Naomi Climer CBE

Interviewed by

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At the

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Kindly provided by The Worshipful Company of Information Technologists

OK, we are running. It's got peep on that, and we're showing time going past. OK.

It's the 17th of October 2018. I'm Kerri Mansfield, independent IT consultant. Today I'm at the Hall of the Worshipful Company of Information Technologists, and I'm talking to Naomi Climer, CBE, FReng, FIET, Fellow and Trustee of the Royal Academy of Engineering, and previously both President and Trustee of the Institution of Engineering and Technology. Winner of numerous awards. Good morning.

Good morning.

Naomi, I think it's called a glittering career. But, where did it all start? Your public bio lists all your achievements, so let's dig a little bit behind those, and find out how they came about. What was your childhood like?

So, I've got a brother and a sister, and, I guess I grew up in a, a sort of, fairly mainstream, you know, standard family. Well of course it feels standard to me. And, my dad's an engineer; my mum was a stay-at-home mum, although an incredible, inspiring woman, hugely strong and, quite a feminist, so that was a big influence. And, my brother, who has ended up in IT, was quite a kind of geeky, geeky guy. My sister super sociable. And so, you know how kids try and find their, their spot.

Yes.

And, so I was kind of, fearfully tomboyish, and, my sister was very girly, so I kind of went to the other extreme so that I could easily be differentiated from her. And… And, we were all quite outdoors-y, actually. And, I didn't… I mean I certainly didn't realise that I had a bent for things technical per se; it was a, it was a classic, given people of my generation, it was a classic where the, you know, my brother was expected to be technical and was encouraged to fix things and mend things and take things apart, and we were not. And so, it's only in retrospect, looking back, you know, that I would do things like, take the lawnmower apart and fix it as a teenager, and just without thinking about it, it just needed fixing so I did it kind of thing. And at the time, I didn't really think about it. And I didn't particularly get any

encouragement to do it. But, but looking back on it, I realise that I always had a bit of an urge to, [laughs] tinker.

You were passionate about tinkering from an early age.

Yes. Yes, I was interested in how things worked, that's for sure. And, you know, likewise, we weren't exactly early adopters of any tech; we were mostly outdoors, sailing and cycling and, doing things like that. But, there was a BBC Micro in the house which mostly my brother and father swarmed all over, but, I got to play with that too.

[02:51]
And about school. You went to a well-established school, quite an old school, Gainsborough High School in Lincolnshire.

Mhm.

How did that contribute to your interest in what we now call STEM subjects?

Yeah, I think, I was horrified. As a tomboy… We moved up to Lincolnshire when I was eleven, so as it happens, just the moment I was going from primary to secondary school, and, and this was the school, I had passed my Eleven Plus so this was the school that I would go to. And it was an all-girls school, and I was appalled, the very idea of being forced to hang out with girls. But I'm so glad, I'm so lucky that it worked out that way, because the nice thing about girls' schools is that, they cover all the subjects, and so there are girls that do physics, and girls that do sciences, because that's just in the spread. And I, I'm pretty sort of, open to influence, and so I suspect if I had been in a mixed school I would have succumbed to kind of the, the pressures and influences that, that discourage girls, and appear to still be doing that today, from taking STEM subjects. I suspect I would have, because I was good at languages and good at other stuff too, I was good at music, and so I probably would have just taken a different direction. But thank goodness, being in an all-girls school, I , I shone at sciences, and so that was an easy path to follow without really realising that that was odd in any way. So, that, that really helped. And actually, you know, I loved it, I

loved hanging out with girls. It took a lot of the, the pressures off that I, you know, dealt with a bit later when I was probably better equipped to do it.

[04:22]
Yeah. And, after school, you went to Imperial College London.

Mhm.

Which I think, when I looked it up, is ranked ninth in the world. That must have been interesting to get into.

Incredible.

And then you gained a joint degree in chemistry and management science.

Mm.

That sounds a very interesting subject. What led you to choose them?

Yeah. So, I chose chemistry because it was the subject I found hardest. I took maths, physics, chemistry A Levels, and, and chemistry was the one I kind of, you know, I had to wrestle with a bit. And, and so, somewhat, you know, in a contrary mode, that kind of interested me. And so, I took that. And I, I can't remember if I originally went to do the management science module or whether I picked that up later, but, I suspect it was, I suspect, if I'm honest, it was driven by laziness or something at the time, because, it felt quite cushy, management science, which, I'm glad I did it, because in retrospect it was profound, but I found it reasonably intuitive. It all seemed fairly straightforward, but actually, a bunch of the kind of techniques and methodologies that I learnt in that management science have served me my entire life, and so it was a really good foundation. But, you know, it kept me out of the lab, and some nice people were taking it.

Yes? That's brilliant.

But, I mean it's embarrassing, because those are not good academic reasons for doing it. I'm sure Imperial College would be appalled. But it, it served me really well. But if I'm honest, my entire career, which I can make look very structured and well-planned and, and you called it glittering, but it's, it's a kind of chaotic stumble from one thing to the next that turned out rather well for me. But… And I think that the, the choice of degree, I loved it, absolutely loved it. Loved the subject, enjoyed the management science bit, you know, and then when I finished, decided, that was enough of that. [laughs]

[06:11]
Well yes, you then went, went into broadcasting and communications.

Yes.

That's, that's a bit of a segue. How did you enter that world?

Yeah. Yeah, I think it drove my parents insane, because, after uni I didn't know what I wanted to do, except I was pretty sure it wasn't chemistry, and, and so I sort of, applied for a few grad programmes and didn't get on them, and, and so I ended up, I worked in a shop for kind of, almost a year. And, and I had to lie about my qualifications to get the job. I had to downgrade them. And so I, I changed my CV to have like, three O Levels or something, and got myself a job in a shop. Because I kept getting turned down for shop work as well.

Yes.

And, and then once I was in the shop, serving in the lingerie department, it was a department store, I, I noticed that the guys who drove the delivery van were paid more, and seemed to have a much more fun time. My post happened to be right next to the kind of, dispatch area. And so, when one of them left I went and challenged the manager of the shop to give me the job, which was unheard of, they'd never had a woman do that before. But I was into rock climbing, I was super strong, I was very fit. And, and so they, they did. And, and so that was great, I spent six months of the year at that department store, driving a dispatch van, doing deliveries, and, and stuff

like that. So, it was, it was a really interesting year. I think everyone should spend some time in retail, just dealing with people. When I went in there, I was going to be the best shop worker ever. Whatever I do, I like to do it well. And, you know, and it annoys me when you go into a shop and somebody can barely bother to kind of, serve you, you know, is kind of, clearly distracted, and not paying attention. I was going to be, you know, full-on attention.

Yes.

But actually, you know, people are pretty horrible. [both laugh] They're rude, they're unpleasant. And, and so, I like to think I was never terrible, and I was never rude, but actually, my, my kind of motivation to just be fantastically attentive and lovely at all times was tested sorely, and it's, it taught me a lot about people.
[08:08]
So anyway, actually, my parents were wondering what on earth I was doing, what, what all of that education had been for. But it was a kind of good, good year to have spent. And the BBC thing came about because, my sister spotted it actually, they advertised in the paper, and it was a positive action campaign where they were trying to get more women into engineering. And so, they were taking… Usually for their engineers you had to have an electronic engineering degree, and, they were advertising for people with sort of, relevant, you know, science degrees, and they would put you through almost like a graduate apprenticeship.

OK.

And, and so I applied for that, and, and got in. Which was, was great. You know, that's… Frankly… You see so many people who graduate and just really struggle to get that first professional job, and actually that's, it's hugely, you know, it's quite a moment in life where the ones that manage to get a good graduate programme kind of, you know, launch off from there, and others who just really struggle, end up kind of stuck in something they're less keen to do. So I was really, I was lucky, I was really lucky, I didn't see that coming, and, fell into it, [laughs] as usual. And yet, it was fabulous, the moment I got there I just knew that this was what I wanted to be doing.

[09:28]
And you were there for quite a while.

Yes.

And, in 2014 you were awarded the International Association of Broadcast Manufacturers Industry Woman of the Year. What happened in between those times?

Yeah. So, I mean, again it's, it's a lot patchier than it looks, [laughs] than it looks on my, on my CV. I was, I was at the Beeb for kind of, I don't know, three or four years, as a trainee and, you know, I qualified as a, a proper BBC engineer. And in fact then I, I bunked off for a few years, pursuing, well not pursuing a man, I married a man, and that took me off to the island of Guernsey. And, so I had to quit the BBC job, and… And then I spent a, a couple of years… Again, lucky, lucky me, just at that moment Guernsey decided to get an independent local radio station, and they have a policy there where if there's someone qualified on the island to do a job, they get priority over shipping someone in. So, so I was able to become the engineer for that independent local radio station. And so, I was part of the licence application, of building the thing, and then, being the chief engineer for it, which was fabulous, again, fabulous experience. And actually, taught me a lot in terms of… You know, at the BBC I had learnt the BBC way of doing things, you know, with actually, despite what they continue to tell us, you know, pretty good resources, and, and actually learning to do things on much more of a shoestring, and in a different kind of way, again was really good for me. So I did that for a few years.
[11:02]
And then when I came back to the UK, I managed to get back into the BBC, into the BBC World Service, which is a lovely place to work. And so, so it wasn't a continuous time at the BBC, but, I, I spent two or three years in World Service training, kind of running the engineering and IT and operations training. And, and that's, again that's a fab thing. Everyone should do this as well. Because it's, you know, it was an accident, it was the job that was going and I got the job. But, a) it was my first management role, so I actually had a team to manage, and I made every mistake in the book, but a really great grounding with some wonderful people who were very sympathetic to my incompetence that slowly grew into competence. But,

also I think, just… You know, I had learnt to fix sound desks, and, and you know, maintain studios, and, you know, I knew how to set up a sat phone, and all those kinds of things. But when I was training journalists, or working with journalists, you know, I, I'd take them up onto the roof of the World Service and show them how to set up a satellite phone, which is much easier these days, but then you had to kind of, align it to the satellite, and fiddle about, and…

Yes. Yeah.

And, you know, and the kinds of questions they were asking me, you know, a) these are not necessarily tech savvy people, but b), you know, they'd say, 'Well what if I'm being bombed, you know, what if I'm under fire? What if I'm in the jungle and I can't see the sky?' And, just a whole bunch of things like that, not even all those extreme ones, where you just realise that, I've got my nice textbook [laughs] understanding of how the stuff works, but actually, these guys are dealing with it in really really different situations, and that actually, if it's not dead easy to use, when they're under the kinds of pressures that they're under, then you, you've got that seriously wrong. So that was really good, again, a really good education for me. [12:54]
And then after that I went off to BBC News, where, you know, I was across TV, radio and online. And, and that was at a time that we were beginning to go digital, and so, we were beginning to do things like, nonlinear editing in the audio, in the radio world, so, you know, on laptops instead of on tape machines and things. So, that was an interesting transition, it was interesting technically, but interesting from a kind of human behaviour point of view as well.

Yes.

And again, I went there with this head full of a better understanding of just the things that these people were having to deal with on top of this mammoth change. It was around that time, it's kind of obvious if you're beginning to use IT to do programme making, that it begins to be more and more realistic for you to do it yourself, and, and actually, you know, you didn't used to; if you were, if you were a journalist or a presenter, then, somebody else did all that stuff. And…

Yes.

So a bunch of kind of, behavioural things. But some of the nice things that came out, like with, with getting people to do, including TV people, to do their own laptop editing out in the field, that originally, they were kind of horrified that it was yet something else they had to cope with, but what they got very good at was creating the un-editable package. So, one of their frustrations in the field was that they would send in this fabulous piece, and then someone in headquarters would fiddle about with it, and, and lose the edge of what they thought they wanted to say. And they would specialise in creating something that you just couldn't… There was nowhere to cut it. And if they got that right, then it would go out exactly as they wanted it. And so they realised there was benefit to doing it themselves.

Yes.

And, and so, it was nice to see things like that happen as people got their heads round actually how empowering the technology could be.

[14:43]
Yes, absolutely. So, once you had won that award, what changed, as a result of that? Did anything change? Bringing new opportunities?

No. No, I mean, it… I mean it was lovely to win that award. I think I was at Sony by the time I won that award, which I did… After the BBC I went to ITV, ITV Digital, which was a, you know, rollercoaster of euphoria as we built it up, and then, despair as it closed down. But again, incredible learning experience. And then after that to Sony. And, yeah, I mean that award, it was a new award, and so… It's difficult with, it's a difficult subject in a way, but, it, it almost, you know, as they… [laughs] As we noticed at the awards dinner, that this category was on the list, it was just kind of obvious I was going to win it, because, er, I was the woman. [both laugh] And, you know, I, I don't wish to… You know, I'm proud of the things I've achieved, and it's lovely to be awarded for them, but actually, you know, you've got to start somewhere with an award like that. And so, I did feel, to be honest, I had that imposter syndrome

where I felt that it was lovely to be recognised and awarded, but there's plenty of guys who have achieved the same sorts of things, and… But, I am a bit fan of awards for minorities and creating role models and pulling these things out. And so I do think it was important. And I, you know, I commend the IABM for, for setting that up, and you know, they've awarded quite a few since then, which is really, is really great.

It's really nice.

Yeah.

[16:22]
You're quoted, coming on from that, as having a strong interest in diversity issues.

Mm.

And in particular, quite an active campaigner for gender diversity. How successful has that been in the engineering profession?

Yeah, it's… I mean, [laughs] it's frustrating. I mean, if you look at the stats, not very, I think it's safe to say. When I started out at the Beeb, there were two of us in my intake of, you know, 100 engineers, two of us women. And, it's, you know, the percentages haven't improved. We're at about ten per cent women in engineering. It's slightly better if you, if you talk about women in IT, although I think, IT and engineering are pretty blurred.

It's about seventeen per cent in IT.

Yeah. Yeah. So…

Down from 25. Yeah.

Oh dear, that's depressing isn't it. So it's been frustrating, because I did think that, you know, kind of, cultural changes, as well as, you know, better efforts, would have fixed it by now. And, and so, I am frustrated to say that although I think I have made

a difference to some individuals, by giving them confidence and empowering them, being a role model and all those things, actually, I mean the statistics are moving in the right direction, but my goodness, it's slow. And so, it, it was frustrating because, people often say, you know, what's the one thing we could do? And the point is, there isn't one thing, because we'd have done it.

Yes.

It's lots of little things that start right at, you know, at birth. And it needs to be concerted and consistent, and… And so, all we can do is keep bashing away at it. But actually, I read a book, the Royal Society science book of the year this year I believe, by Cordelia Fine called *Testosterone Rex*, which is kind of about the science behind whether testosterone does or doesn't kind of drive the behaviour and explain, you know, why there is this fundamental difference between the outcomes for men and women. And, and it basically, the point of the book is to kind of, debunk that, and say, actually, the science doesn't support that. But the conclusion at the end of the book was, you know, that, that we've got such a big societal shift to make, you know, we need everything from the *Daily Mail* and the, you know, the, the mainstream media, to parents, to teachers, to be looking at this differently, to make a difference. And I confess I catch myself, you know, treating girls and boys differently, and having different expectations of girls and boys, because that's the world I grew up in. And so, it's almost like we need a national culture change to crack this. It's maddening because other countries do it much better than we do. And I, I fundamentally don't see any reason why women shouldn't thrive in IT or engineering. And so, it's annoying, and I can't stop fighting for it. But, I think, I think we've got a way to go, unfortunately.

[19:17]
Yes. What values and knowledge and behaviours of yours have been particularly useful in campaigns like this?

[pause] Knowledge and values. I mean I think, knowledge-wise, it's… Maybe it's knowledge, maybe it's experience, but I think, just the experience of growing up in a, in a, no more sexist than anybody else's, but sexist household, because those were the

values of the time, but realising that actually I can, I can do what I like, has been a helpful experience. Having a feminist, inspiring mother, has also been super helpful. In terms of values, sort of, honesty, integrity and energy are amongst my personal values, and energy is definitely required, because it is kind of, [laughs] relentless effort. But the sort of honesty, integrity, I do feel have served well in that, it can be quite a challenging message, talking about diversity, and one of the things I experienced when I was at Sony, and I had a lot of staff, and I talked a lot about diversity, which went down terribly well with the women and the other minorities, but actually, you know, kind of, realised somewhat obviously that the men were beginning to feel a bit threatened by it, you know, that the word in the corridors was that none of the guys would ever get promoted while I was in charge, kind of thing. Which, which is not what happened, just for the record. But, it's kind of, it, it's understandable actually. I can see why, that it's quite a threatening message. And so, being at least honest, and being known for being honest, and having integrity, makes that better where people understand that you will continue to do the right thing, to pick the right person for the job, and that you, you haven't got a hidden agenda, I think is helpful, if you are trying, you know, if you've got any kind of controversial message, it's helpful if you've got a reputation for being decent. And so that has served me well I think.

[21:22]
Yes. So, some of your time with Sony you were in California?

Yeah.

So Guernsey, California. How did that differ? [both laugh]

Yeah. No, I was sent out to California to run a cloud start-up for Sony, which, I mean to be honest, was delicious, because the whole point of cloud is, it's local independent. So, it was rather delightful to be posted to California when I probably could have done it from the UK. But, I mean, the initial core customers were in California, so it was, it did make sense. But, when I went out there, I, I kind of thought, well how different can the US culture be? You know, answer, really very different. And of course, one of the things I learnt living out there is that, there isn't

some homogenous US culture, that California is a very different, and southern California, is a very different culture from other parts of the US. But, it was a really good experience, living overseas, kind of, just understanding a completely different way of looking at things, a different way of operating. Even, even going to the supermarket, you know, and kind of, struggling to find anything, because it's all in different packaging, and so somehow your eye takes time to see it. And understanding what that feels like. It was a really good shake-up of my otherwise comfortable brain. And yes, couldn't be more different than Guernsey where… When I first moved to Guernsey, you'd hear about some new restaurant on the other side of the island, and you'd mention it, and people would go, 'Oh well I'm not going all that way.' And you know, it was like, three miles to the other side of the island. And, and it seemed laughable when I moved there, and yet three years later on, I was also in the, well I'm not going all the way to their camp. So… And things like, in the local paper, I don't know if they still do it, but they used to publish the tide times and the tomato watering quotient very day, which again seemed hilarious when I moved there, but it was amazing how much that tells you about what's going on. And so, I used to kind of, grab that, and, and lean on it. And then, you know, on a foggy day, oh, if it's a stormy foggy day, there would be no planes, no ships, and so you didn't get newspapers, you didn't get mail. And, so it was a kind of, lovely but quite weird experience. Whereas in the US it is so huge, and the distances that you travel really relatively easily without thinking very hard about it, was extraordinary. And, so, I, I enjoyed the space, the deserts, the mountains, being a bit outdoors-y, I, I kind or loved all of that. I loved the fact that, everybody exercised in some way. If you kind of, were out on the beach path at the weekend, you know, there'd be sort of, old, young, healthy, unhealthy, disabled, able-bodied, you know, everybody was out kind of thing. It was a, it was delightful. And that weather.

Mhm. Yeah. Very different.

Yes.

[24:03]
You are rated in the top 50 most influential women in UK engineering. It's an interesting list isn't it.

Yes.

And most influential women in IT.

Yes.

With these accolades come responsibilities. How do you take those on?

Yeah, I mean I'm, I'm really proud to be on both of those lists actually, and, and funnily enough, the first time I cropped up on an IT list. I've always thought of myself as an engineer, and so I was a bit surprised. But actually, a very good chunk of my career has been in IT, all the cloud stuff, a lot of the networked nonlinear broadcasting stuff, absolutely. And so, it's wonderful to be on those lists, and in a way, that's just an extension of the diversity work I do where I do think it's important to have role models, and, and if I am influential, then, you know, there's a couple of things I want to us the influence for. One is, getting that diversity measure, diversity and inclusiveness in its broadest possible sense, getting the message out there. But also, I kind of worry about where some of this tech is taking society, and so, I kind of want both the, the technologists who are creating this stuff to just be thinking a bit harder about the social impact of what they're doing, but also on the, on the flipside, I do think society can get overly hysterical about things. And so I'm trying to encourage them to get a bit more engaged with the technology and understand what is and isn't feasible, but also to sort of, be, be having their say about what they do think these, these things should be doing. So that if you take something like artificial intelligence for example, I think we absolutely should be talking about the possible implications of that, the ethics of it, I think that matters, but what's not helpful at the moment is, is that there are some kind of quite extreme dystopian visions that sort of cloud intelligent conversation almost. And so, advocating for technology both on the technology side and societal side is something that I, I think I can do, and being on those top 50 lists kind of helps, helps with that influence.

Yeah.

Yeah.

[26:21]
You're still in an overwhelmingly male business world.

Mm.

What advice would you give to women who are thinking of following a similar path?

Yeah. I… I mean, the advice is kind of cheesy, but I, you know, do believe in doing what you love, and sort of, following your heart. So if it's what you want to do, then do it. Actually, the main piece of advice I would give to women is, kind of not to get too hung up about being a woman, because I think you can end up just convincing yourself at every turn that you are being discriminated against because you are a woman. You didn't get that job because you're a woman. You know, that thing went wrong because you're a woman. And, and you miss out on all sorts of learning opportunities if you make that assumption. And so actually, I, my diversity work has been as a kind of collective. So I'm out there on platforms campaigning for diversity as a group, you know, at a generic level, but as an individual, I haven't been sort of storming around shouting about my rights, because I think as an individual you need to just crack on, get the job done, you know, do a good job, become respected, and all those good things, and not, not think too hard about it. Because I just don't think it's helpful at an individual level.

[27:34]
Through your journey there must have been some mentors that made a difference. What ways, and how did they come about?

Yeah, I'm a believer in kind of, learning something from everybody, and so, some people, you know, have, have officially been my mentor, and have known it, and have been fantastically useful from kind of, big ideas, to just talking about a specific situation. And other people, you know, probably are completely unaware [laughs] that they've kind of been a mentor to me, because I've just watched how they operate.

And, some people you watch how they operate, and think, OK, that's how I wouldn't do it, but that, you still learn something.

Sure.

And, and others you really admire the way they look at things, and… You know, so even like an approach to life, and you might learn that from a receptionist or a, a security guard. And so I, I like to think that I've picked up all sorts of things along the way. But the mentors that… Frankly I have, I have been lucky to find mentors who have been sort of, very encouraging, and definitely there are times when, just having someone say, 'You could do, you could really do this,' is what you need to just push you over the edge to give something a go. And so the number of things that I've done, not because I spotted it and proactively rushed off, but because somebody had said, 'You ought to have a crack at that, you'd be great at that.' And so I'm very grateful for the people just taking the time to point stuff out to me like that. And I do think, I encourage people to ask for mentoring. You know, I, I don't, I don't know that it necessarily needs to be some formal programme, that actually, I… I occasionally see someone who just thinks it's extraordinary, and, I generally find, if you say to someone, 'I think the way that you, you know, the way that you presented that, or the way that you dealt with that situation, was extraordinary. Would you spend one hour with me to just talk that through? And I'll never bother you again.' [both laugh] And on the whole, even quite meteoric people will do that. Because actually, it's quite flattering when somebody asks you for that. And especially if it's a very specific ask.

Mhm.

And so as well as whatever formal mentoring may be available, I think, grabbing someone who just inspires you for some reason and chewing it over with them is, is well worth doing.

[29:54]
It's worth doing. Now you were appointed as President of the IET.

Yeah.

What… Where did that come from, how did it happen?

Yeah, that's just an amazing… It was an amazing year. I mean that, again, I, it's kind of embarrassing, but I did, I sort of fell into that. I mean it… [laughs] That's, that's a bit over the top. But I, I went onto the board of trustees at the IET because, I had just reached a point in my career where I was thinking that it would be good to have some other board experience outside of Sony. And, so just started to think about that when someone from the IET called me up and they happened to have a casual vacancy, you know, somebody had left the board midterm. And normally you have to go through election and things.

Yes.

And, and it just never occurred to me to do that. But as it happened, this midterm, they just said, 'Actually, you happen to have exactly the experience that we need on the board at this moment. Would you do it for a year, you know, until the next elections come round?' And so I, I sort of, went onto the IET's board that way. And I, you know, I was already a volunteer for the IET, that's how they knew of me.

Of course, yes.

And, and so that was, it wasn't something I'd ever really thought about doing. And so having, you know, having got onto the board that way, and then, realising that was something that was really good for my development, I was learning a lot from it, and I hope being useful to them, that I then, you know, went through the process of becoming an official trustee, and… And, I think I was… I was asked… I was sailing. I do a lot of sailing. I was sailing one summer, you know, brain switched off really, and, I was rung up and asked if I would put myself up to be deputy president. And I was like, well is that much more work? You know, blah blah. And, having sort of satisfied myself that that would be interesting, and it wasn't a lot more work, I agreed to put myself up for election. Which I did. And nobody contested me, so, I became Deputy President. What I… Classic me, I hadn't understood that once you

are deputy president, it's just, you know, then you're on the treadmill, and you will become president.

The next thing, yeah.

So I… I mean I'm embarrassed, because that's poor attention to detail really, but I hadn't appreciated that there was an inevitability about being president.

Yeah.

But… But actually, I mean what an honour. It was incredible, an incredible thing. And I was their first woman, which in a way made it an easy year for me, because, I was going to be memorable [laughs]…

Yes. [laughs]

…you know, no matter what, really. And so that, that… And, and actually, even though I was the first woman president, and obviously it's, it's still quite a male-dominated institution, although, it's something that pays attention to, but, you know, as, as the statistics change, I'm sure that will change, but, you know, I was really, I was really made to feel welcome, I was really well supported. And, and it was an extraordinary year. I got to meet, you know, a) I got to tour all sorts of engineering facilities that I would never have any excuse to access normally.

Lovely.

I met incredible people. And, and just, found it really inspiring. As well as just meeting regular volunteers out there, working in schools, getting children interested in STEM. The whole spectrum of what the IET does, I was really exposed to it for a year. It was fabulous.

[33:18]
Sounds good. It sounds like a very good year. And now, you're co-chair of the Institute of Future Work. Is that correct?

Yes, Institute for the Future of Work. That's right, yeah.

Where, that I understand, advocates technology as a force for positive change.

Well yes. The… The idea of the Institute for the Future of Work is that, we would like to be looking in a kind of both scientific and, and civic engaged kind of way, at what automation and artificial intelligence are going to do to the way we work in the future, on the assumption that it's going to change the way we work, as well as the way we live, and that actually, that probably has implications for the way we educate children, probably the way we educate adults, because it's likely that people will need to change jobs more often than perhaps we have historically. And also that, government needs to be thinking differently about employment legislation, so look at the court cases going on around things like Uber, you know, are these people employees or not, do they have employee rights? Those kinds of things. And so, it's, it's not a kind of pure tech subject, but the, the institute is pro-tech, you know, we think bringing in artificial intelligence and automation can and should be a good thing, but we're sort of, we're working on the basis that we, we have got plenty of examples of where people have automated factories taking people off the production line, but have managed to upskill them and redeploy them in other ways, with better and more fulfilling jobs. And so our argument is, if we're paying attention to the way this technology is developed and implemented, you can actually improve the quality of work, improve people's average wage, and that, that it could be a force for good, but that if we kind of sleepwalk into it, then, people will just kind of, strip all the people out, and, and the kind of profits from manufacturing will go to fewer and fewer people.

[35:19]

And so, what I've liked about it, I, it's, I was asked to join a commission on the future of work, an independent commission, while I was IET President, that's why I was picked for it, and they wanted someone with a technology background. But on this commission we had kind of, lawyers, trade unions, and teachers, and… And it was interesting for me, because I hang with engineers most of the time, or technologists, and, and so I liked the kind of multidisciplinary nature of this commission.

Yes.

And so forming the institute is, is what a few of those of us on the commission decided, we felt once commission had reported, that there was more to do. And so we formed this institute. And so my co-chair is Sir Chris Pissarides, who's, he's a Nobel Prize winning economist, so I mean, in very lofty company.

Yes.

And so, it's, I really like, you know, I like working with people who look at things differently, and who challenge my kind of, cheerful assumption that all technology is [laughs], is for good.

Automatically brilliant.

Yes. Exactly. And so, I am hopeful, it's part of my continued effort to kind of change the world, I, I continue to have a, you know, kind of, technology and its impact on society, and technology is a force for good, that's a common theme through my work in engineering at, say, the Royal Academy of Engineering and the institute, but also feeling like we… Yeah, and looking at things like education, the need for STEM in education, is absolutely, it's clear from the Future of Work stuff that we're doing. So it's surprising how much common ground there is at the institute. But, me, I'm hoping that we can kind of influence that conversation so that we can embrace technology, and become a, you know, a kind of, high tech nation, or a more high tech nation but in a way that is good for everybody.

Inclusive, yeah.

Yeah.

Absolutely.

Yeah.

[37:15]
You're quite active on social media. I've had a look at your recent Twitter feed for instance. Which social environment do you find the most useful for getting your views recognised?

I mean I… I guess Twitter's the thing I use the most, and I'm flattered that you say I'm quite active on social media, because I feel hugely inadequate. And, one of the things I'm struggling with at the moment on Twitter, I mean basically, I probably should just have multiple Twitter accounts, because I, I would love… One of the feeds I get on Twitter once a week from the Huffington Post is the 20 funniest tweets of the week from women.

Yeah.

And, you know, just very witty observational humour from women during the week. I would love, I would love to be tweeting stuff like that. I would love to be kind of, cracking jokes and, and laughing at things. But it seems wholly inappropriate with the kind of persona [laughs] that I've got. And so maybe I just need to set up another identity for that. But… But actually, I have been trying to make sure on Twitter that I am able to cover both, both the sort of, diversity in engineering, STEM messaging, as well as the Future of Work messaging, and it's been kind of oddly, you know, an oddly uncomfortable experience. Like, if, you know, if I think about 'the brand', that I can imagine people gutting my Twitter feed and kind of thinking, 'Well, oh, wait a minute, what… I thought she was about this, and it's about that.' So…

Mm.

But actually, you know, for me, it's, for my energy, it's kind of important that I…

It's the holistic thing isn't it, yes.

That I, that it's coherent. So, so that is quite a good discipline for me to kind of keep me on track, doing the things that I'm good at and where I can really add value, which are in this crossover between kind of societal impact and, and diversity in STEM. So

yeah, Twitter's probably my main one. Facebook is purely personal, you know, chitchat about the family and, and stuff like that. And Instagram, I mainly use to keep track of my stepdaughter. [both laugh] Because she doesn't post on Facebook very often, and, and that way I can see roughly what she's doing. So… Yeah.

[39:18]
So thinking back through your lifetime, in what ways do you think technology has empowered people?

Mm. Well, I mean, that's an interesting question in terms of thinking about the societal impact of technology, because I do think, for example, the fact that we're all much more mobile now, the fact that we have access to our work environment with very easy mobility. It used to be that you could have a special set-up at home and you could work from home, but now you can work from a café, you can work from the beach. And, I think that is both incredibly empowering, and, used badly, horribly debilitating. I do think there is a kind of, there's a point here for women, because I think some of this mobility has enabled much more flexible working, which I think is good for everybody, but is particularly helpful for women with childcare responsibilities. I long for the day when women and men both have equal amount of childcare responsibility, but, where we are today, I do think the mobility has been empowering for women in particular, but, but at the same time until we learn to regulate ourselves, if you're not careful it can turn you into a work junkie who never switches off. And… And I think that is obviously, that's a concern. I've heard a theory which I, I like because it sort of suits my view of the world, that, that kids growing up today will have a much healthier relationship with technology. The kid that's grown up with their parents being distracted and are constantly on their phone, and, and fiddling around, and not paying attention to them, may well kind of reject that, and be much more attentive, and maybe have a slightly healthier relationship. For us, it's all so new that we are kind of, you know, soaking it up with great excitement. So that, I cling to the hope that that may be true, that maybe we'll learn to get some kind of a balance between being hooked on the technology and not. But I think there are lots of other ways that technology has been empowering. You know, particularly I think it has been empowering in a number of ways for people who have had some kind of a disadvantage, whether that's a physical disadvantage, you know,

from the inclusivity point of view, there are a number of ways that I think technology is really helping, and I think that, that can only get better.

[41:41]
Can get better. So what would you, thinking of the next generation coming through, you mentioned, you think it could be quite different, because technology is just a part of life.

Mm.

How would you seek to encourage the next generation to get involved with technology?

Yeah. I mean actually, it's been interesting. On the Institute for the Future of Work we have one trustee who's under 30, and occasionally as we're all wrestling with something that we're really worrying about about the future of work, she'll pop up and say, 'Actually, I don't spend any time worrying about that, because I've kind of grown up with that as an obvious reality. So frankly, that, you know, that's like, yeah, OK, so what? You know, things I *am* worrying about are…' And, and so, the reason I think that we need the young people to engage is because actually, we, we cannot possibly see the world through their eyes, and, and I think that's right. I think some of the things like changing jobs frequently seems slightly shocking to me, and like, something we should prepare for, but actually, people who are probably 20 today have just grown up with that as a relatively obvious reality that, that they're going to be facing. And so maybe that's not, not such a big shock for them, and it's only the, the people, people a bit older that we need to be thinking about and, and coping with in the transition.
[42:57]
The issue we've got is, how to, how to make those connections. You know, I've seen it at the IET, I've seen it at the Royal Academy, I've seen it in a lot of places where there's a genuine desire to engage with younger people, but actually, you know, the way that we approach things is just not interesting or appealing for them.

Yes.

And so I think that is, that's something we, we need to think a bit harder about. At the institute, one of our kind of differences I think is our determination to do lots of civic engagement, you know, lots of just getting out there and talking to real people, often people who have lost their jobs or are impacted, and really trying to understand what that feels like from where they're sitting. So, we need to do a bit more of that. But interestingly, if I take the IET as an example, where younger people do get engaged, usually they absolutely thrive.

Yes.

Because in fact, by engaging with somebody like an institution, I'm sure the Worshipful Company of IT is, is the same, that you get access to such extraordinary people, sort of, really unique access, that sort of taken in the right spirit, it can be incredibly useful and give you sort of, exposures that you just wouldn't normally get at that age.

Mm.

So… So, I guess the trick is, in social media terms, is to find those kind of, young influences, and find ways of, of getting them involved. But, but actually, it is, you know, it's their life, their world that we're talking about. And so, getting them out there, getting them voting. [laughs] All of those good things.

Getting them engaged, yes.

I just… I'm just not sure we're, we're currently doing that in a language that is appealing. It's a bit like trying to get the youth involved in politics, and, and you look at it and just think, why, why *would* they? [both laugh] It's just, it's pretty, it's pretty unappealing to me, let alone to a sixteen-year-old.

[44:50]
Yes. Thinking about, what brings you the most joy in your life?

Ooh. Well, now that I've reached a stage where I don't have a full-time job, very cheerfully, don't have a full-time job, and have absolutely no intention of ever having one again, so I'm sort of in, you know, I'm… My husband snorts with derision when I say that I'm semi-retired, but, nonetheless, you know, I'm on that track. And so, for me, what's important in life is friends, family… No, that's it, friends and family. [both laugh] That's your lot. And so, you know, what brings me most joy, well, friends and family. I mean, simple things. I still love being outdoors, so I love cycling, absolutely love it. I cycled here this morning. And, it's just, absolutely joyful. I do, I do love learning new things, you know, especially, you know, some new piece of tech. I do enjoy that. But actually, in terms of what brings me joy, it is interacting with my friends and my family and being part of a community.

[45:50]
Mhm. I'm sure you still have some goals for the future that you'd like to achieve. Would you like to share any of those?

Well I'm, I'm not ambitious in that… You know, I have no kind of, flagship objectives. You know, there are no awards I'm hoping to win. [laughs]

No.

There isn't a job that I'm hoping to get. And so my goals actually are mostly about, you know, being happy, and being healthy. So certainly staying physically fit is important to me. But I, it is important to me to be purposeful, and so the goals would be things like, you know, with the Institute for the Future of Work, I would like to get that to a point… At the moment we're still fundraising. We, I mean we, we've got enough to run on for a year or two, but that's, it's still early days for that. I would like to get that to a point where it's not just established but is making a difference, is doing something that actually matters. And in the case of that, it may be that we simply work with a single community in one town and make a difference there, but, I would really like to feel that we can do something that demonstrates it doesn't have to be that way, you know, that it could be better.

[46:58]

Mhm. What is least documented about you that you'd like people to know?

Oh, what's least documented? I think I'm fairly well documented. I mean probably… [laughs] Well there are… I mean there are a couple of things that maybe… I mean I'm quite… I'm quite… I'm trying not to use the word silly. You know, I really like a good laugh, and I do like to lark around, and people that have worked with me know that, but that's probably not that well documented. But I, you know, I love life. I, I love people, I love interacting, and, and howling with laughter over something is, is very definitely part of who I am. And, and maybe that's not well-documented. I'm also big into motorcycling, which is not particularly well documented, as well as all my other outdoors-y stuff, which has sort of, pleasant surprise value. But apart from that, no. I mean maybe my, my actual… You know, it's been a lifelong prioritisation I think of family and friends, but particularly family. You know, I hope my family would recognise that, that even when I've been in very high-pressured jobs, that's, that has always been and continues to be really important to me, and, I've, that may not be that obvious, [laughs] that I'm a very family-oriented person, from the public image that I have. But, that is, yeah, incredibly important to me.

That's lovely. Thank you. It's been a pleasure to meet you, and to have a wide-ranging and interesting conversation. Thank you for being so willing to share your knowledge and experience.

Thank you.

Thank you.

[End of Interview]