



Larry Benjamin

Interviewed by

Richard Sharpe

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Via Zoom

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Welcome to the Archives of Information Technology. It's 8th November 2022. And in the Archives we intend to capture the past and inspire the future. My name's Richard Sharpe and I've been working in, covering, researching, writing about, digging around, maybe making a nuisance of myself in the IT sector since the early 1970s. Today we're going to introduce the man who gives us really two for one. On the one hand he's a noted consultant ophthalmic surgeon with a great interest in the use of IT, and he is Mr Larry Benjamin, and that shows you that he's not a doctor, but a Mister, a consultant, a surgeon. But also he's the son of Alan Benjamin OBE, who had a very important role in developing and pioneering parts of the computer side of the IT sector in the sixties, seventies and eighties.

Larry, you were born on 5th September 1956, there were about 300 computers in the world then – only 300 – Bell Labs was experimenting with something they thought might be good in switching, called, which they called the transistor, and some guys in IBM were fiddling around with a new programming language, which eventually become Fortran and was launched the next year. So this is a propitious time to be born. And you were born in Johannesburg. Why was that, apart from your mother obviously being there?

So my father's mother was quite ill with, I believe, asthma and was sent to South Africa to warmer climes, as was done in those days, for her health, so my father and his father emigrated there to look after her. Unfortunately she died, I think before they got there, but he spent then some formative years at university there, met my mother, had some children, and then brought us back after the Sharpeville shootings in 1961, which was a sort of politically, a time of political unrest, as you can imagine. So he was British and my mum South African and we came back in 1961 and I've been here ever since.

[Break in connection]

[00:02:57]

We were starting with Johannesburg, why your parents were there.

Yes. So my grandmother, my father's mother was sent there for her health, for health reasons, to recover in warmer climates. My father then was taken by his father to emigrate there to look after her and I think she died either before they got there or shortly afterwards, but he stayed, went to university there and met my mother.

What did he study at university?

So I think he did chartered accountancy, if I remember accurately, at the Witwatersrand, and then worked for my grandfather, my mother's father. That's how they met, I think he was invited to one of their parties or summer occasions and they met, had three children and then in 1961, you may remember, there was some political unrest and the famous Sharpeville Shootings occurred, and at that point they decided to bring us back to the UK. So we came back in 1961 and I've been here ever since.

Did he still have his characteristic pencil moustache?

He did, he did, right from the early days.

The David Niven of the software industry.

That's right, that's right. In fact I copied him when I was younger, but I shaved mine off when the kids were young.

[00:04:22]

Okay. He presumably encouraged you in education. What did you get from your father and then your mother?

So, I think, my father was always very interested in the application of technology. I have to say, he probably was the most impractical man I've known, he couldn't wire a plug successfully, but he was very interested in how other people could apply technology and the use it was put to. So that was always an inspiration really. And he was always teasing and cajoling about how doctors would be replaced by robots and people would be walking around with mobile phones held to their ears in the

future, which we all laughed at. So he was quite prescient in a lot of his thinking and, as I say, always encouraging about what was possible with IT, even though I think, I think in the early days he did, when we came back to the UK he studied at night school for a few weeks and learnt machine code. And I think he wrote the first, he tells me he wrote the first program that marked A level scripts, the multiple choice in A level scripts. So I blame him for, you know, not getting straight As at A level, obviously. But... so he was sort of practical in computing for a short while, but essentially was an organiser and it was his great skills with people and organising things.

And your mother?

So she was a stay-at-home mum for most of the time but did actually do odd bits of work. She was, I think also did some sort of accounting, secretarial work. She didn't go to university. Married my father quite early on and looked after us kids really. So, got a lot of home life skills from her, although maybe not cooking.

How many siblings do you have?

So I have an older sister and two younger brothers. My youngest brother born in the UK just after we got here, not long after we arrived.

Right. So that's quite a sizeable family, four of you. And where were you in England?

So we lived initially with my grandparents in, near Kenton, for a short while and then we bought our first house in, near Wembley, Preston Road, on the Metropolitan Line.

Right.

I remember we could hear the cheering from the 1966 World Cup Final from our back garden. We were close enough for that. So Wembley, really, north London. And I went to school in Kingsbury.

What type of school was that?

So it was, I was the second year of comprehensive intake. My sister, who was two years older than me, got into the grammar school, which was Kingsbury High School, Kingsbury Grammar School, and then they were joined with Tyler's Croft Secondary Modern School, which was next door to it. Famously, it's where Charlie Watts, the Rolling Stones drummer went. And became Kingsbury High School. So it was a big comprehensive and I was there till 1974... 5.

Okay, I don't want to quite press you, but surely your father had enough money to send you to a private school?

Well, in fact he probably didn't, in fact. In the early days he was, you know, his business was sort of fledgling and we weren't by any means wealthy, so it wasn't really even talked about. My sister had got into the grammar school and I, I think I wanted to just go to the same school she did and so it was convenient where we lived at the time. And in fact it wasn't bad because we had still, all the old grammar school teachers were there, so our first, second and third years were spent in the Tyler's Croft building and then we moved across to the Kingsbury building where all the old grammar school teachers were. So for O levels and A levels, as they were in those days, we had very good teaching and good education, good sports facilities. So yeah, it wasn't really discussed. I think we, I heard him mention Marylebone Grammar School at one point, but it didn't last long because I think I protested. I just wanted to go to the same school as my sister. So, yeah.

Did you enjoy school?

I did, I did. I think, a lot of sport, I enjoyed that. I was a very keen swimmer and there were good facilities, although a lot of them were outdoor swimming pools in those days which were unheated, so it wasn't very pleasant. But, I think as I said in my submission to you, my crowning achievement was beating Mike Gating in the North Brent diving championships one year. I mean I know he's a cricketer, but you know, it's my only famous sporting connection really.

[00:09:12]

Okay. And had you seen a computer by then? Did you see a computer in school?

So in my last year at school, my upper sixth year, we were bought, or brought, a base-8 computer, which was doing the rounds of all the schools. I remember it had a single row of digital readout across the top and we were just shown how it worked. We were also sent to Middlesex Polytechnic to do some basic programming, and I remember we did a bit of BASIC on a computer there. But that was it, really. It wasn't until university that the Apple I computer and the various, the Commodores and... I remember my brother had a Sinclair Spectrum, or a ZX81, and then I had a Sinclair Spectrum, with tape drives and various things. So fairly early exposure to that technology, but not at school. At school it was all slide rules and log tables and that sort of thing.

Did your father take you to work?

Take me to work? So for my first year at university I lived at home because I was told by the local authority that I wouldn't get into residency because I was living in London anyway, and I went to University College in London. When I got there, most people who lived in London got into halls, so I'm not quite sure what that was all about. But I lived at home for a year, so I used to get a lift in with my dad in the mornings, some mornings, yeah. After that I moved out and lived in London.

I meant did you get into his office or see anything...

I beg your pardon, sorry.

No, it's alright.

Yes. I remember being taken to, he had a company called Systems Programming Ltd, SPL, and I remember going to those offices once or twice, and I also remember seeing one of his early computers, which I seem to remember was the size of a sort of three-bed semi house and used punch tapes I think. I remember my mum lining up punch

cards with knitting needles at home. I didn't know what it was for, but I remember that. So yeah, there was a lot of that sort of early technology around and I saw some of the computing, which was lots of flashing lights and spinning tapes and things, but you wouldn't let kids play with them in those days, I don't think.

[00:11:26]

No. What drew you into medicine?

It's difficult to know. I had an uncle who was a paediatrician, and he was very inspirational. I couldn't think of a lot else to do, really. It was... I very much enjoyed biology and chemistry, or zoology and chemistry I did at A level, and it just seemed the right thing to do. I'm not quite sure why, I don't come from a long line of doctors in the family, so I didn't know much about it, really. But it just seemed to cover all the bases, you know, there was a lot of science involved and I think probably I didn't know enough about it when I went into it. I think people who are brought up in a medical family get very familiar with it. I was much more familiar with technology and that sort of thing.

Were you aware of the importance of your father to the industry after he'd left SPL?

I think, I think at times. I knew he was involved with the, I think he was the first director-general of the Computing Services Association.

Yes.

I knew he was sort of fairly up on things at that point, knew a lot of people. I don't suppose I really got a true flavour of, you know, how well known he was until much later on.

Right. Did he bring people home?

He did, they were a very sociable couple, my parents, they were always having dinner parties and seeing a big circle of friends. So yeah, I met a few people that he knew.

But again, it wasn't really my world so I didn't know much about it. He did, I remember when he brought home the first Apple, it was the pre-Macintosh one, the Lisa, I think.

Yes.

Had a play with that and I tried to get the dot matrix printer working, but couldn't quite. So all that sort of chronic low-dose exposure to IT in all its forms, really. I remember at college, my flatmate, just before we qualified he bought an Apple I, or might have been an Apple II computer, so they were becoming popular. And I do remember at medical school, one of the physiology professors had written a program called 'McPuff', which was about the respiratory system, and it was all numbers, you just had to put numbers in, but you could simulate an overweight man going up in an aeroplane, saw what happened to his blood oxygen levels, and then crash diving to below sea level to see what happened to the oxygen levels. All this was by typing numbers in. So that sort of exposure, you know, you could see the facility. And I remember writing some early BASIC programs for, there's a thing called the Siggaard Andersen nomogram, which was to do with bicarbonate and various other things in the blood in the ITU system, and they had an Apple computer and I used to mess about on that and write small BASIC programs. But they were very basic. So I just enjoyed that sort of, as I say, chronic low-dose exposure to IT and could see the potential for applications in the future. But using computers wasn't routine in medicine until much more recently, really.

[00:14:52]

Can I put two big ideas to you and see how you respond. I don't necessarily agree with these ideas, but I think it would be interesting to use them as lenses – well, yes, you would understand the idea of lenses, I'm sure – as lenses to look at this subject. Number one, IT and particularly the computing side, has often been lauded as about to, or will definitely in the future have a massive impact on medicine, but actually it hasn't. It always seems to be delayed and it always also – idea two – seems to be concentrated in the West on guys like me, seventy-four, overweight with blood pressure problems, so that medicine is concentrated on us. It's got very little to do

with the people in second and third worlds where you have worked and contributed very significantly to. So those two ideas. Now, a little while ago I had a CT scan of brain and body, but that's very old technology. I was running the programs for Sir Geoffrey [Godfrey] Hounsfield, before he was Sir Geoffrey [Godfrey], in EMI research in the 1970s, that's really quite old technology and it has not pervaded as surely people like James Martin expected in his book The Wired Society, or others. That's, so that's number one. Do you think that the impact of IT on medicine has actually been less than it has been expected or lauded to be?

I think the use of IT by clinicians has probably been less until fairly recently. By that I mean for collecting and using data in a sensible way. We're getting better at it and there are good systems around now, but I do think, and I remember the early EMI scanner, as it was known at Northwick Park Hospital, we had one when I was a houseman there in 1980, it had two pixels, I think a black one and a white one, and it was very crude indeed. But if you compare that with the spiral CT scanners of today that can do the same scan in a fraction of the time and give you fantastic detail with a fraction of the radiation, you just see that incremental change in technology all the time. And so I think that's where it's been useful and has actually helped medicine tremendously. Imaging systems, in ophthalmology we use a lot of imaging of the eye and other parts of the body, and they've changed dramatically. There's a thing called an OCT scanner, which is a machine which sends light into the eye and looks at the reflection of it off the retina and that's transformed our management of ocular conditions in the last fifteen years or so. And...

Is that what you get for diabetes?

You would use it in diabetes, but all sorts of other things as well. So the traditional way to look at the back of the eye was to photograph it with a big camera. My other passion in life is photography, so I was always into these imaging systems for the eye. There's now a fabulous wide angle retinal system. I worked on a very early possibility of photographing the back of the eye with a wide-angle lens, very crude but quite useful, and there's now a machine called Optos, which does it routinely and gives you a magnificent wide-angle view of the back of the whole eye, and it's routine in all departments now pretty much. But the OCT scan has changed the way we look

at the retina in cross-section, so you can actually tell that something is now swollen, whereas previously you were looking at it *en face*, you couldn't see whether it was swollen. So it's just transformed the way we manage some diseases, and indeed, Moorfields Eye Hospital in London's recently done a project with Google DeepMind in King's Cross where they've got a double neural network to analyse scans of, these OCT scans of the eye, millions of them from patients in Moorfields, and they've now got the system to the level where the machine is as capable as a consultant with twenty years' experience in getting the diagnosis right first time. So for routine scanning of the back of the eye, it can now be pretty much done by machine. So those sort of things are coming along all the time and I think although we haven't seen, you know, it's not a big step change necessarily, it's just gradual evolution and application of technologies that's been so wonderful.

[00:19:33]

Was there resistance among clinicians, do you think?

Absolutely. And I think particularly for electronic data collection, you know, we're all used to doctors with bad handwriting and writing in notes and trying to analyse what they say. That's almost a thing of the past now because- the downside is, the NHS used to pay me to type and that was a bad thing, because I wasn't very good at typing, so I tried Dragon dictate for a long time, the voice recognition systems, and there are several now that are very good, and I think that's the way forward. You know, if you can get voice translation so doctors don't have to type, it's going to be the way forward, I think. And we've got now systems that, you know, one of the things we presented at the WCIT meeting recently was the use of big data to analyse outcomes in surgery, and that's now becoming possible in a variety of specialties. So it's now happening and I think most doctors, certainly the youngsters coming through, are absolutely au fait with the technology. You know, they're all on their phone all day, they're all used to IT, and in fact I, a son of a friend of mine doesn't own a pen, he does everything on his laptop and he doesn't own a pen. So that's what we've got, it's come to. I quite like pens so I'm a bit upset by that, but, you know, we're getting that way, we're getting to the place in medicine where people just accepted it's going to happen. I think the biggest difficulty for me has been seeing the poor

implementation in some trusts and the resistance to implementation of IT systems and the very traditional ignoring the end user. You know, someone will write a system that looks very good superficially, but when you try and apply it to what it's supposed to be applied to, it slows the user down, because it's the computer making the person do what it wants rather than the person using the computer to do what they want. But I think we're getting better even at that, I think there are now bespoke systems that are so specialised that it is making data collection much easier.

[00:21:46]

And yet, my feet are looked after by the NHS, so I had a podiatry record. My GP has a record of me, but the podiatrist can't get hold of the GP record and GPs can't get hold of podiatry record. And the hospital has a big folder for me as well, but they can't get hold of the GP or the podiatry record and vice-versa. As we know, it's a billion-pound mess that, isn't it?

It is, it is. I mean and Richard Granger tried to solve it with twelve billion pounds' worth of our money and unfortunately failed with a single system. The Spine is useful for some things, the NHS Spine, you can look up most people's allergies, but not everybody wants to be on it so it's not universal. And I agree, I mean I think if you go to the optician to get an eye test, their systems are not allowed to be on the N3 network at the moment, so we can't get access to their data. They're taking part in follow-up of post-op cataract patients, but we can't get access to their data, so we don't know what our outcomes are truly like. And that's being addressed slowly and I think people have realised that actually, interconnectivity is where it's at. GDPR and data protection is to blame for a lot of this, unfortunately, I think the rules are so strict that it's very hard to convince people to let go of their data from one hospital to another or from, you know, a GP to a doctor, it's incredibly hard.

Do you think the rules are too strict?

I think they have to be, they have to be strict enough to protect people's private data, and that's really important. You know, from the point of view of getting insurance, from the point of view of getting a job, you know, there are some data you might not

want to be out there, but I do think that getting the right people to access the right information at the right time should be possible nowadays with fingerprint technology or scans of some sort, you know, identification, and it should be possible, it's just very slow. So you're right, you know, if I want a GP record on a patient, it's virtually impossible for me to get hold of it, I have to write to the doctor and ask for specific enquiries, I can't just get the record, and I think that's silly, in a way. It does make healthcare very un-joined up.

[00:24:18]

Yeah. What about the second part of my big thesis? It's really got, it's only got to do with the first world. It's driven by Europe and United States, and a bit by China.

Yes. I mean, when I went to China with Orbis, the Flying Eye Hospital, what I noticed was that every hospital had a laser refractive machine for laser refractive eye surgery. So even in, you know, basic developing countries they still see...

[break in connection]

[00:25:32]

You were just about to start telling me, and I had suggested to you it's really about the first world, particularly Europe and United States and also increasingly China.

Yes, visiting parts of the third world, or developing world, it is interesting how many of them do have some up-to-date technology. So laser refractive surgery for curing or treating long and short sight is pretty universal round the world, most countries seem to have access to it somehow, again, for private patients mainly. So, you know, where there's a will, as you'd say, there's a way and a lot of the places are becoming much more adept at acquiring technology. Orbis, who I work with, is, part of their mission is to get people up to date with technology, so certainly for ophthalmology, we're trying to install up-to-date machines, make sure they're maintained, because part of the problem in the developing world is that if there's not a maintenance technician or

an engineer to look after the gear it just sits there with a blown fuse and nobody can use it. So we try and look at the whole package, how we can apply funding to...

[break in connection]

[00:26:46]

Orbis tries to apply the technology in such a way, or the money that they raise in such a way that they can implement technological change, but also teaching and training and maintenance of systems and equipment. So I think people realise the importance of it. One of my great missions with Orbis is to try and implement a data-driven electronic patient record and we've now got one on board the aeroplane, which is very good, but we don't yet implement it in each of our projects around the world. So it's all paper based, it all relies on people retrieving data and returning it centrally and analysing it by hand. So you're right, I think there's a lot of room for manoeuvre in the developing world and we're trying hard with Orbis to implement some of that, but it's a big problem.

I'm struck with the fact that in education the little Raspberry computer was so successful. It's almost as if we need the equivalent of the Raspberry computer to spread really, really wide.

Yes, I agree. I mean I think everybody round the world's got a telephone.

True.

And the reason I got a Facebook account years ago – I tend not to use it – but I joined Facebook because I was in Zambia and my son texted me to say that he'd seen a posting on Facebook by the mother of one of the children I'd just operated on giving a comment. And so I joined Facebook and had a look at the comment, she'd just posted it from her phone. So, you know, this was in the wilds of Zambia. And so telephone technology is, I think, the way to go in some of these places, I think, you know, even for imaging, we have a project where a colleague of mine has developed a system where the telephone could take a picture of the back of the eye, the retina, for diabetic

retinopathy, you can GPS locate that patient because the phone is with them at the time and you know where to go back to next year to find him or her again. So it's all happening and, you know, to base some of it on that sort of technology I think would be sensible, because it's universal.

[00:28:57]

You, in terms of your scholarships and awards, you have the Kodak Photographic Bursary for investigating retinal photography. Was that that thing that you described?

The wide-angle, wide-angle pictures, yeah.

What about the Oxford Region Support Grant for Developing of Computerised – something - Model?

Yes, so...

Strab-masis... What is that?

Strabismus, it's squint. So if you look at my eyes and I do that, that's a squint.

Right.

And a lot of children are born without the ability to use both eyes together, for one reason or another, so they don't have stereo vision. And socially it can be quite a barrier to development if the eyes are not looking in the right direction. So some of what I used to do with Orbis was straightening squints. And when I worked in Oxford we had a craniofacial unit which was dealing with children with inherited disease to do with the formation of the skull and the bones of the skull whereby the actual orbits of the eyes were rotated abnormally and so they had very peculiar eye movements. So I had the idea of trying to computerise these eye movements to analyse what was going on and I enlisted the help of a, in fact a nuclear physicist who was working at the Joint European Torus Project in Oxford, he was the friend of our

nanny, and he was trying to learn, I think it was C++ at the time, and so he said he would write this program in C++, initially free, and then eventually we got some funding and we paid him to do it properly. So we have a model now which runs on a PC which can, it draws two eyes on the screen with all six muscles around each eye and you can move the eyes in any direction to see what's happening in each of the muscles, and then you can actually operate on each muscle by moving it appropriately and see what happens to the position of the eyes. You can also rotate the orbits to see what's happening in these children to produce the strange eye movements. So that became an available product, clinically available product, we gave it away free. It's kind of old now, it's about fifteen years old, so I haven't updated it, and I in fact the other day was thinking about trying to get some more funding to get it updated, to give it to partners with Orbis around the world, because it's a very useful learning tool for surgeons trying to anticipate what to do in these operations. So, yes.

Sorry. Is that part of your agenda now?

Sorry, say again?

Is that part of your agenda now, to go back over your work and to see what can be advanced?

Yes, I think I've got, I'm retired now, so I've got a bit more time and I think this program was very useful when we developed it, and I think when I see what still goes on around the developing world, it would be nice to just give it to people for them to be able to learn what to do surgically and then teach others with it. So, yeah. I mean in its current form it would work. I haven't tried it on a P... I'm a Mac man, so I haven't tried it on a PC for fifteen years, I don't know if it still works. But I, you know, we could raise some money and just see if the chap is around still who programmed it and then just get him to update it, would be quite an easy thing to do, I think.

[00:32:22]

You've done a lot of work with lasers, can you tell us about that?

Yes, so lasers in ophthalmology are fairly ubiquitous. We use them for treating various parts of the eye, particularly diabetes. Having said that, there are so many good new medical treatments for diabetes now that the laser's become much less commonly used. In diabetes the blood supply to various parts of the body can be compromised because the capillaries, the very small vessels in the body tend to fur up, and in the retina you can actually see the effects of this because you can look at the retina directly, and if there are parts which are leaking or haemorrhaging, you can treat them with the laser. But nowadays we often tend to use injections into the eyeball, which can treat a lot of these conditions as well. So that's one sort of laser. There's other sorts of laser where we treat the pressure in the eye, a condition called glaucoma, and there are a variety of lasers for doing that to either increase the flow of fluid out of the eye or change the direction of fluid in the eye, or decrease the production of fluid that the eye is making, because the eye is making fluid all the time to keep itself round, and you're either making too much fluid or it's not draining away quickly enough and you can influence those pathways often with a laser, or with eye drops. Laser refractive surgery most people have heard of, so you know, having your short-sightedness treated by a laser, that reshapes the front of the cornea. The cornea is the transparent film on the very front of the eye that does about two-thirds of the light bending for the eye, and if you change the shape of it you can change how the eye focusses. So that's a very popular technique, not available on the NHS because it's considered to be a cosmetic procedure. But the technology's brilliant and is getting better and better. There's a bit of an epidemic of short-sightedness around the world at the moment. There's quite a bit of...

Why's that?

Quite a bit of evidence that a lot of close work and reading can influence short-sightedness. So a lot of Chinese, Japanese families, you know, kids are sort of sent to their rooms to study and they do a lot of close work meaning they don't go outdoors, but being outdoors in the sunshine and looking in the distance is fairly important for the eye to sort of naturally develop. And so there's quite a bit of work done on that. But there are millions of people around the world with quite high degrees of short sight and the laser can be useful for treating that.

[00:35:01]

I'm one of those lucky people that is short-sighted in one eye and long in the other, so I'm nicely balanced. You joined the Worshipful Company of Information Technologists. Apart from the fact that your father was one of the co-founders of it, why did you?

Well, I got to know about it because of him and I just thought it might be useful because of my interest in applying IT to medicine, that I could somehow be useful on the health panel, that was the idea. One of the initial things we did was to try and give trusts advice about implementing IT systems, because that was very haphazard in the early days, you know, there were all sorts of systems put in which either didn't work or didn't work well together, certainly between trusts they didn't work. And, you know, I had experiences, for example, I implemented, I helped implement a clinical database quite early on for our diabetic population, where we collected a lot of data for every patient that came to the hospital for about fourteen years, and every year one of our staff members would analyse that data and we'd know exactly how many patients we had, who'd had laser and who hadn't, who was registered blind and who wasn't. We knew how many more clinics we'd need to establish in the next five years because of the numbers going up and we could predict that sort of thing. And then one day one of the managers in the trust came to me and said we're going to switch off that system in a few weeks' time because it's too old now, we can't afford to keep it running. And I said, well, surely you can give me a server to keep it on and, you know, because it's valuable data. No, no, we can't do that, it's too much money. And sure enough, the system was switched off, so we now can no longer analyse our diabetic population. So for the last ten years we've been unable to do that. So that sort of short-sightedness really made me cross, and it was to try and counter that sort of thing that I thought I'd get involved with WCIT. And there's so much wealth of expertise around, type of people in WCIT. So I think, yeah, it has been useful.

You've been a manager of other people and what is the Larry Benjamin method of management?

So my kids say that when I get cross I go quiet. I'm not a table thumper and I don't shout. And I think working with people is the critical thing, you've got to know your stuff, you've got to understand them and their problems and try and help them. And so, you know, being a people person I think is really important. You can't help everybody with everything, but I think if you take an interest in people and they're part of the team, that's very powerful. So that would be my basic approach, really.

You got that from your father, didn't you?

I guess. Yes, I guess so.

Very much a people person.

Yes. No, he was. He was interested in people and, yeah, yeah, I think I did pick up a lot of things like that from him, yeah.

I remember one particular of the numerous lunches I had with your father and he was explaining to me how he was trying to work out some method by which software companies or service companies could capture the human quality of their labour force and reflect it in accounts. Of course in accounts you can see where the pence are, where the pounds are, how many computers they've got or what capital investments they've got and so on, but he said you can't do this with people and we've got to find a way, he wasn't able to. Interestingly, even he, I think a very intelligent man and a very perceptive man, wasn't able to do that. And I interviewed the new president of ECS about a year ago and he said he was going to try and do that as well. So it comes round, it goes round again. You're a liveryman of the Worshipful Company, tell me what you think the Worshipful Company does.

[00:39:13]

So I think it's a modern livery company, I don't think it's got the shackles of some of the centuries old companies, which is some ways a good thing and some ways a bad thing, maybe. But I think it has a modern outlook on what it's trying to achieve and I think it does try to achieve charitable aims of helping those people that need it with IT

issues. I know, for example, the school in Hammersmith that we support, it benefits greatly from expertise of the Company. And I think it's, you know, the world of IT is still divided into those who like it and those who don't, and I think one of our jobs is to try and make everyone understand it and appreciate its potential, even if they don't like it.

[00:40:05]

Okay. To go back to your father, he became the communications director of ICL and eventually – not his fault – ICL collapsed. Did your father become a disappointed man because of the, well, because of the relative unsuccess of the UK IT sector?

I think he was always disappointed if things didn't work out how he expected them to. I remember him being very upset when he was, I think he was director of corporate communications at ICL, I remember he was in charge of hiring and firing a lot of people, and at one point they let a lot of people go, and I don't remember the reasons, but I think, I remember him being very upset at having to do that, that was his least favourite task in life, was disappointing other people. So I remember that quite clearly. I don't remember him being disappointed about ICL, but he may just not have talked to me. He tended to not moan about things, or at least to me, and he was always looking for the next challenge and the next solution. So I think that was one of his strengths, he was quite positive about things usually.

He only got an OBE, I wondered why he didn't get a knighthood. Did he?

He didn't get a knighthood, but I don't know... he was very pleased to get an OBE, he was very proud of that. I went to the Palace to watch him receiving it and I remember walking into the room and thinking what a good hi-fi they had, a really good player, I turned round and there was an orchestra on the balcony, it wasn't a hi-fi. But no, he was very proud of that and I think he was quite a royalist at heart and very proud to have achieved that. Yeah, who knows what the criteria are for these things. It's difficult to know whether he should or shouldn't.

Well, some people who contributed a lot less than your father have got a gong rather than just an OBE. What do you think is the most pressing thing that can happen to the application of IT in your ophthalmic area, Larry? What's the most pressing item on the agenda as far as you're concerned?

So I think we're doing quite well with data collection, and that's been a real struggle. We've now got the vast majority of our units around the UK doing that relatively routinely for some procedures. I'd like to see that for all procedures so that we can keep standards up and it's good for informing training and teaching as well. And I think funding. Funding for, you know, keeping up with the technology. Having the technology at your disposal is so useful and so vital now in managing people's conditions and expectations and I think, you know, just that, application of that technology is very important, trying to maintain those standards, modern standards. But yeah, still systems, systems to collect data are still a bit of a weak spot and we need to get that a bit more national and routine.

Yes, my son is involved for NHS England for the collection of cancer data and it just staggers me that it's just not being done.

Yeah, I think part of it's resistance to implementing IT and part of it's cost. Sorry...

Carry on. Part of it is what?

I think part of it has been resistance to implementing IT and part of it is cost.

Right.

We're getting better now at bespoke systems. And I remember writing a letter years ago, which was co-signed by a number of eminent people, about the implementation of bespoke systems and how - it was when Richard Granger's project failed really - that we all knew that collecting data at a local level by specialists with specialist knowledge was the important thing and that the, from the IT perspective, interoperability was what it was all about. So it didn't matter that you had little systems collecting data all over the place, you had to make them talk to each other.

And, you know, the concept of one system to do everything was never going to work and indeed didn't. So I still think this interoperability is something we need to fund much more of, to give people the systems that work for them and allow them to connect to each other. You know, so you have standards for data collection and for talking to other systems, and some hospitals do it pretty well, you know, when I used to go to work in the morning I would have to log on to seven different systems and if all was working well I could often switch between them, but it wasn't always working well. Be nice to have one log on, which only took a minute, but logging on often took me twenty minutes in the morning. So those kind of issues can be, you know, annoying and counter-productive, because it just means it's twenty minutes when I'm not seeing a patient or doing an operation. So I think... but all of that will come with time, you know, the technology changes and improves and it'll happen.

[00:45:36]

In terms of the application of IT, what was the biggest mistake you have made in your career?

Ooh. Erm... yeah, I don't know that I've personally made a big mistake in terms of... I've been very frustrated in terms of not being able to get funding to do what I've wanted to do. I suppose that's been my error, not fighting hard enough for the funding. But, you know, that's always difficult. The hospital only has to buy one CT scanner and it wipes out the budget for most other things. And that's how it's always been. I, politically, I think we have the health system in the wrong hands, I think it should be led by people who understand it, rather than people who don't, and quite who they are, I'm not sure, but I could probably appoint a board of people that would do it better than most politicians. But I think everyone says that. And so how we raise funds and spend the money is often to me not very transparent. So I slightly regretted not having better business skills, I guess that was one of my weaknesses, knowing how to make those sort of changes in a way that's effective and I wish I was better at that. But I think...

But that's a very difficult combination, isn't it, being a clinician and then having those business skills as well. That's an extremely difficult combination, isn't it?

It is. I mean there are clinicians who have an MBA now and all credit to them, but I think they do less clinical work because of it, and I think that's, getting that balance is difficult. Should you have a doctor running a hospital, you know? You could, they'd understand the hospital, but they wouldn't do any doctoring. So it's a difficult balance, I think. And I think one of the lessons I've learned over the years is to work with management rather than against them, and when you get a good manager to make use of them and make sure they are... One of the things, I guess the other regrets I had in my career was I thought of trying to implement a course called Medicine for Managers. So there's an awful lot of managing for medicine, you know, we all go on courses of how to be managers, but none of the managers learn about medicine, and if you could have a three-month residential course with managers sitting in clinic and doing on-call and staying overnight and talking to Mrs Smith and saying why she can't have that drug because it's too expensive, they would understand a lot better what the pressures are from our end and I think it would make the team approach much more realistic. So maybe that's one of my big regrets, that I never implemented that. I did talk to someone at one of the big teaching units near us and she said it was a good idea, but that's as far as it got.

You must have been delighted when Ms Coffey got to be head of the NHS in the last but one Cabinet, absolutely delighted. Now, you actually retired in 2019, but you came back to deal with the cataract backlog because of COVID-19, thank you for that. How did you find the NHS when you came back?

Yeah, very different in some ways. I mean I think in my particular hospital we did quite well, and in fact our activity didn't stop for that long, so we had backlog for a variety of reasons. And in fact the unit I was working in was a bespoke high volume separate standalone cataract unit, which worked extremely well. So, from my point of view it was an improvement in some ways. I saw a lot of improvements in terms of we, for years we'd been saying, can we work from home please, can I access my emails from home. Can't be done, security too much of a problem. Overnight it happened when COVID came in, everyone can now work from home. So there have been huge improvements in that respect, things just got done. And we do a lot of telephone follow-ups now. As you probably know, when I did my presentation a few

weeks ago, we've implemented a robotic system for patient follow-up for cataract surgery, which is well received, saves a lot of nursing time and patient travel time. So real world costs are saved. And so I think there have been huge improvements from COVID which have been good to see and which we're trying to keep going, but at the same time, you can't really do doctoring without being face to face for some of the time and we've been a bit slow to re-implement some of those clinics, I think. So this big problem with people accessing their GPs at the moment is because they got used to telephone conversations and it works quite well for some things, but actually you want to go and see your doctor and, you know, that aspect of things hasn't quite straightened out yet. So there have been pros and cons and I think from the taking cataracts out of people's eyes point of view, we're doing okay. From the personal follow-up point of view, it's maybe not as good as it was.

Yes, certainly want to see a GP in less than a fortnight. I used to go and sit in a surgery and be called in that very evening.

Yes. And I can understand...

Sorry?

I can understand from their point of view they've got huge difficulties, you know, the workforce is not as it should be, there are big issues, which I do understand. But I think we mustn't lose sight of the fact that actually people want to see people. That's really important, I think, in any industry.

[00:51:27]

And we're just getting results, probably this week, of the nurses' ballot on striking as well.

Ah, right.

How's that going to affect you?

It'll help.

Yeah.

Yeah, you know, I think nurse pay is better than it has been. It's still not, you know, when you compare the pay of people in medicine to the pay of footballers, some might argue that, you know, things are the wrong way round. But there is a limited budget, we're in difficult times, it's very hard, I don't know what the answer is. It would be nice to give everyone more money, but maybe Elon Musk's bitcoin project will help us all.

Oh no, don't put your money in bitcoins...

I'm not.

[laughs] I don't think that's a wise idea.

No, no.

Are you going to remain in post?

No, so I've retired again now. Twenty-seventh of July was my last day, so I've gone. I am still running teaching courses and doing training, so that's where I am today, I'm at the Royal College of Ophthalmologists in London and we're running a course for beginning ophthalmologists. So as long as they'll have me I'll carry on doing that sort of thing, and I'm still working with Orbis doing a simulation training programme on the Flying Eye Hospital in Vietnam in May next year, so we can teach and train on the aeroplane, but also broadcast the teaching and training around the world with various simulation techniques. So I hope to carry on with that as long as they'll have me. And I can still tie a reef knot, so as long as I can do that, I guess I can carry on for a bit.

What would you like Orbis to do next?

I think the implementation of IT is critical. I think if we could gather data from around the world in developing countries, that would be a massive boost to our understanding and treatment of those populations. You know, for many years you would hear about cataract eye camps where people would go to India, wherever, and do 200 cataracts in a day, and everyone would think they were heroes. When people started analysing the outcomes of those, they had a huge complication rate and many people stayed blind. So it's not until you start looking at what you're doing properly that you can understand the outcomes, and I think if we could implement that around the world with Orbis in terms of data collection, we would have a repository of data that was unparalleled. It would be good for drug companies, it would be good for learning, for teaching, and for implementing change. So I think that's got to be our next big project, really, is carrying on doing what we're doing in terms of teaching and training people to treat eye disease and prevent and treat blindness, but on top of that making it more refined and give us access to the huge amount of data that we generate each year.

So you need the techniques of data mining and big data analysis.

Yeah. And collecting, you want a portable system, ideally an iPad type of product that you can use in the field, upload when you get back to your base, centralise the data, analyse it and know exactly what our outcomes are. You know, I go abroad and I, Orbis are actually quite good at this, they do do review visits and they go back and check the patients are alright and that their outcomes are good, so we know what we're doing is okay. But, trying to prove that is tricky because we don't have all the data.

[00:54:55]

What about the application – last big question about technology – of AI?

Yeah, fabulous. I mean I think it's, I've always argued that it's not really artificial intelligence, it's people's programming, you know, if people are programming these machines to do what they want, it's not really the machine making the decision, it's the machine doing what it's asked to do. Whether we get to a true sentient machine in

some time in the future remains to be seen. It's probably not impossible that, whether it's desirable or not, I don't know. But as I mentioned earlier, this project with Google DeepMind analysing these scans is using AI and has been fabulous. So its application to routine analysis of data which you don't want a human to have to sit and do is going to be big, I'm sure. And in terms of algorithms and decision making, it can certainly help people to make better decisions.

So your view seems to be that AI is not going to take over, it's an enabling technology, or should be used as an enabling technology, really to help individuals make better decisions and/or guide individuals. But there are certain things, it does seem as well that you're saying, which can actually be automated.

Yes.

Diagnostics, for instance.

Absolutely, absolutely. And I think, I remember when I was first qualified having a long discussion with my father about robots and medicine, you know, one day a robot will, you'll go to your GP and you'll see a robot. And I used to argue, well you can't, you know, a robot can't tell necessarily when it puts its hand on your abdomen whether you're in pain or not and, you know, how do you get that sort of nuance and that... It'll come, it'll come. And he was quite convinced that, you know, there was no limit. I'm not so sure, I'm not sure we want there to be a sentient machine, but I do see the incredible application of properly programmed machines and I think to try and understand how a brain thinks is something we're nowhere near at the moment, and to try and emulate that with electronics is even further away, but there's no question that the power of the fast calculation in a computer is what we want to harness, and that's going to be incredibly helpful.

And we've got more calculating ability because we have the cloud, do we not?

We do, we do. It's gradually taking over. I'm old enough not quite to trust the cloud yet, because if the servers go down, what do you do next. But I guess that's, someone's thought of that.

We've also got security issues, have we not?

Yeah.

Who has your data?

Exactly.

Where is your data?

What are they doing with it and why can't I see it, yeah, yeah. They're all solvable problems and I think at the end of the day you're dealing with people and people are usually the problem, it's not the machines that cause the problem, it's the people.

Well, that's a very inspiring end, thank you very much. I mean it's very inspiring to have someone that says these are all solvable problems. I think they are. Thank you very much for your contribution Mr Larry Benjamin, where we got a two-for-one, because we got a very interesting insight as well into your father, Alan Benjamin. Thank you very much, Larry Benjamin.

A pleasure. Thank you very much.

[end of recording]