelers out, and techUK were looking for someone to come and start a new programme around cloud data analytics, at the time big data and data analytics. So, yeah, I re-joined techUK. And actually, we have a

thing here where you, in your first staff meeting you have to stand up and say something that people wouldn't know about you. So my, my thing was, oh I'm, you know, Sue Daley, and I'm preparing, you know, I'm training to swim the English Channel. And, that just floored everybody. So, I don't think people hear that every day. [laughs]

No they don't. No. I'm impressed to be allowed to interview someone who has actually done that.

[laughs]

How was that, physically and mentally?

Hard. The training is hard, but, on the day itself, a great support from my colleagues here. They, they watched me all the way through the day. It took me 23 hours and 26 minutes I think it was to swim, which is longer than normal, because I got caught in a lot of currents. So, I started on the Monday morning, and then I finished on the Tuesday morning. So it was a...

This wasn't continuous?

Yes, continuous. Continuous swimming. You can't stop, you can't touch the boat, they can't touch you. So, you just get in at Dover, and then you...

Continuous?

You keep going until you get to France. Yeah. So, swimming the...

So, no sleep?

No.

You're allowed to have, presumably, nutrition and stimulants and so on?

Yeah, they feed you from... So I had a great crew on my boat who, I couldn't have done it without them. They throw you... You can't touch them, so it's all, drink, it's fluids, in a bottle on a piece of string. Or, you'll have a little cup on a piece of string that might have, like, a half a banana in it or something. But no. And then it's just a matter of getting that down, and keeping going.

Good Lord. And you have to be greased up, do you, or something? [SD laughs] This is a, the picture we've got of...

[laughs] Yes.

...people with grease fat wandering into this...

Not so much any more. It's just Vaseline to, to help with any, because of the salt water, any chaffing. But, yeah, it was, amazing day. But, swimming the English Channel is, and people say this and I, I believe them, it's like, 20 per cent physical and 80 per cent mental. So physically, your body can keep going, believe it or not you can just, it will just find a way, it's a wonderful machine, to keep going. But mentally, that mental capacity of, I'm, you know, head down, one arm in front of the other, and you just keep going until you get to France, and you just keep going, and that dogged determination of, I'm, I'm not stopping. They might have to pull me out of the water, but I'm not stopping, was the thing that got, got me to France.

Wow. And where did you get to in France?

Just down from, oh, where is it? It's this little beach town that is down the coast from Calais.

Right. OK. And what was the... I imagine, looking from the ferries going across and so on, that it's, it's really quite messy there, because, there's not only a lot of shipping, but there's a lot of waste coming out of the ships, and...

Yeah.

...pollution, and all the rest of it.

Yeah.

Not very nice environment. Is that right?

Busiest... Yeah, busiest shipping late in the world. Those ferries do, do get...

It is the biggest is it?

It is, it's the biggest. It gets... And the busiest, it gets very hairy, particularly at night. But you have a pilot boat alongside you that, it's their job to protect you.

Right.

But yeah, the water is not exactly very clean and very nice, but, [laughs] it's a means to an end, right? There are a lot of, a lot of debris in there, there's a lot of jellyfish in there. But at the same time you just have to keep going.

Once you got on to land, which you had to... You, you can't let anybody help you onto land I imagine.

No. No you have to clear the water.

So, you have to clear the water.

Yes.

What did you then do, right after you had cleared the water?

I... I, I had to... I stood there, and I had this monumental kind of, oh my God, I've done it.

Yes.

And then... Because people do swim back, you can do a, what they call a two-way. And I stood on the beach, and I was looking out to England, and thinking, I'm so glad I don't have to swim back. [both laugh] I didn't have that urge in me to kind of go, do you know what, I'll swim back. But, it took a few days for it to sink in, and I came back to work the next day and everyone...

The next day?

The next day I came back to work. And, it took me a few days to, to sink in what I had done. And sometimes I don't believe I, I even did it, but, but it did actually happen. [laughs]

I bet you slept well that night.

No I didn't.

You didn't?

I didn't sleep well for a few days. I think I had so much adrenalin and so much sugar in me that...

Ah.

No, I was, I was, yeah, I didn't sleep for a few days. [laughs]

[59:23]

Wow What's that got to do with IT?

[laughs] Well not, not so much IT, although I did have a brilliant GPS tracker, so you can go on, on the website and see my track and see how... But... And that's how everyone followed me, which was brilliant.

Right.

But to me, what, what I take from the Channel is that determination.

Right.

It's that mental strength, which I think has stayed, well I must have had to do it, but I think has stayed with me. So that, that kind of focus and... If there is something you want to do in life, whether it's in business or whether it's in technology, whether it's in life, if you believe and you prepare and you train, and you believe what you're doing is right, and you have that mental strength to do it, then anything is possible.

[1:00:11]

Quite early on when you were here at techUK, having joined, you helped put together submissions to the House of Commons select committee on big data...

Yeah.

...for 2015, that was your first year. What base, what were your main points then, in 2015?

Mm. I think that was one of the first select committees that looked at the opportunities and what big data as we... We don't use the term big data as much any more, it's just data, but, what it could really mean. And a big message was that, the UK's in a good position, you know, the UK is, is in a good position in terms of how companies and organisations are using data, how they are using the data they've collected over many many years to provide, you know, more personalised goods and services to enterprises and also to individuals, and how, the opportunities, if we could harness and unlock the power of data, particularly in public sector as well as private sector, what it could really mean for the UK if we could really get this right and harness this. And then at the same time, flowing on from that is some of the issues we raised, some of the challenges that we may need to address to do that and to get that right.

[1:01:26]

So, one of the issues being around, and we've already touched on that, kind of trust and confidence around how data is being used, and at the time, you know, we were in the process of reviewing the data protection laws we have across Europe. So, looking at, you know, getting that right, getting the right legal and regulatory framework so we can build trust and confidence that people, that their data is going to be protected and used in the right way. We also raise the digital skills gap that we have in the UK, particularly around data and data scientists. We don't have enough people working in this industry. You know, we, we as an industry are creating more jobs than we can fill, particularly in areas like cybersecurity, but also data and data science. And we've seen, you know, the Government recently, you know, focusing a lot on PhD and master's courses in AI and data science; that's all part of, you know, bringing, making sure we've got the people that we need to address these issues. And also, you know, addressing, making sure organisations understand cybersecurity challenges around data that we've already touched on as well, and getting the right foundations right, and the right infrastructure right, to allow organisations, whether they're public sector or private sector, to, to realise the potential of big data. So opportunities, and to paint that picture in terms of economic growth and productivity, power for social good, so how it could help more responsive public service delivery, and more responsive, or more reactive, or proactive as well, policy recommendations using, you know, what data is telling us. But then also some of the challenges and some of the issues that we need to address to realise that potential.

[1:03:00]

And indeed the UK was a leader in this technology, with companies like Autonomy.

Mhm.

Now owned by a Japanese company.

Mm.

Is that a good or a bad thing, that they're owned by a Japanese company?

I think...

Sorry. Hewlett-Packard.

Sorry?

Hewlett-Packard is owned by a Japanese company.

So this...

Hewlett-Packard owns them.

I mean it's reflective of this, this industry and also this, this sector. So... And actually, data itself. Data is global. Data isn't, data doesn't know borders. And the industry is global. I mean, e-business is really, we were talking about it before, e-marketplaces, or e-commerce, was always... You know, we're used to talking about it as the global marketplace, and I think, this sector and this industry is global, and that's just, you know, reflective of that.

[1:03:43]

So that was your position in 2015. Four years on, what's your position now?

I think...

What really has moved on?

I think that organisations have really understood and realised the potential of big data. Organisations have now, you know, chief data officers, they have chief digital officers that are developing data strategies. We have, we have, the UK Government's looking at digital transmission, and data is very much at the heart of that. The industrial strategy that the Government's put forward, things like the AI sector deal and other sector deals, data is at the heart of that. I think that, people now recognise the potential of what data can do, and the importance of getting that right as well. We've had in terms of progress, GDPR is now in place, we have that as a legal framework to work towards. We are doing more in getting more people to enter the data industry.

There's a lot more that we need to do there. There is still a digital skills gap; we need to make sure that organisations have access to those skills, and talent that they need, particularly as we move forward and we grow. And I think around data security, that companies have upped their game on that as well, probably helped a lot by GDPR but other, and the NIS Directive and others that are coming through. I think, there's a lot of good work that's done. I think the UK is still showing leadership in this area. But things like the digital skills gap as we grow will continue, so we need to keep pace with that. And we need to make sure that that trust and confidence, we build a culture of trust and confidence around data; it's not just about the law, which brings us on to that kind of, wider issues.

[1:05:22]

Do you have any concerns about the impact of AI on the volume, the quality and the locations of jobs?

This is a question we, we get a lot. Because while we talk about the opportunities of AI, and they're huge, right, and this is, it's an area that, we're focusing a lot in the UK because of that potential, at the same time it, it's very exciting to us, to me; I'm sure it is exciting to others. But it can also be quite fearful to others, and we need to reflect that, we need to understand that. And one of the issues is raised about the nature of jobs and the impact on jobs, and the impact on workers and what this will mean. And, there are so many reports out there, right, I'm not even going try and quote figures and stats, because, one report will say one and one report will say the other. There are loads of reports out there that say, this is the number of jobs that are going to be impacted and potentially lost, but then there are reports out there that say, these are the potential number of jobs that will be created, new jobs that will be created, through more AI and automation. The reality is, and the answer is, I think, from, from my point of view, is that, the nature of many jobs are going to change. It's just the reality. Jobs are going to change. And the way that the, the kind of, more automation, more repetitive work could, could be taken over by, just as it has been with robotic process automation and AI, more, more, different jobs, or, or different quality of jobs are going to come through that allow people to perhaps do things in a different way. What we need to do is make sure that we're preparing for that future, and we need to kind of, prepare for that future now. So, if the nature and the quality

of the jobs are going to change for people, how do we make sure people have the right skills, the right training, the right, how do we make sure kids coming through are going to be taught in the right way, to thrive in this new world?

[1:07:15]

Someone said to me, this isn't really AI; it's just some moderately clever software that's text-based.

Mm.

What's your response to that?

[laughs] Well then that, that's always the question about, well what do you mean by AI, right?

Indeed.

At the moment, I think if you look at where we are, it's, it's very much a, a bit of both really actually.

Right.

You have that intelligence software, you have that robotic process automation, you know, that kind of, automation of, of software and code that allows, you know, that kind of more, that more clear-cut piece of work to be done by a, by a computer program. And then if you look at where we are with AI, and actually, it's machine learning really now, it's, supervised and unsupervised machine learning is really where, where people are focusing on. It is that, how can that machine learn from the data, how can it, how can it mimic human thinking processes to determine, to make a determination about, about what that data is telling you, in a much more intelligent way than, say, just a piece of code's been told to do, or, you know, x equals y, therefore, da-da-da-da. So it's, it's that more intelligent machine learning ability for machines, or, or computer programs, to learn from data and make determinations from data which is the new ground-breaking. And then you look at what we're doing

around deep learning, that's, you know, really, OK, much more at the kind of, experimental area, but coming through, yes, we've had the, the DeepMind AlphaGo, but, there's other, other ground-breaking work that's happening in healthcare and other areas where deep, you know, deep learning will really allow that more intelligent, or increasingly intelligent AI to come through.

[1:08:58]

It's always been on the brink of really happening, AI, hasn't it?

It's been round for a very long time. Yeah. I mean I think the term AI was first used around the 1950s, and a lot of people of a certain age are sitting there going, 'I've been doing this for years Sue,' and I completely understand that. I think, the difference where we are now is, is really, well, really, we have the computer, computing power, we have the power to really realise this potential. We have the data, I mean, AI is nothing, or an algorithm is nothing without data, right, it's just piece of code, to really realise what this could do. And we now have the use cases and perhaps the computing infrastructure to allow AI to really, or the, the realisation of AI, to become true.

[1:09:44]

You took part in, and in fact I think initiated, the first digital ethics summit in the UK.

Yes, here at techUK.

Right. And, I think digital ethics may well be alongside journalism ethics as an oxymoron [both laugh], but, why can't we use just the three rules of Asimov, and instead of have robot, put AI in there?

Ah that's an interesting one. And actually, there's quite a few interesting blogs out there about whether those three are enough now or whether we actually even need more. This is a really interesting conversation and debate which, we were part of a number of different conversations that were happening around how technologies are changing, not just industry but the way that we all live and the way that society is going to, going to evolve, particularly around data, and it all comes back to data. So,

the Royal Society did a brilliant paper on data governance in the twenty-first century and where that was going, and raised the kind of, the more, OK, we have the legal and regulatory issues and foundations, but what about the more societal and social issues and ethical issues that these more intelligent automated systems and machines will, will raise, and are raising, and how do we reflect that and how do we understand that? And there were a number of different conversations happening, and one of my roles here at techUK, and one of techUK's roles, is to bring that convenor, is to bring people together. So that's why we held the Digital Ethics Summit, to really bring industry, academia, policymakers, civil society, really complex ecosystem that needs to come together, to, really at the time when we started this, to identify what we really mean by digital ethics. What are we really talking about here? And what does the future lie in terms of what industry may need to do, what Government may need to do, what, what we need to do to move this conversation forward? But by moving it forward, we need to really understand what we mean by digital ethics. Is it, is it that, we're talking about, how these systems are developed, how they are designed, how are they accountable, how are they transparent? Are decisions made by, you know, increasingly automated machines, are they challengeable, are they understandable by you and I, or even the people working in them? And, these are questions that we know are being raised, not just by the industry but by individuals. So, how can we build that trust and confidence around these new technologies if we're unable to answer those questions? I think that's where the digital ethics debate really is, is powerful and is helpful to, to show that, you know, we are recognising that this is an issue, that there are questions that need to be addressed, but also that, that industry and academia and everybody that's looking at these issues need to come together to find those answers.

[1:12:38]

Whatever one's statements on digital ethics, we're always going to have the likes of, the naughty boys like Cambridge Analytica, aren't we? It takes laws to do this, doesn't it, not ethics?

I think it takes, it takes laws to provide that foundation, of what, you know, what you should do and what you shouldn't do, but then, laws gives you that foundation, but it's also how you operationalise those laws, how you apply them and how you use

them. And I think, laws alone as well need to, to keep pace with, with how things are evolving, and how things are changing. So I think the digital ethics debate gives you a, an opportunity to look at, OK, where are we in terms of the law, where are we in terms of the legal infrastructure? But then how are these tools and technologies being used by society, and are we, you know, are there any gaps, is there anything we need to be addressing, that the law isn't addressing? So it's, to, to our conversation before, it's not a tick box exercise. This is never going to be a tick box exercise and we can all move on. It's going to have to evolve as technology evolves. And this isn't just about AI remember. The Digital Ethics Summit last year, because we've, we've held it every year since, really focused on, you know, what's, what's the impact of people's lives of this conversation, and how is this really going to make a practical difference? And actually, this isn't just about AI; what about other technologies, what about blockchain, and what about Internet of Things, what about biometrics, and the ethical issues that are raised by other technologies? So, that's something we're exploring here at techUK right now.

[1:14:08]

One of the things that is evident from your contribution to the Archives so far is your view of this as a, as a global technology and global opportunities, and yet we have Brexit.

[laughs]

So what will be the impact of Brexit on UK innovation, IT innovation and employment?

That's a... So, the day after Brexit, the day after the announcement happened, I, myself and a number of colleagues, we started talking to industry, as you would expect. And I think I spent about two weeks on the phone talking to, talking to industry leaders and saying, OK, how are you feeling? It's a bit of a therapy session actually for them and for me. Because it's not something that industry wanted, you know, very clearly, from, from the beginning. And it was very clear from the conversations that, a couple of key issues came up in terms of, you know, the impact of what could happen next on our industry. And from my, from my kind of, view of

the world here, so, access to talent is really important, and we've got to get that right. So, whatever happens next, we need to make sure that we have, you know, a smart immigration approach that allows companies to get access to the talent that they need to thrive and grow, if we don't have it here, or while we build that talent pool here. We need to get that right. And also this industry is, is global, you're absolutely right, so how do we make sure that we have, we can keep the talent here that we need and that we love, and that we want to have here? Yes, innovation comes, a lot of innovation has come from EU funding, and we've welcomed the Government announcements about matching the EU funding and it's coming through, but what are we going to do long-term in that? That's really important, particularly for scale-ups and, start-ups and scale-ups in the UK. So announcements about, you know, matching the funding and the funding will be there is brilliant, but how do we progress and move forward? And then the third one, which is the most important one to me, and to the industry that I look after, is the free flow of data. So how do we get that right? The UK and Europe rely on, you know, the ability of data to flow seamlessly across the Channel, or underneath the Channel maybe, to realise the potential of, you know, all these innovative products and services that we rely on today, but we're going to rely on in the future. Driverless cars, you know, if you take your driverless car on the Channel maybe or on a ferry and it comes off the other end, and the data can't flow and the data can't be processed on the other side of the Channel, what, would your car just simply stop, or could your data... If you want to book that hotel room in Paris, will that data be able to go through for the transaction? Allowing seamless free flow of data after Brexit is really key to this industry. And actually key, not just to the tech industry, but every industry, whether it's retail, tourism, logistics, automotive.

You could stop lorries at Dover and search them, but, it's very difficult to stop stuff coming through a fibre optic...

And it's both ways, right? It's just as important getting this right to the EU as it is to the UK. So we've been working really hard ever since Brexit to, to make the point around why the free flow of data and ensuring the free flow of data can continue is so important after Brexit. And, you know, we believe that, gaining an adequacy agreement to allow that to happen is really really important. And that's been

recognised by Government, which is very welcome, and it's been recognised by everybody that this is a really important, top issue. And, hopeful that, that that will happen as we move forward.

[1:17:45]

What's the biggest mistake you've made in your career?

One of the biggest mistakes I made in my career was not trusting my gut. I always believe in trusting your gut. So I, I was working with a colleague, and asking some advice, and, you know, how they saw the world, and, what we should say in terms of challenges and issues in a particular area. And, I got very direct feedback, and, I took it forward, and I put that as our position. And actually, the feedback was biased, and wasn't reflective of, of other stakeholders and of other people in that area, reflections of what was really happening. And I had a sense that that might be it, but I didn't trust my gut. And I didn't follow it up, and I, I should have done, because whatever you do as a, particularly if you're representing a body, or you're representing a, an industry, has got to be reflective of everybody's, my nuanced approach as you say. That's important. You've got to be reflective of everyone's views and not just get, get biased by, by one. So always trust your gut.

[1:18:53]

And your gut really is your accumulated experience, isn't it?

I think so. Over the years, I think... It was interesting just, even being asked to do this, and to kind of, prepare my thinking for this, of how much change I've seen and how much difference the, how different the industry is now to how it was, in some ways, but in other ways it's not. It's a bit sad we've, I've lost so many people that I used to engage with and talk to, because they've retired or, you know, sadly are no longer with us. Jeremy Beale, who was Head of e-Business at CBI sadly left, died last year, and he was a huge, you know, influential kind of leader and thinker about how these technologies were going to evolve. And, yeah, it's, it's a, it's been a wonderful journey, which I hope continues. [laughs]

Sue Daley, swimmer of the English Channel, thank you very much for your contribution to the Archives of IT.

Thank you very much.

[End of Interview]