



Sir Robin Saxby

Interviewed by

Richard Sharpe

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Welcome to the Archives of Information Technology, where we are capturing the past and inspiring the future. It is Wednesday the 10th of May 2017, and we're in the Worshipful Company of Information Technologists in the City of London. And contributing to the archives today is Sir Robin Saxby, who built and ran for many years and then chaired what I would call the jewel in the crown of the European electronics industry.

Well thank you very much for that compliment Richard.

I'm Richard Sharpe, a sometime professor, Adjunct Professor, at the University of Southern California, and also a long-time journalist.

[00:40]

So Robin, you left university, Liverpool, which we'll come back to in a while, and you started work in Rank Bush Murphy.

Yes.

Now, there are three names from, a blast from the past in the electronics industry.

Exactly. So we go back a bit further. My hobby as a kid was electronics, I'd got an electrical outfit when I was eight, and, I had a radio and TV repair business when I was thirteen. And so, I went to Liverpool because it was the centre of rock 'n' roll, and I loved music. I used to build valve amplifiers as well. So I've always been a sort of pragmatic 'do it' sort of engineer. And having started in TV repair when I was thirteen, the new up-and-coming thing, as I was graduating in 1968, was colour television. Colour television was not yet out, it was about to happen. And, I thought... My final year at Liverpool was colour television receiver theory and practice, and what I remember in particular is, the BBC, on the milk round, offered me a job on the spot, that's because I could talk colour subcarrier frequencies, and I had all the buzzwords. And it was a very good salary, because, in those days it was like a thousand quid, and they offered me £1,100. And the job is, when I joined Rank Bush Murphy, they offered me £1,140, £40 more. But that wasn't why I did it. The reason why I turned the BBC down was, I thought BBC make programmes, and

really, I liked the idea of making products, and we made television sets, and Rank Bush Murphy was probably the most entrepreneurial electronics company in the UK at the time. It was backed by the Rank Organisation, obviously they had Xerox as well, and my claim to fame is, we designed the UK's first solid state colour television receiver, and I got involved in integrated circuit design back in 1968, which is pretty early on. And my state-of-the-art chips contained 50 resistors and 50 transistors. And, if you think today's chips in your mobile phone have got, like, a billion transistors, the world has chanted. So, I was the lucky kid to get the opportunity to join a great company. I also, this is another message for the kids who listen to this, I got five job offers. The one that turned me down was Racal, and I think that's because I, I feel underneath it all, I was kind of a pacifist, and they were in weapons, and I don't think they liked me very much. But everybody else offered me a job. And, Rank Bush Murphy was my first choice. It was in Chiswick. And what was fantastic was, the quality of the engineers that I worked with, and their knowledge. And again what I say to university kids is, you know, well you can pass your exams, you can do your circuits; it's that practical experience that matters, and in particular in any high volume product, it's about judging the tolerances to make enough products to make enough profit. You can design one product in the lab which is fine, but high volume production takes some other skills. And that was my starting point in engineering.

[03:45]

And what was your title there?

I was called a design engineer.

A design engineer?

Yeah yeah. And... Yeah, so, you'd better keep asking me some questions, otherwise I'll just rabbit on.

Well, you move to Pye. How long were you were at Rank Bush Murphy?

So I was at Rank Bush Murphy for four years, and the reason why I moved to Pye, and this is just me, and this shows how wrong you can be. At Rank Bush Murphy we were designing colour televisions, we were designing state of the art chips. They were fully stolid state. And, one of the things, I gave a talk at the Royal Television Society when I was about 25 years old, and it was called 'TV and Chips', and it was a joke, it was TV and microchips. And what happened is, Motorola Semiconductors, who were setting up in the UK, they were looking for bright young engineers who would work for them, and they offered me a job. And the reason why I was moving to Pye, because, after four years of considerable electronics experience, I thought it would be good to get professional electronics experience, and Pye were working in, it was pulse-code modulators, that's what they were, PCM receivers, and it was digital. And I thought it would good to broaden my experience, to get into a professional company, get a bit more digital. That's why I chose to go to Pye. In the meantime, before I got to Pye, Motorola offered me a job on the spot, and at the time I said, 'No, I've decided to go to Pye, that's my engineering career.' But they kept talking to me. And eventually, Motorola seduced me into joining them with a company car. That's a little bit of history we'll get on to. So, so I was four years with Rank Bush Murphy, and I thought, I want to broaden my experience, I'll go to Pye. And... But what I found is, I had this theory that professional electronics would be more advanced than consumer electronics, but in fact the opposite was true. Because with Pye, we were using discrete transistors, not integrated circuits, and the important thing, because the end customer was the Post Office, the biggest worry was 25-year lifetime. So, if you were designing with the latest technology, where is the proof that it will last 25 years? So what I found at Pye, which is why I subsequently joined Motorola, I was only with Pye for about a year, the engineering was good, I learnt some new skills, met some rather nice people, but, the market wasn't really at the front end of technology, and Motorola, just starting in semiconductors, had a factory in East Kilbride, Scotland, one in Toulouse, France, and one in Munich, Germany. And they were setting up, in those days for the Americans, Europe was the expanding market.

[06:23]

Right. Where was Pye?

Pye was in St Mary Cray, Kent, actually.

Right. So you've gone from Liverpool to Chiswick.

To Chiswick. And with my wife by the way. So, I met my wife in Liverpool. Again, that's another thing I say to the kids, it's always good to have plans, but the plans don't always work out. I planned to fall in love at 28 and get married then, but I met my wife much earlier, and fell in love and got married at 23. So that worked out. So plans are good, but have a bit of flexibility.

[06:53]

Right. So you did move to Motorola.

Yah, I did move to Motorola. So I had a year with Pye, and, so here's what happened with Pye. So, what I didn't like about Motorola... So I was very much of the engineering fraternity, and Motorola realistically, the people who were running the company, they were sales people and marketing people, they weren't really engineers. They wanted to hire engineers, and they offered me a job to head up their applications laboratory, but they had no equipment, no budget for equipment, no other engineers. And I said, 'Well if I'm going to set up an engineering lab, I need all this stuff.' And they said, 'What's that?' And, we kept talking, and after a year, they kept showing me the good life, and, because people on the sales and commercial side, certainly in those days and probably still today, make more money than people who are just working in the labs. And, I was newly married to my wife Patti from Liverpool, she was a teacher, and, we had our first house in Kent, it was the cheapest way to buy one. And I was commuting to St Mary Cray in a beaten-up Ford Anglia, which didn't run very well, and we were very poor with our first mortgage. And so Motorola offered me something like £1,000 rise and a Ford Cortina 2000 GXL, and, I still wasn't sure about joining them. I thought, these people are very commercial; will I really be OK with them? And, Jim Knott[sp?] was the guy who hired me, and he picked up the phone and he said, 'What colour would you like me to order for your new Cortina 2000 GXL?' And I said, 'White with black upholstery.' And then, this is how clever Motorola were on the sales and marketing side. They gave me the car two weeks early. I used to play table tennis with the guys at Pye, including the chef engineer. He was 53, I was 27, and his name was Norman Everton[?]. And he said to me,

‘Have they got any more jobs? I could do with a car like that.’ So that, that was when I, the joke is, I went to the dark side, I went to the commercial side, very nervous. But I learnt a lot, and actually I turned out to be quite good at it.

And so you established a lab for them?

So... No, so here's what happened. So, the particular job they offered me to start with, I turned it down, so they hired somebody else. And the job they offered me, I was a sales applications engineer. And, what a sales engineer does, as opposed to a salesman just getting purchase orders and doing things, he goes into the laboratories of his customers who are designing things, and helps them design their circuits. So, I would be selling Motorola integrated circuits, but in order to sell them, I would help the engineers, who were my customers, learn how to use them, and through that process, you're doing engineering but it ends up in large purchase orders. And the name of the game is, you've got Motorola, you've got Texas Instruments, you've got Mullard, you've got all these companies wanting to get their customers to do, use their products. And because I wasn't a bad engineer, and I got on very well with the engineers, so I was selling to people who had done very similar jobs to my own. And what actually happened in Motorola, there was a big recession in 1974 I think, or something like that, and, everybody, the business was going down, purchase orders were getting cancelled, companies were going bankrupt. And what happened is, I more than doubled my turnover in the worst year ever because all these new products were going into production, and we were getting revenue. So, so they promoted me fairly, fairly quickly.

[10:24]

And the other thing which was a learning curve for me, I was very nervous of the commercial side of the business, I was probably a bit naïve. You know, the buyer's job is to get the lowest price and the salesman's job is to get the highest price, and there's a negotiation there. And to start with I found that quite difficult. I was very comfortable in the engineering labs talking about the bits and bytes and circuits and things, but in the negotiation, it all seemed very strange to me, and a bit hard. But I learnt fairly quickly. And that was a big learning curve. And it really is, you know, *Star Wars* has just been celebrating, the 4th of May is the *Star Wars* day, which, this Worshipful Company, they did a banquet dinner that I went to, and they had the

pictures of Darth Vader. But, the joke is, I felt that going into the sales and commercial side was a bit like going to the dark side, but it's a bit like 'may the force be with you', and if you carry on doing good engineering, and do a fair deal, you'll be all right.

[11:25]

So now you've got the technical expertise in electronics.

Yes.

And you've also got now this experience of sales and of helping customers to apply the products from the company.

Yes. And what I would say more than that with Motorola, which, and I think this also goes to some of my success with ARM, one of the things I say... And today, by the way, I'm involved in eight start-ups, and I invest and I advise the chief executives. I'm also involved with the Royal Academy of Engineering, have got a thing called an Enterprise Hub. And one of the things I learnt from Motorola is that customer pull is a thousand times more important than technology push. So if you meet the explicit need of a customer, and fit your products to those needs, you will do very well. If you try and sell something that's not quite right, what usually happens is, you can get into heavy price negotiation and so on. So that's one thing I learnt. And then the other thing I learnt from Motorola was that, it's the term, it's all about marketing. So marketing is anticipating the need of the customer, probably before the customer knows he has that need, looking at the technical roadmap of your products and how that fits. So what Motorola... Motorola was organising segment marketing. So, I was working to start with in the consumer segment. I did change to the computer segment, when I got a promotion later, but, but we'd have consumer electronics, we'd have industrial electronics, we'd have automated electronics, we'd have computers and so on. So, so basically, the segment marketing approach, and understanding the way those technology changes are likely to happen over the next 20 years, and being prepared for them. So, I would say, as well as understanding selling and learning selling skills from Motorola, I learnt a lot about marketing. And it's the technical marketing, it's what we call strategic segment marketing. And I very much, that's

almost got into my psyche as a way of thinking, and, you know, getting those skills at 27 was quite good. We would also mix, I would mix with the designers and the production people. The other bit of Motorola was one of teamwork. At the time we used to do management training exercises on the subject of synergy, and synergy was a training they did for the lunar astronauts. The idea of synergy is, in a team, you're all good at something, you're all rubbish at something, and in a crisis situation you want the person who's best to take charge. So synergy is all about learning those skills. And I learnt some of those skills from Motorola. Again, I was 27 years old, they put me, I was in a computer group in Motorola, and we were playing business games, and I was only 27, and we had a team, and we were told, the game is synergy, here's what we we've got to do, win it. And I remember the boss of Germany, he was about 45, and I was 27, was saying, 'We'll do this!' I said, 'No, well, it's synergy. Let everybody have a word.' And, he said, 'Mr Saxby, I've learnt a lot from you.' The thing is, we won the game. And, the game, the prize, by the way, was an abacus. As we're talking about computers. And I've still got it.

[14:25]

And Motorola was a company which was, among other American companies, renowned for its training, wasn't it?

It was fantastic. I mean, so what was great about it, having worked for the other companies before and after Motorola, it was non-ageist, it was about quality of people, teams, and getting the best out of the best. And therefore training was very, was very important. And it was, this is also where I learnt a lot about Europe. So, headquarters of Motorola was Geneva, and I'd go to Toulouse and Munich and East Kilbride, and you would get different skills and different ideas from different places. But we were very much operating, looking at the whole of Europe for the opportunities and working together. And the training was excellent. Also, you know, we'd get things like finance training and... So I would, I would, I was trained in all the business skills as well.

[15:13]

And you left Motorola. Why did you leave?

So, it's like everything. So the joke is, in the performance appraisal... I was there eleven years...

Which Motorola was renowned for.

Yeah yeah. It was... It was Motorola Semiconductors was the division I was in. And I said to my boss, you know, in the performance appraisal, 'What do you want to do?' I said, 'I want to run the whole company.' He said, 'You won't be able to. Your name isn't Galvin.' Because everybody, you know, you had to be a son or brother or whatever. And the grandson eventually took over. But, so, it was obvious to me that, to progress, having learnt a lot, if I wanted to get on with my life, I wanted to be a chief executive, I really had to leave the company. And, what actually happened, it was a headhunting phone call, when Henderson were on the phone, it was the headhunter Heidrick & Struggles I think, they rang, and said, 'We're looking for a chief executive. Henderson...' It was Henderson Garage Doors, who made mechanical garage doors, they were the UK market leaders, 70 per cent market share. And they had built a company called Pitt Security Gates, which was sliding trackless gates. But then they bought a company on Long Island New York called Continental Instrument Corporation that was into access control. So, they'd got themselves accidentally into electronics, and they had a few problems, and basically, the American equivalent wasn't working properly in the UK. So my interview was, 'We've got these problems. How do we fix them? What would you do?' I said, 'I'd get a consultant in.' They said, 'Do you mean PA Consulting?' I said, 'No, I think Dave Leeper[sp?] could do that in an afternoon.' So, I was the Chief Executive of Henderson. My first CEO's role, making security equipment, access control. We also bought in a closed circuit television camera company. And, it was a kind of entrepreneurial acquisition spree, but, and here's the problem, it's something else I say to the kids, my boss, who was a mechanical engineer, was culturally very different to myself, and although I say, my Henderson job was like a Harvard Business practical with a vengeance, culturally he was the complete opposite of me. I was very much a team player; he was very much, look at the P&L, look at the balance sheet, look at the cash, look at the detail, and beat the people up. And so, having had my sort of, difficult period, I moved on to European Silicon Structures.

[17:35]

Right,. And, where did you work there, where was that based?

So, so what happened is, so this is the other true story. So, when I joined Henderson for the CEO's role, I wanted to learn CEO skills, Motorola tried to persuade me to stay, and they offered me several, you know, offers to come back as well. I stayed friendly with them. And they said, 'The semiconductor industry is in your blood, you know, you've be back,' sort of thing. And wat happened is, I'm at Henderson, I'm the chief executive, not really getting on well with my boss, learning some new skills, how to be a bully is a good skill to have if you need it, and, and how to be difficult. And my wife would joke about my boss, if I'm being a bit naughty she'd use his name at me today. So, I've learnt a bit of the real dark side from him Which can be useful. If I saw him today, you know, how to be tough, how to be difficult, he taught me some of that. And I survived. So I got a phone call from a guy I had worked with at Motorola, his name was Jean-Luc Grand-Clément, and he said, 'We're starting European Silicon Structures. You probably know Robb Wilmot,' who's another computer guy, was involved with the start of that. So this was Europe's first funded semiconductor company to do full custom ASIC chips. And the job I was offered, they said, 'We'd like you to come and be the marketing director of the UK first, but we want you to be the CEO of the UK.' Because the guy who is the CEO, he's going to do something else, blah blah blah. So that's what happened. So, I joined European Silicon Structures. What was fantastic about European Silicon Structures raised \$100 million of seed capital, which was pretty good. We got that from Philips, Saab, Olivetti, et cetera, top European companies. And the idea was, we can make full custom silicon more cost effectively than using photomass. And the idea was, you know, design your own chips, direct write on silicon with e-beam machines and so on. And it was a fantastic vision, fantastic team of people, fantastic fundraising. The only trouble is, the e-beam machine, which is the machine to write the chips, didn't work properly. It had a tenth of the throughput of what it was supposed to do. And therefore, the P&L didn't work, and the whole business model was broken. Eventually they, the company was taken over by Atmel after I left, and they got out of e-beam and so on. So it was ahead of its time, but we, we...

[19:51]

And one of the other things I say to the kids, be prepared to make a mistake, and have a go, and, you know, job security is, how easily can you get another job? And we all learn by mistakes, not by sitting in a room not worrying about things. So, so I learnt a lot about start-ups from ES2. And if only the e-beam machine had worked, maybe I'd have stayed there and maybe ES2 would have been a fantastic success. And, and I did get promoted in ES2, I became a vice-president, I was part of the European management team. And also with ES2, I was put in charge of the US company which was United Silicon Structures, US2, and my last job before I joined ARM was sorting out the US operation in California, in Silicon Valley. So, so ES2 gave me... So, Motorola gave me exposure to America, and to Europe. ES2 gave me exposure to Japan, we had partners in Japan, and gave me exposure to Silicon Valley. And, so one of the reasons why, people say, how come you were successful at ARM? I say, well it's my global experience. I'd seen everything, done everything, knew everybody. Kind of, right place at the right time, and it worked. And I think if you... And, it's experiencing the downside of all these things as well. It's not like a glorious success everywhere. It's how to survive and pick yourself up.

[21:09]

And the phone rang again in '95.

The phone rang again, yes. So, it was... This was Heidrick & Struggles. I realised that, the headhunter for Henderson wasn't Heidrick & Struggles, it was somebody else. I can't remember. It was Heidrick & Struggles, who by the way also hired John Sculley to Apple. They rang me up and said, Acorn were thinking of spinning out the twelve-man design team into a new company. Apple were thinking of investing. VLSI were thinking of investing. But Apple wouldn't put the money on the table unless they had found a chief executive. And I was a name, so I went and had a chat. And my chat was, how are we going to make this company work? And one of the jokes, I said, 'We'll make chips over my dead body.' And one of the other jokes is, 'I'm still alive, and ARM doesn't make chips.' But... So my... So looking at what Acorn had, they had a great start, but they had no battens[?], no design tools, only one company manufacturing chips for them. But what I did, and I have the correspondence now... I first met them in about August 1990. The company was legally created in November. And the other joke is, if you actually look at the

records, I was always chairman, CEO, president and everything, because it was twelve engineers and me to start with. And what actually happened is, I stopped being CEO at a point and just carried on being chairman. But the other key thing is a bit of confusion. I was actually with the company before it started, doing email, but I couldn't join them, because I was on six months' notice at ES2. So I joined ARM full-time in February '91, and we did a deal with ES2 actually, because we stayed friendly with them, and they licensed their own technology, where, I could do days for ARM when I wasn't there, and I'd do them back. So we'd trade a day. So we, we carried on with a friendly relationship between the two companies.

[23:02]

And what was the idea behind ARM?

So, well, well the ARM was, and this... So I said... Well, they said, you know, the business plan said, well, we'll have the best RISC chips, right? And realistically...

And RISC means what?

RISC means reduced instruction set computing. So what Acorn were using... The key benefit of RISC was, better performance, OK? So it's a bit like cars, you know, big engines produce more power. The original RISC chips from the likes of IBM produce more power, in terms of performance. Where Acorn were different, they designed the first RISC chip to a cost budget, so the ARM1, was the first RISC chip to be designed to a cost budget, and what they did have is, a pretty fast chip that was at a low cost, made by VLSI Technology to use in their Acorn Archimedes computers. But, when I analysed it with the engineers, we realised the big benefit was the lower power consumption. Another big benefit was the low cost. And the first company brochure I did, I said, we're going to be the best MIPS per watt, that's millions of instructions per second per watt, and the best MIPS per dollar, millions of instructions per second per dollar. But, we'd better have some design tools. The only way you could program in ARM in those days was if you had an Acorn Archimedes computer. So I thought, we'd better, bought some software tools to an IBM PC. And then the other thing is, we have no patents; we'd better invent some new stuff. And one of the key inventions as a joke, it was Thumb. Thumb is a 16-bit implementation

of a 32-bit ARM, which goes on the end of the ARM. And the advantage of Thumb was, it's much lower cost, it's got a lower memory footprint, and what that did is, it changed a conventional RISC chip into something that could compete with all the high-volume Japanese, Americans, et cetera, CISC chips, CISC being complex instruction set computing. So we changed the architecture, and Thumb I think is the most important invention. That was done by a guy called Dave Jaggard, who's a Kiwi, who happens to have the same birthday as me. And that's why the ARM architecture got into all the high volume stuff, whereas the MIPS architecture and all the other ones didn't make it. We switched. We made the technology fit with the market need of high-volume production.

[25:29]

One of your first customers was indeed Apple.

It was.

For Newton.

Yes.

Which was a complete failure.

Exactly.

You must have thought, what am I doing here?

No, I didn't think that at all. So, so, how I looked at it was, Newton... So, it comes back, if you're making mistakes, you're learning. So, what was great about Apple, the guy who was behind the Newton project was a guy called Larry Tesler. He had been Apple's chief scientist; he had also been involved in the design of Lisa, and he's still a very good friend of mine. So Larry was fantastic. The Newton project was broken, OK? But, the Newton really turned into the iPhone. So, some of the engineers who had worked on the Newton... And this is what I say to all the start-ups. Don't expect the first product to work; expect it to be a failure. Plan for the next

one. And so all the first... I mean, it was tough, because... But, the problem was, we might have gone bankrupt. We had no royalties, we were struggling to stay alive. We were running a very lean ship. But, we survived. And that was, that was a journey, that was a step. So the Newton was a failure. The other first product that was a failure was the 3DO Multiplayer, which was a games player. That was another failure. And the first successful products actually were those dial-up modems that go [vocal sound], you know. That actually was the first product with an ARM in it to take off in volume.

[26:50]

And then, the really successful product that made the headlines was the Nokia 6110, and we particularly designed the Thumb architecture to meet the needs of Nokia. When they looked at ARM, they said, 'We love the MIPS per watt, we love MIPS per dollar, we love the performance. But your code density is rubbish.' We said, 'Well, we can fix that with...' So, what that... It... Code density being rubbish, in the chip, your memory footprint will be too expensive, a phone would be too expensive, so that's what we had to fix, for Nokia. And then another major success was Sharp. We... The idea, again, this is very much my sort of thinking, was, having worked in the semiconductor industry, my idea was to get lots of semiconductor partners, all targeting different end customers, so we could be globally successful. So, it was Plessey and VLSI who got us into Apple to start with with a Newton, which was a failure. It was Sharp who got us into Nintendo, for the Game Boy Advance. It was the Color Game Boy. It was Texas Instruments who got us into Nokia. It was LSI Logic who got us into the disk industry, and so on. So, there were lots of failures and lots of success stories, and again, so... The Game Boy Advance was going to be a big design win, and we got a phone call saying they'd cancelled the project, and the reason why they cancelled the project was, they couldn't, the colour display, the colour display, which was also made by Sharp, wasn't good enough, so the project was cancelled. But two years later it was back up again. So the challenge with ARM was, when do the royalties come? When do we ever get this volume?

[28:22]

But what we did, we had to keep licensing stuff to lots of people, and sell design consulting, to keep the lights on to keep things going, and, from a licensing point of view, the big win really was Samsung. So we'd got Texas Instruments, we'd got VLSI, we'd got a few big players. But Samsung, as Koreans, didn't really understand

microprocessors very well, and I managed to persuade a guy called Dr Hayan Lee Ro[sp?] that if he designed his own chips using ARM processors, he could have much more successful products, and look where Samsung is today. And that was the start of... And they... And, the joke was, we hadn't got a lot of money, and we hadn't got a lot of people, so, I quoted them a large price for their licence fee, because I said, 'We need to hire a lot of engineers to support you,' and they gave me the purchase order, and more than that, they wired me the cash. Because I said, 'Unless you give me the cash, I can't afford to hire the engineers.' So we got a several million dollar deal from Samsung. And that's when we doubled the size of the company. We went from about 30 people to 60, and it nearly killed us, because, all the 30 are doing the work and they're having to train the new 30, and you're having to keep things going. That was the toughest period actually.

[2930]

And so we've got Robin Saxby the deal maker now.

Well, I've always been the deal maker from the... So, I was very much the deal maker from Motorola. But deal making is not, it's not just about business and money; it's about getting the job done, OK. And, you know, if you look at football, it's really about teamwork. It's about... You know, all the papers say, 'I did the big deal with this big guy.' I'm sorry, it's rubbish. A football team is everybody, it's the training department, it's the backroom staff. So, I would say, rather than say I'm the deal maker, looking at the team, you're as weak as the weakest link. So, where is that weak link, and how can you fix it, and what can we do about it? And another thing is, which is my culture for ARM, is, I believe in brutal honesty, which means, when I'm talking rubbish, tell me, and I'll admit it, and vice versa. So, it's... But, yes, I did close some deals, but, the other thing I did, and this is another bit of history, so here we were with this start-up company, Acorn wanting us to design all these chips for them; they're telling me to hire another 25 engineers. I say, we can't afford it. It will take as long to develop the deals as it will to design the circuits. So, we hired Tim O'Donnell, working for us in Silicon Valley, as the deal maker there. We hired Takio Ishikawa in Japan. The guy who actually, I think I did the Samsung deal before we had hired Sam Kim in Korea. So again, it's very much the team. But yes, yes I can help make deals happen, whatever they are. That's part of the job.

[31:00]

This was a difficult period when you were doubling the size of the company quite rapidly.

Yes.

How did you manage that?

Well one of the things that, where again we were very lucky, Texas Instruments were choosing to close down Bedford. So, so Texas Instruments, a bit like Motorola, they had factories in Bedford, they had factories in Nice, and they decided that Nice was going to be a bigger centre, and they're going to stop making chips in Bedford. So they were shutting it down. And some of the people in TI Bedford didn't want to move to Nice. And one of the things that worked out really well, we got Warren East, who became, he's now the Chief Executive of Rolls Royce, but he was the Chief Executive of ARM after me, and Warren was one of the people we got from Bedford. We got several people. So when you're doubling the size of the company, it's about finding quality people. That's the challenge. What again I'd say to the start-ups is, don't double the size of the company with people who aren't very good. You've got to have the best, and you've got to maintain your standards. So it was long nights, but I mean, again, the other, my family always lived in Buckinghamshire, and, ARM were based in Cambridge. I shared a house with two young engineers in Cambridge, one of them being this guy Dave Jaggar who invented the Thumb architecture, he says we talked about the circuits in the kitchen, but I can't remember that detail, but, because I was living in Cambridge, I'd got nothing better to do than work 24/7, so I was on the phone through the night, because we're in real time zone, and I'm, I'm working. So, so the reality is, you just have to fight your way through it. And the reality is, everybody worked a lot more hours. And, and bigger pressure on the engineers, who had to get the circuits to work and train the new engineers. But another thing we had, which again I think is part of ARM's success story, I was very much in favour that we had an employee share option scheme for everybody, and there is a joke, I'm completely non-political, but somebody said, 'Is he a socialist?' I said, 'Well I'm not anything, but, I'm just practical.' And the idea was, in a start-up, if everybody has

share options, and they can see the upside, they're going to control the cost, they're going to put the hours in. And so that's another reason for the success, it's the team really, it's not, it's not an individual. OK, the boss has an important role to play, the same as everybody else, but the guy who's coming up with the patents or the new ideas, or... My PA, Glyn[sp?], was, you know, doing the phone calls, sorting things out, just as important as me. So, it's very much a team, a team effort, a team success story.

[33:20]

And the Nokia phone was a big breakthrough.

It was, it was the big breakthrough. It was the big breakthrough because... Well, the good news is, we managed to, because we ran it so mean and lean, I think there were only 21 people at the end of year one, we lost something like £200,000 in year one, we lost something like £40,00 in year two, and we made a profit of £400,000 in year three. And this is even before Nokia came along. So... But, Nokia was like, the volume [inaudible] really. And also, because Nokia... Nokia changed the phone industry. And I have TI to thank as well. It was Nokia, Texas Instruments and ARM were working together, that really invented the first smartphone. So that, that was the start of it. And, everybody contributed, and all contributing what they're good at, right. And, and it was a team result, and of course Nokia, when they launched the 6110, they were probably number three in mobile phones to Motorola and Ericsson, they took off. And the particular thing that helped us there was, Nokia launched their phone in about 1997; we went public in 1998, and we listed on Nasdaq and London, and because everybody knew who Nokia was, when we were talking to shareholders, it gave us credibility. So Nokia was important for us in many dimensions really. But, but so was Sharp, so was Samsung, so was everything. But in terms of the IPO, Nokia was a very valuable friend to have.

[34:50]

And your business model, you've kept to, which is, we design, we support our business customers. We are not a consumer electronics company.

Yes. So, so what I say... So it's important to say, I retired from ARM in 2007. I'm still very... And that's ten years ago. I'm still very friendly with my friends at ARM. And the basic idea was, we will create enabling technology. It's not like we're just doing customer design. We, the way... The parallel is, we design the world's best range of digital engines, right, and they can be fast ones, small ones, low power, low cost, simpler for the Internet of Things, and so on. And we'll put, we'll do extra bits as well, like graphics and things like this, and that could be equivalent to turbochargers. But, we won't make chips, because, and in my Motorola days, I had seen three economic downturns at least, and what happens with chips is, boom to bust. When the prices collapse, you lose a lot of money, you have to lay off a lot of people. So the thinking is, whoever can make the highest volume at the best price, will get the business. Now there's lots of people... And it depends what... Because now chips are so diverse in automotive electronics, in robotics, in wireless, there's lots of applications, so it needs the specialist volume skills, and that's not what we're good at. But we, and I say we, even though I'm not at ARM any more, ARM still designs the best digital engines. And now, with over 100 billion ARM chips shipped, and 20 billion this year, and still accelerating, everybody's using ARM. So now ARM has become the most popular microprocessor architecture on the planet, and you've probably seen Fujitsu's exascale supercomputer is going to use ARM. And so, the business model is still the same, still the same culture, even though the company has recently been bought by SoftBank. I'm still friendly with ARM. And in my start-ups by the way, one of them is a company called Blu Wireless, we're doing 60 GHz Wi-Fi's, and Bristol start-up, ARM has just made a £3 million investment in it, which I'm very grateful for, and one of the guys who used to work with me, he's now on the board of Blu Wireless. So, so this innovative partnership thing continues, and, if we look at robotics, if we look at the future, the potential for ARM, provided they do a good job, is even greater than it's ever been.

[37:04]

And when you support Samsung, when you support Nokia, when you support Apple, you have to have an international organisation.

Absolutely. So...

And really, your third phase really was to build an international organisation.

Oh, there's no question. You know, I, one of the things I said, you don't create a global success by driving a desk in Cambridge. So, employee number fourteen was Tim O'Donnell, working out of his basement in Silicon Valley, even though the board are telling me to hire more engineers in Cambridge. And he made a huge contribution to the company by saying, 'This is what the customer wants, listen to that voice of the customer.' You need the people to understand that, because of cultural difference as well. So, it's not just building an organisation with one culture. It's actually... And how we got Tim, so Tim used to work with me at European Silicon Structures, and what happened when he heard I've got this job, he's on the phone saying, 'Hire me, hire me.' We've had headhunters, Acorn have found some other candidates that I might hire. So, well I'll look at all of them. Anyway, we end up hiring Tim. Takio Ishikawa. My partner in VLSI Technology, who was the first licensee, Cliff Roe, said, 'We've got this really good guy in Japan, he's not getting on well with his boss, he's looking for another job. Would you like to interview him?' So again, this is the other thing I say to, we can get hung up on business strategies, spreadsheets, transistors, clock speeds. The reality in business is about people. It's about contacts, it's who do you trust, who do you believe, and working together. And so, so we created an international... Well we, we started with an international organisation, because the seed capital came from Apple, in Silicon Valley, we had Larry, we had VLSI Technology in Silicon Valley, that was Cliff Roe, and the third investor I got was actually Nippon Investment and Finance, which was Daiwa Securities. We needed a bit of money to keep the lights on. And that was in Tokyo. So, the company's always been global. And I've always been on an aeroplane. And in my time with ARM, I did two long-haul flights every month, right. I'd typically be in Asia... And that's, that's the way it is. Because, you get more from sitting... You can have, you can have Skype calls now, but face-to-face stuff and real discussion is what's important.

[39:12]

Did you work with Steve Jobs?

I didn't work with him, because he, when we started ARM, he was out. He... Because Sculley had fallen out with him. I have met Steve, and we've had some chats, but the reality is, he... I chose, you know, the value-add from Apple for me wasn't going to come from talking to Steve Jobs. I did have a couple of meetings with him. But his skill was in designing the Apple products and doing... But I worked with these engineers very closely, and, I've had, you know, I had calls with him and so on, but... There was one call when I, that I did have a chat with him over, when we did a deal with Intel. So he has strong, but he had strong opinions, right. And so, we had a, we had a nice chat. But, I'm not into celebrity limelight. I think, I think that is overrated, in all honesty.

[40:00]

You mentioned Intel. Intel are convinced they have to have design and they have to have manufacturing. Because it's like a clock, they say, it's tic-toc, and stick to it.

Mmm... I... So, I think that's a bit unfair on Intel. So, my per... I'm a fan of Intel. So why, what is a strength of Intel? A strength of Intel is, probably, I don't know if this is still true, but, they have very very good advanced manufacturing facilities. And, therefore... and they've got all this capital investment. So they want to capitalise on that investment. And for certain products, what you just said is correct. However, it's not correct for everything. So, Intel is a today ARM licensee, and it is having some chips made by Taiwan Semiconductor Manufacturing. So, it's not as black and white as the headlines might suggest, and it's a lot more complicated. What you have to do is use your skill set in the world we live in today, and how the world is going to change tomorrow, and it changes very quickly.

[40:57]

I did some analysis several years ago of four semiconductor companies, so to speak, ARM was one of them, Qualcomm was another, Intel was the other, and Taiwanese Semiconductor Company was the other. And you can see what I was doing.

Exactly.

Pure design, design and manufacture, design manufacture, and pure manufacturing.

Yes.

And you, your ARM company, came out, in terms of most of the financial matrix, right on top.

Yes.

Because when you get it right, you don't necessarily, you don't have to open up new plants, when you've got a big new order. What you have is a number of new engineers to support that customer, and then the money rolls in.

Exactly. But in fairness to Qualcomm, although their finance has not been so good lately, Qualcomm's business model early on was not a lot different from ours. I mean, I was involved... You remember, Qualcomm started with a little bit of software doing... I'm trying to think what it was called. It was a, an email client and so on. So, I've watched Qualcomm, Qualcomm has gone bigger and more resource than ARM and more valuable. But, some of the... Because Qualcomm licenses as well, and the power of Qualcomm's licensing in places like China and so on is important. So, of the four companies you've mentioned, Qualcomm is closest to ARM. Taiwan Semiconductor Manufacturing is at the opposite end of the spectrum, and, you know, that's... The world of semiconductors has changed dramatically because of complexity, it's as simple as that. You can't do everything yourself, and you can only make money if you do what you're the world's best at.

[42:31]

You did an international float of the company.

Yes.

IPO in '98, both in Europe and in the United States.

Yes.

Why?

Yes. So, one of the things you do when you're about to float a company is, you take advice from banks, and it was Morgan Stanley we selected to do our IPO. They recommended the dual flotation. And the reason why they recommended it was this. Valuations in 1998 of technology companies in America were much higher than in the UK, so they thought we would get a higher valuation on Nasdaq. And then since ARM had Acorn as a shareholder, and Acorn was partially owned by Olivetti and was also a publicly traded company, there would obviously be European appetite. So it was Morgan Stanley's recommendation to do the dual listing. You know, that was an exciting time, because we did tours of most of the European capitals and most of America. That was the first time I went in an executive jet. The joke was, it's very cost-effective to do an IPO with an executive jet, because we cut two weeks down into three. I nearly had a joke about a new RISC factor in the prospectus, that, Jonathan, the CFO, liked executive jets, but that was a joke.

And this opens you up now to public scrutiny...

Yes.

...to thousands of shareholders...

Yes.

...and to a degree of pressure from the outside to really perform.

Yes.

And there were times at which ARM was being heavily criticised for not being particularly open about, for instance, an acquisition you made, and a profits warning.

Well, you can't... So here's the issue. So if you're the chief executive of a public company, you have some problems, so, we can take each of those... If you... So, and again, as a licensing company, so you've got, a who's who, you've got Texas

Instruments, you've got Sharp, you've got Apple, you've got Samsung, you've got Intel. All of your data that you put out is being analysed by everybody. So, the issue is, how much can you tell the public and how much can you keep secret? And as an IP licensing company, you've got to keep some secrets. So, there's a bit of a dichotomy there. I think the other thing I would say is, there's a difference between London and Silicon Valley. So, no disrespect to London, but, I would say that, the criticism sometimes is, I'll criticise you so you give me the information I want to hear. And I would say, the UK, certainly at the time of the flotation, 1998, the UK analysts didn't really understand what we were doing, and the Americans understood it better. So, we would get different criticism, very... The press criticism in the US would be very different from the UK. So that's point one. Point number two, over the acquisition. This is one of... A tough thing. So, here's the deal. We are buying a company, Artisan, which is a public company in America, and it could be blocked by antitrust. So I am being advised by lawyers what I can and can't tell my shareholders. And, I would like to have told the shareholders more, and the day, you know, the day the Artisan acquisition came out, announcement came out, the share price fell 20 per cent, and they asked me lots of questions, and I said, 'I can't tell you.' Because, we could have been blocked from that acquisition. So I was being driven by the lawyers. And so, sorry shareholders, can't tell you mate. Good news, by the time the actual acquisition went through, the share price was back where it was, you know, that's, that's just life. So... And then, fortunately, on my watch as CEO, we never did a profit warning. My timing was obviously impeccable. Poor old Warren, when he had been fairly newly CEO, did his first ever profit warning, and I remember it very well. And the reason for the profit warning was this. So, ARM's business is this, it's, at the time it was more licensing than royalties; it's probably more royalties than licensing now. But what happens is, you do these licence deals, and you get a third of the income when you sign the deal, a third of the income when you ship the data to build the chip, and a third when the chips work. That's what happened. And so... And this is cash, cash upfront for a third of this. So it's revenue recognisable. The profit warning was very simple. It was a particular quarter. There were two deals, and there were some millions each, that we thought were going to close. We were told they were going to close, right? But Mr so-and-so is away and doesn't sign the paperwork. So what happens is, the deal that's supposed to come at the end of, I think it was Q1 that was missed, or was it Q2? I think it was Q1. The

deal was supposed to close in the end of March, comes in in late April, and you've missed your quarter. And that's life. I think what's remarkable about ARM, it's 26 years old, and it's only ever missed one quarter, right. And I think, this is again where people should be smarter really. Because ARM had never missed a quarter, and because everybody else misses quarters all the time, ARM's the exception. It will never miss a quarter. So of course the minute you miss a quarter, it's a disaster. And that was a good baptism of fire for Warren in his new CEO role. He says that's the toughest...

[47:45]

But you were Chairman by now?

I was Chairman, yes.

And a particular role for chairmen, is it not, is to sweeten up the City?

But you can't sweeten up the... The facts are the facts, and the reality... And this what I say to the City. Don't sweeten up the City; City get real, right? And, if we look at where we are now politically, there's a lot of nonsense. The numbers are the numbers. The reality is, this is the frequency of the deals. Get real guys. And I don't believe in sweetening up anybody. I believe in telling them the way it is. And if they don't like it, hard luck. And I remember again, when the ARM share price fell, it fell 20 per cent. This is the day of the Artisan acquisition. I was pulled into a meeting with my biggest shareholder, and there were two people there. And one of them hated me, abused me, said all sorts of nasty things at me, and I just sat there and smiled. And I explained to the other guy why it had happened. This is over the Artisan thing. And he believed me. The guy who didn't believe me sold his shares, and lost quite a bit of money, and the guy who believed me made money. So, timing is everything, and, by the way, it's up to you to form a judgement on me, I'm not perfect, right. I make mistakes. But I don't believe in this sweetening-up thing at all, it's nonsense, absolutely... And, that's what's wrong, it's, it's... We need to get rid of that. We need to be trans... And, and we need to be more transparent. But unfortunately, the world isn't, you know, you've got hedge funds and you've got trading and you've got all sorts of things. So the world isn't as transparent or as fair or as reasonable as it

should be. The joke is, with the transistors, they don't lie to you. What's on the oscilloscope is real. And with human beings, you have to make a judgement call. And in all the start-ups I'm involved in now, my job is to advise. And I say to them, 'You can listen to my advice, you can accept my advice, and you can reject my advice. It's absolutely fine. I'm just here to advise you.' And as the chairman, it's your job to communicate as effectively as you can, and I think we manage to do that. But it's never perfect, right, it's like, like football teams, occasionally they lose a game.

[49:49]

So you were ten years a CEO.

Yes.

And you helped build a company into a \$10 billion operation.

Yes.

Value. Value; I don't mean turnover.

Yeah yeah yeah yeah yeah.

I mean, real value.

Yeah yeah yeah.

Yes. No ego, just value.

Well, it's... OK, but what's value? You know.

It's whatever people will pay for it.

Yeah yeah. But, but the more important thing... So, so that's nice. But let me tell you something that makes me feel better. When I went and saw some poor people in

Morocco with their ARM-based mobile phones, doing e-commerce on their mobile phones, and improving their quality of lives, or somebody who's unhealthy and keeping them alive, that makes me feel a lot better than, it's worth ten billion. What's money, you know? You don't, you don't take it away with you. So, it's nice, it's a nice label. But, to me, it's, it's health, happiness, satisfaction, fun, freedom. These are all the, all the important things in life. And as they say, you know, money doesn't buy you love. It, money, having enough money is, is help. But I'm not... And this is, I think this is the other difference. I am involved in start-ups and venture capital, but I'm much more interested in the innovation and the new technology than I am in making the money. The money is a useful by-product, you deserve to earn something for your money. So, yes, it's nice, and... I mean, I look at SoftBank today, so SoftBank are buying ARM. It's 30 billion. And I don't know if you've seen but SoftBank have sold 25 per cent of ARM to the Saudi fund as a currency to move it on. So, the good news is, that money's going to go into other start-ups, and all the rest of it, but the numbers are just the numbers, you know. If you're worth a few bob, what's a few more bob? You can't spend it.

[51:35]

And you left, just about a decade ago, from ARM.

Exactly.

It's still in your heart.

Yeah yeah. I'm still... So...

What did you feel with the sale to SoftBank?

So my, my big...

This is a Japanese company.

Yes yes yes. Well I love the Japanese, first of all. So, I personally, culturally, if you look at the licensees who contributed most to ARM in its early phases, were all

Japanese. Toshiba, Sharp, Sony, Hitachi, NEC, and so on. and I spent a lot of time in Japan. When we did the deal with Nintendo and Sharp, I personally went to Japan ten months out of twelve, and I love the cherry blossom season, and the *geiko*, and the *meiko*, and the mountains, and the trees, and the skiing and all the rest of it. So I love Japan country, and I love the Japanese. So, from my point of view, this is how I look at it, ARM has been a private company for eight years, OK, backed by Acorn, Apple, VLSI, American, two Americans, one British, and Nippon Investment and Finance, a Daiwa Securities company in Japan. So it's been global. We happened to float the company on Nasdaq in London. The shareholding of ARM on, you know, well it's a public company, 60 per cent of the shareholding is outside of the UK, and 99 per cent of ARM's customers are outside of the UK, and by now ARM's got 1,000 people in Bangalore. So the globalisation of the company's got even greater. You've got design centres everywhere. And me personally, this is what I do in my start-up world, I'm travelling around all these design centres. I mean I find Bangalore a fascinating place, the pace of change there. Look at how Shanghai has changed. So, so to me personally, clearly it's nice that ARM is a very successful FTSE 100 company, listed on the London Stock Exchange, everybody makes money out of that. It's great. It's a nice label. However, who owns the company, to me is kind of irrelevant. And provided the culture of Masayoshi Son and Simon Segars, who's the CEO, remains good, the chances are that this acquisition, I'm always an optimist, can actually make things better, and I'll just give you an example. The direct investment in Blu Wireless, the 60 GHz Wi-Fi company that I'm involved in, SoftBank was as keen on that as ARM were, because, as they're a mobile operator with wireless, they want to get more into the technology with ARM. So what I said, you know, on the day of the announcement was, it's too early to tell whether it's good or bad, it's either going to be great or it's going to be terrible. Probably one of those two. Because, ARM is all about the quality of the engineers and the people, and if you lose them, you've lost everything, right. So... But what's happened, because, I keep in touch, again through the start-ups and so on, what's happened is, some people have been promoted, some people have made quite a few bob and decided to retire early, and put that money into new start-ups. So at the moment it's OK, OK? And I still keep in touch, and I have dinners with people, I'll see some people tonight, so I'll say, 'How's it going this week?' And, what I would say is, there is a change for the people, because, it was, in inverted commas, 'our company' if you like; now...

I think Hermann Hauser called it a bit of a disaster, didn't he?

Well he did, but, the other thing I would say about Hermann, and you might not believe this, but Hermann never worked for ARM, has never had anything to do with ARM. He was Acorn. So, he... And he lives in Cambridge. So I think his view is more narrow than my own, and for him personally, of course he would prefer it if it was still there, if it was still independent, of course. But you can't change the past, and if you talk to Hermann now, because he's still a friend of mine, he's more positive, and he says, 'Yes, I can see some good things are coming out of it.' And, again, the history of life, I mean I'll just tell you something. When I signed with Texas Instruments, I got crucified for doing that by VLSI, who were my partner, they were really cross with me, and the reason was, they were in a lawsuit with TI over packaging, patents on packaging, and they kind of, they kind of fell out. And then a year later they said, 'Doing that TI deal was the best deal that ever happened.' And what I would say is, I'm not saying that, that... The SoftBank deal is too early to tell how good it is; let's judge it in five years' time. But it's not a disaster, and it looks all right, and it might be very good. And let's give it time.

[56:01]

In the last ten years you have been supporting and developing a number of ventures, and mentoring young engineers, male and female.

Yes.

And, seem to be thoroughly enjoying it.

I do, I love it.

What three things would you say to young engineers today, in the current condition of the industry, what should they be doing, how should they do it?

So, the first thing I say to the kids, there's two sides of being a human being. There's the logical side, and there's the emotional side, right? And what I also say when it

comes to hiring people, you want to hire people with a high logical intelligence, and a high emotional intelligence, an equal dose of both. Because, the emotional side is about communication, passion, all these things. So the first things I say to the kids are, 'What do you really love doing? What makes you really, really happy?' And, my interview question is, 'What's your biggest achievement?' I usually start the... And then I usually go, 'What's your biggest failure?' So my starting point to the kids, do an honest evaluation of yourself. What do you love, what do you hate, what's your biggest success, what's your biggest failure. And kind of write that down, on a single piece of paper. Because, some kids, they just do what mummy and daddy tell them to do, right? Other kids, like me, I had my radio and TV repair business, so, I've always done what I want to do, right? Helped by my parents. But not everybody knows what they want to do. But do some serious analysis first on a piece of paper. Then the second thing is, 'Where would you like to be in 20 years' time?' So, what are the dangers in life? Well we've got to pay the rent, I've got to get a mortgage. You've got all these problems. Have a bit of a dream. So I say, 'We're going to be the global RISC standard.' Everybody thought I was mad. Warren will say, you know, he thought I was bonkers, he actually said that in a speech. But I kept saying it, and I kept saying it, and we did it. So you've got to, you've got to dream, you've got to think beyond the possible, and back off to reality. And then the other piece is, I really believe in SWOT analysis, strengths, weaknesses, opportunities and threats, and be very honest about that. And then the other thing to the kids which is very very important, surround yourselves with people you trust, and, if you love them as well, so much the better. But basically, don't just be an isolationist. So it's about people, it's about teams. And this is the other bit. It's, think a bit about what you are culturally. So... You know, and hobbies. So, if you like playing tennis, and you mix with tennis players, and they happen to be engineers, or you like to go skiing. So, so think about some of those things, and write it down. And then what I say to them, is, 'Write down your one-year plan. And for your one-year plan, write a monthly report, achievements, problems, plans, and just keep looking at it and just keep going back and keep adjusting it.' And, it's fine to break the plan, but... And I do believe in a one-year plan, that's the short term, it's the P&L, it's the, it's the annual plan for a company. I believe in a strategic plan, because the ten, 20 years out, how are we trying to change the world, what are we trying to do differently? And then I believe in a tactical plan, which is, the things we have to do today to hit the strategic plan. So,

in ARM's early days, it cost us money to buy patents, right, hurt the P&L, but if we didn't have any patents, we'd be dead. We had to develop the tool chain on the IBM PC, cost us money, no revenue. So those are the tactical things that you have to do today that hurt the P&L. And now what are the things we can't do? Don't waste money. Don't waste money, right? Cash is king, would be the other message. And the other thing I say to the kids, 'You can do anything you want. Just work out what it is you want to do. And then, the other thing you might do, find some older people like me who have made all the mistakes, and have a chat with them, so that you don't make the same mistakes that we made.'

Thank you Sir Robin Saxby.

[break in recording]

[59:58]

We're back at the Archives of Information Technology with Sir Robin Saxby, and he's going to talk about his early life.

You were born in 1947 in Derbyshire, in Chesterfield.

Yes.

And what did your parents do?

So my parents were just ordinary working people. My dad worked in a hardware factory and things like this, and he actually was a security officer, was his last job. And my mum was a housewife. In those... The way I was brought up, the mum looked after the kids and the dad went to work. And the other thing about my dad, he had his male life which was to go down the pub, the Queens Park Hotel, and play nine-card brag with his friends. And as I got, once I was old enough to drink, I could join my dad and play nine-card brag.

[1:00:41]

And, you went to a primary school. What did you actually get from your parents that makes Robin Saxby?

So, they were very supportive, very loving, very caring. My dad was more the sportsman, so he threw hard balls at me and I had to catch them, you know. So he toughened me up with his cricket. And he was a good footballer as well, and tennis. My mum and dad met, they actually won the tennis championships when I was... I love tennis. So I got that from them. My mum was really the supportive, almost, anything I did was OK and she would support me, right? And so she was the supporting mum. My dad, with my radio and TV repair business at thirteen, my dad got the purchase orders from his mates in the pub, and my mum acted as the technician and held the chassis while I was soldering. So they were a warm family. The other thing is, they were both one of seven. They were the youngest of seven, so I had a lot of aunts and uncles, and grandparents and so on. So I was in a warm, loving family that didn't have much money but were very fair and very kind.

[1:01:43]

It's a relatively unusual name, and the only Saxby I came up with, was the people who make the pies.

Yes.

Any relationship?

So, so probably distantly. I've done a family history. Because my dad's dad died when he was only three, and so I wanted to know about his side of the family. So my dad's dad, he was a colliery surveyor in mining in Derbyshire, Bolsover Colliery. But he came down from the Durham coalfields. And his dad, it turns out, was William Alfred Saxby, was a master mariner who was born in Essex, and brought coal from Durham to London on his own sailing ship. I know quite a lot about him, because I found the records. And his dad was a publican in Kent. So the Saxby origin is actually Kent. And they reckon it comes from Saxe-Coburg in Germany. That's... Oh I've done, I've done 23andMe and the DNA. And, I've got German blood, Viking

blood, and French blood, so I'm not, I'm not too much British And Irish. A bit of Irish in me.

[1:02:47]

And you passed your Eleven Plus and went to Chesterfield Grammar School. How was that for you?

It turned out to be great. It was, it was... I was very fortunate. The grammar schools were fantastic. Because, they were structured on public school lines, discipline, sport, debating societies, art, everything. And, that really helped me, not just in passing my A Levels to go to university, but the school societies, I was Deputy Secretary of the Senior Literary and Debating Society, and I had to debate alongside Stephen Wakelam, who was the Secretary, and he went on to be a great playwright. So what the school gave me is putting me with the best of the best. And probably... The school motto was '*Non Quo Sed Quomodo*', 'Not What But How'. And I think that's very true. I've actually written a song, *Non Quo Sed Quomodo*. It's not what we do, but how we do it. How we apply ourselves. And, I think that's another message to kids. Think about the how at least as much as about the what.

[1:03:42]

You moved to the University of Liverpool. You applied and you got in.

Yeah yeah. That was my first choice, I was very happy to go there. I picked it because it was on the coast, and it was the city, and it was a swinging city, the Beatles music, I've always loved music. Again in my electrical career, I used to build valve amplifiers, and, for the rock 'n' roll clubs in Chesterfield, and again when my son studied I did valve amplifiers for his guitar. So, I went to Liverpool, loved it. Liverpool is probably my favourite city in the world. The Scouse wit and humour is fantastic. And we're still supporters of Liverpool Football Club. Had to do that because my wife said I had to become a Liverpool supporter. She wasn't too impressed when I took her to see a game at Chesterfield, at Saltergate.

[1:04:28]

What is the Saxby style of management?

It's a we not me. It's a teamwork. It's a, let's be brutally honest with each other and let's get some facts on the table. And there are no rules. It's like, every opinion counts. Let's kind of whiteboard and brainstorm. Let's look at all the extreme positions on everything. And, then let's work it out.

[1:04:50]

You seem to be brutally honest sometimes. That must have got you into trouble.

It has. It has. A lot. So, I was told at Motorola that being brutally honest when I told the chief executive that our quality wasn't good enough, and explained why, my boss told me that I would have had a promotion three years earlier if I hadn't told him that. When I had a boss at Henderson, he said, 'In that meeting with Norman you admitted you made a mistake...' – sorry, meeting with Stuart[?], 'You admitted you made a mistake. Never let me hear you say that again, it's a sign of weakness.' At the time I believed him, but I realised he was a bully, and actually admitting your mistakes is a good idea. So, the good news about being brutally honest is, if you don't offend the other person, or if you do offend them and you say you're sorry, you can move to faster communication and you can get things done quicker. And then the other thing I would say is, brutal honesty, you have to... I live in a culture, a world of engineers. I get on well with my son-in-law who has a degree in computer science, and we start by defining the methodology and the rules under which we're playing. Brutal honesty, you have to define the ground rules as to what that honesty means. Because what looks good to one environment doesn't look good to another. So respect the other person. And as I get older, and I have more time to look at other people and other ideas, I realise even more there's a lot of things that I don't understand and I don't know, and my wife understands better. For example, she was a teacher; she's more looking for the weakest link and helping the weak along. As a chief executive, you hire the best and you fire the not so good ones. That's, it's a different world.

[1:06:24]

What drives you now? Because you don't have to do all the things you are doing.

I just love being alive. And, I love, I love new things. I love new challenges. I...
And I'm very, I'm fortunate, you know, I'm fit, I'm healthy. And I love the start-ups.
So I'm involved with eight start-ups, I'm involved with the Royal Academy of
Engineering, past President of the Institution of Engineering and Technology, Fellow
of the Royal Society. So, the benefit of all of these organisations and start-ups is,
young people can connect to older people. Young people have energy, ideas, they're
in the new world. You know, the millennials, the Internet's been around all their life.
Benefit of older age, you have more experience, you've made more mistakes. You
can share ideas and you can hopefully get a better result.

[1:07:14]

You were knighted in 2002.

I think so. It might even have been 2001, but I'm not sure.

*What does that knighthood give you, apart from get you a table in a restaurant that's
already full?*

Well, I don't know if that's true. And British Airways will probably lose your
luggage if they find out, on purpose. But... No, it's a joke. When you get the letter
saying you've been offered it, you've got to make a decision, yes or no. And me
being me, I said to my wife, 'Should I accept this or not? I need to sleep on it.' And
the reason why I didn't want to accept it necessarily was, I don't want to just get
something I haven't earned. And, talking to my wife, she said, 'Your mum would be
very pleased, to have had a knight, and, there aren't many technologists who have got
knighthoods, so you might be able to do something useful for your community.' So
it's a lovely ceremony. It's a label. And, I'm very much, call me Robin, but if you
don't want to talk to somebody, you can get your PA to say, 'Sir Robin is not
available.' So, it has its advantages, but it's, it definitely is a door opener. It's good
at speeches. But... And, you know, I've met a lot of the Royal Family, they're very
nice, they do a lot of work for charity. So, it's just, just something to have. But to
me, I mean I happen to have a Faraday Medal of the Institution of Engineering and
Technology. In all honesty, since I'm a big fan of Michael Faraday, that probably
means more to me than the knighthood.

[1:08:41]

What's your biggest mistake that you've made in business?

Oh, I've made so many. I'm just trying to think. I mean they're all... There's loads. So, you misjudge a situation, you misjudge in negotiation. I think the biggest mistake, or, the hardest thing to get right all the time, is judgement of people. So the classic one is, I've always believed in having succession planning, two names in the box, and, in one case I promoted the wrong person. So that would be one of the bigger mistakes. In another one, I put Warren East, who became the Chief Executive of ARM after me, that was a right one. So, so those are the sort of mistakes you make all the time. And if you really believe in a person, you tend to want to support them for longer than you should. You're not, you're not brutal, or, or tough enough. I mean I'll just tell you a mistake I made today. I'm going to have a meal with Simon Segars, the Chief Executive of ARM, in California, and I got an email back saying, and I looked at the date, and the date was wrong. And I went... I said, 'Oh, we've got the wrong date.' But actually, when we dig into it, it's the difference in the time zone, and that's the technology for you, you see. And I've apologised to Simon's PA for making the mistake. So, I'm making mistakes all the time, and that's part of life and part of learning.

[1:10:02]

When you're not being showered with awards and honours, and you have been showered with awards and honours...

I, I've got quite a few, yes.

You've got quite a few. What do you do?

Well, I mean what I do. So, these start-ups, I mean, the Royal Academy of Engineering Enterprise, let me tell you about this. So, I was made a Fellow of the Royal Academy some years ago, I can't remember, and, that was quite an honour at the time, but now I'm one of the people who's been around. The Royal Academy has been fantastic at PhDs, supporting professors, Nobel Prizes and all the rest of it. But

we haven't been very good at wealth creation. So a bunch of us thought it would be a really good idea to create the Royal Academy of Engineering Enterprise Hub. And I personally put some money into this, a charity. I've also put some money into Liverpool University. There's the Robin Saxby Laboratories, and there's a management school. So I've given something back. And, so what I'm interested in, I think if you're the kids now, it's harder to get money, it's harder to start, it's more difficult. I went to university on a full grant, free education, and so on. Now it's much harder. So, the Royal Academy of Engineering Enterprise Hub, we've created I think 80 start-ups, and they're all very exciting, all new stuff. And what we do as Fellows is, we give them free mentorship, mentoring, like I'm talking to you now, just advice. So one of the things I'm due to do, we're about to have our Enterprise Hub showcase day, I think next week or maybe it's the week after, and then, I'm also doing with, I think six of the start-ups have been selected by the administration side of the business, a lady called Anna, and they're going to do surgeries with me, and we're going to, we're going to talk about those. Now one of them that I met, this is another thing that actually happened, Sam Cockerill, of a company called Libertine that's doing free piston engines, I started off mentoring him, and then, I said to him, after we'd done a lot of mentoring, I thought, this guy's really pretty good, and this idea's really pretty good. So I said, 'Sam, would you like me to write a cheque out?' And so I've written a cheque out, and I've just had another email today, one of my start-ups. So I've got eight high tech start-ups that all have the potential to change the world in the same way that ARM did, because I'd like to do it a few more times if we can, and I'm trying to help them with a bit of money and a bit of advice. And I'll give you... Now this is what I'm very excited about. There's a company called Sontia. This has got the best sound technology on the planet. I'm going to demonstrate these headphones to you. We've just announced the licensing agreement with a major Chinese partner. And Sontia has people in Sheffield, Silicon Valley, and Shenzhen, China, that's where the people are. But I'm very excited about this. And this even is going to apply to movie theatres. So in the same way that ARM has changed the world of chips, I believe that Sontia technology can get into every loudspeaker, every cinema, every headphone, everywhere. That's, that's my dream for Sontia. When you've heard these, you might believe me.

Thank you very much Sir Robin Saxby.

[End of Interview]