David Potter

Interviewed by

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It's Wednesday April the 20th 2016 here in London, England. I am Alan Cane and today I'm talking to David Potter, developer of the world's first volume hand-held computer, the Psion Organiser. Good morning David.

Good morning.

Now, you've had a career distinguished I think by three separate phases. You've been an academic, you've been an entrepreneur and businessman, you've been an engineer and technologist. First you were an academic. Can you tell me about that?

Well I, firstly I was a migrant, and I came to Cambridge University as a nineteen-year-old with a Beit scholarship that I had won, and, I studied Natural Science Tripos. Then I went on and did my doctorate in Imperial College, London. And, I was an academic for quite a lot of years in physics.

Yes, you were actually a mathematical physicist, were you not?

I was a… Yes, I was a theorem physicist in applied physics.

Mm.

And so, I was interested in things like chaos theory and nonlinear phenomenon, of which there's a vast amount in our world. The atmosphere, the future of climate change, the oceans of the Earth, galaxies and the structure of galaxies, and plasma physics, which in fact is the fourth state of matter, and covers a lot of the universe. So, to study and understand these nonlinear problems, I came to use computer simulation. And I wrote a book on the subject as an academic, and published quite a lot of papers in that, in that area. So that's how I came to learn about computers. Those were the computers in the 1960s of mainframes, million dollars apiece, and much smaller than our smartphones of today.

Indeed. I mean these must have been fairly primitive machines compared to today's computers.

Yes, they were, they were tiny in comparison. They were very big physically, they required, they had valves, and, bugs in the terms of, bugs are dying on the values, and that kind of thing. So, they didn't have anything like the scale of solid state physics which is what really changed the world. But, they were the first working computers from 1948 onwards. They gradually became more important, and they were used by… They were very expensive at a million dollars a time, which at that time was, was a lot of money. They were used by combined universities, or by institutions of government, or maybe by some of the military areas probably in American and British governments, European governments.

Mm. You were teaching in London and also in the US?

Yes. I taught at Imperial College, and I also spent many summers in America, my research was of interest to various institutes and universities in America, particularly the West. I spent a lot of time there, got to know America in that way. I also taught at UCLA in Los Angeles, which was great fun. That was in 1974, '74/75, and it was through that experience, in the physics department in UCLA, that I came across the beginnings of the chip. And I could see what was going to happen, and I could see that this was going to change the world. Because I think all that we've seen about silicon and fibres and LCD displays and so on is the most extraordinary development of quantum mechanics in physics, which was the first half of the century, came to be applied through the second half of the century and really has changed the world. It's that that has multiplied capacity so much.

[04:05]
But at the same time there were the seeds of your career as an entrepreneur and businessman being sown. How did that come about?

Well I was actually in California as well. It was 1974, and, I was married, and we were thinking of children, and how, if I were to return to England, how, how would I pay for a growing family?

Mm.

I had a wife who was a journalist, and she wanted to go back to London to live, to work in the *Sunday Times* where she has a job, and the *LA Times* wasn't quite the same thing. So… One of the things that was occurring in 1974 was the first great oil price expansion, of price.

Indeed.

And, it was a time of great unrest. The wealth and success of the 1960s, and the challenges of the 1960s, had turned into dross in the Seventies. And, there was a giant crash in the stock market. The FT 30 as it was known then was 520. It fell to 146. I think that's probably the worst fall in our generation.

I'm sure.

And I saw this happening from afar, and thought, this is mad. And they must think that… Denis Healey was in charge of things, and there must have been some thought that T-52 tanks were coming down the Mall or something [laughs], being written off completely. So somebody said recently, you know, when there's a sale on, it's quite a good idea to buy things. [laughter] So I had savings of about £3,000, and I wrote to my bank manager and I said, 'Please invest them in the following six companies,' which I didn't know very much about, but I knew about Racal Electronics, about GEC, Arnie Weinstock's great company. And anyway, four others. And, then I forgot about them, went on with my academic business. When I returned to Britain everything had more than doubled, and of course there was the beginning of the recovery in 1975. So, that taught me a little bit about, if you research things enough, and I was capable of research, maybe there were opportunities. And I used that to, to generate the capital that I used to form Psion in 1980.

[06:46]
Yes. Also in 1975, duvets played a part in our career.

[laughs] Yes, that's true. That's, that's how it happened. It's a nice little story. And we had our first child in 1975. And, just to have a break I went skiing on a packet tour down to Austria I think, and I had a very pleasant four or five days, and a bit of

exercise in the Alps. I came back on a newish aeroplane carrying people, I used to go by train, but on an aeroplane. And I looked around as we were flying back, and I thought to myself, all these Brits have been skiing, and sleeping under duvets. And so, clearly they're going to come home, they're going to throw away their blankets and buy duvets. [laughs] So I researched whether there was a duvet supplying company in Britain, and I found one. I went to John Lewis and I found one. The company was called E Fogarty. And, E Fogarty was a company in Boston, Lincolnshire, that traditionally had removed the feathers from chickens, or presumably it was a place where they killed chickens, supplied the market, they took the feathers and they made pillows with them. And, the chairman, the third generation chairman, in 1975, had realised the duvet proposition, and so he had invested massively in new factories, a very small little company in Boston, Lincolnshire, and he was on his way. And I researched that company in great detail. I could see it was moving very rapidly, and so I put half of my modest little capital into that company. There was no sense in talking about risk you know [laughs], if you had a very small amount of capital, then it's worth putting it on. And, I had researched it well, did very well, and that began to create the capital that I used to form Psion.

[08:55]
Mm. So, here you were, a successful investor, successful academic. Why didn't you go back to teaching at university?

Well, in '75/76, I could see that, that the world was going to change radically with the invention of the chip, and that it would permeate many aspects of life. And I thought that this is an enormous transition. I could see it very early on. And I wanted to participate in it, because it was going to change the world. It was a bit like being an artist in 1870 or 1880, you wanted to be in Paris, not Berlin. [laughs] So, that's what I did, I went to Paris, the equivalent.

[09:50]
Mm. So, in 1980 you founded Psion, Potter Scientific Instruments.

Yes, that's true.

With your own capital.

Yes.

Did anybody encourage you to do that, or was this entirely your own, your own idea?

My wife encouraged me. She was, she is a remarkable support to me. And she had great confidence that whatever I turned to, she thought I can achieve. [laughs] A young wife. Maybe she would take a different view today. [laughs] But, so she was a great support. But no, it was a… My academic colleagues thought I was daft. Why would I give up a secure tenured job…

Absolutely.

…and go out in the world and take a risk like that? Because, that's where the frontier was, and I didn't feel that I was quite in the frontier in the physics areas that I was involved in, but I thought this really was a giant frontier, and I wanted to be in. So, no, it was an unusual thing to do in Britain. It was 1980. Margaret Thatcher had just been elected the Prime Minister a year before, nine months before. In America, we had Reagan coming to power, and both of them setting, set about cleaning up the Seventies in very robust form. We had the Rust Bowl, we had a big recession. I won't call it a depression but it was a severe recession. It was known as the Rust Bowl recession because it put out of work too many people in places like Illinois and Chicago and our equivalents in Britain. And so, my advice is that, you know, when there's a recession, it's the best time to start a business. Capital's available, interest rates fall, capital's available, and, the opportunities, in the phrase of Schumpeter, an economist, Austrian economist, I think about 1916, he talked of gales of creative destruction. The destruction of the old industries. And out of that kind of coming the new. So actually… And so, ironically, it's a good time to start a business when things are tough.

[12:22]

So, Potter Scientific Instruments, it sounds as if you were already looking towards hardware at that point.

Yes. I mean actually, I think the instruments was slightly conjured up from the Greek letter Psi.

Yes.

And of course being a physicist, I thought Psi was a nice letter. It's a Greek letter, Psi. [laughs] And… It's the wave function by the way, typically used in quantum mechanics. And that's really what I was concerned about, about the electronics of, of solid state devices.

So can you describe how you set about forming this company? I mean you had your own capital, but, how do you do it?

Well I had to find out how you did it. So, I went and registered a company, and, ironically, the company… So, the way you register a company, at least then, is, you, people make them up here in the City for £100, so they put £100 capital into this company, it's got 100 shares. And it's given some name that's never been had before, they used computers to find the name. At that time I bought a company off the shelf like that, just a shell and nothing. And £100, I paid £100 and £50 for services to do it. And the company, interestingly, was called Red Cheer. [laughs] Maybe I should have kept that, because, it's quite a nice name. Red Cheer. And, so, I did that. Then I found a little office at the back of an estate agent, a very small one. And, then I began to explore what was going on, to the extent I could, in Britain in this area. So this was very new, and kind of unknown, but there was the beginnings of movements going on in Britain, in St Clare[?] for example, there was a fellow in Cambridge I discovered, Hermann Hauser, and he was running something whose name I've forgotten but it became Acorn.

Mhm.

There were odd people who worked for British Airways mainframe computer services, but at night they would go home with a few chips and things and make their own little microcomputer, and write software. They had to machine code it, they hand to put the numbers into these funny little devices. And, so they were doing all kinds of things. So there was a, a little undergrowth developing beneath the forest of big companies, of Babcock and Wilson[sp?] and, and GEC and so on, where, where people were doing, they were just interested, they were interested in what this stuff was about. In America in parallel Apple had already got going, beginnings of Apple, in 1977, and of course you had the AIM microprocessor and computer in Albuquerque, which I happened by chance to know well, in New Mexico. And that's where Bill Gates had migrated to in 1975 I think, to write the first software.

Yes.

BASIC I think, for that device. So there were weird people, odd people, doing interesting things. But it wasn't very mainstream, it was very minor indeed. But in that, in those germs and seeds being planted all over the place, driven by the possibilities of what could be done, there was great opportunity. I think the core was, what could be done. People who saw what could be done, wanted to get involved.

[16:23]
So, how did you start out, what did you start out making or selling?

Well I discovered what Sinclair Research was doing, which was producing a funny machine called a ZX80. And it was tiny, and it was very odd, and you had to connect it to your television. And, so what I saw was the opportunity of software. Because he began to sell quite substantial volume. So, I… There was, there was a set of odd newsletters being created in which bits of software were being marketed, like a club, it was like a club, being marketed for this device. And so I began to research those. And out of that I did find really quite interesting bits of software. And I entered into distribution deals with these people, saying that I had relationships with Sinclair and with Acorn, I had got to know them, I had gone and met with them. And, if I packaged and examined, we tidied up some of these pieces of software, we might be

able to market them with the devices, the computers. And that's what I did. That was the first progress that I established really.

[17:43]
Mm And from that you developed your own software?

Well that came later. After the first year, with a bit of, bits and pieces of marketing like that, I persuaded… Well I didn't persuade him, I asked somebody who had done a doctorate under me, a brilliant man, Charles Davies, and he joined me. He was the first person to join Psion, after me. And, that was at the end of the first year. And, Charles had done his doctorate under me, and he was very knowledgeable about computer software, because, he for his doctorate he had written a major simulation program. And, he could see the opportunity as well. He took his chances as well. He had a position at Imperial College at that stage. And so he joined me. And so he began to write the software. I would plan it, I would market it. And together we would create these. One of them was a flight simulator, which we did for, firstly for the ZX81. It was a tiny little machine, but we had a little runway there, we had the controls of the plane, and, and it was exciting, it was great fun to do. Sold like mad, it was terrific. [laughter] So. So, so in the early years we developed… Actually we became the largest microcomputer software creator in, in Britain, and we led the market. It started with utility products, like, you know, little databases and things like that. It went on to, the market wanted computer games, all these British Airways software service engineers, they actually wanted to play these games. [laughs] And so we followed the market, and we got distribution deals with authors. We, we put our brand on it, and we sold it with Sinclair and with Acorn, who of course were greedy for, for software for their machines.

Mm. Mm.

And I think it's true to say that by the end of '82 and into, by 1983 we were probably, in Europe, the biggest producer of this kind of software.

[20:13]

Did it seem risky at the time, or were you always certain that it was going to, you know, become a business?

It's a good question. No, I think that by the end of the first year I was confident of what we were doing. And in our second year we made an enormous profit on, you know, just originally the two of us; by the end of that year we must have had about fifteen people. And they were quite funky people, they were, they were odd collections of people who had learnt how to program these microprocessors embedded in these machines. So in our second year of trading we, we turned over £1.6 million. Now to me, £1.6 million at that time was an enormous amount of money, and we made a profit of £600,000. In our next year we turned over £3.2 million, and we made a profit of £1.6 million. So, we were well on, we were well on the way. But these…

Mm. And you were self-financing?

Yes, I was always…

You had no borrowing?

No borrowings, no,

Mm.

I did have a facility I discussed with the bank. I had… I had £100,000 when I started it from research and investment, and, my wife looked at this and said, 'We need to buy a house.' [laughter] So we used half the money to buy a house. The other half I kept. And so, I also had a second mortgage, if I had needed it, on the house. But, didn't need it, didn't use it.

[21:55]
So you were doing really very well in terms of computer software and games software.

Yes. Everybody becoming skilled in it, and we had a very good team. On the one hand my wife needed a house; on the other hand Charles Davies, at the end of our second year, said, 'Look how much money we've made. We should invest it in a VAX minicomputer.' And we did. And, this was an odd thing to do for a company writing software for microcomputers. But the point about it is that a VAX was a very powerful minicomputer, take as many as 24 seats[?], people working together, and it had simulators for all the microprocessors, and it had compilers for all the major programming languages. So, even Assembler language, you needed to convert it into a machine code of a particular microprocessor, but as we moved on to C and so on, using object-orientated code, and bigger machines later on. The VAX was a powerful workroom for our team, and it worked extremely well and gave us capacity in a way that other people didn't have that readily.

[23:12]
Indeed. But in 1984 you launched the Organiser, the first hand-held.

Yes.

That seems a big jump from this very profitable software business to this very new, probably quite, again quite risky device.

Yes.

Something you have to manufacture.

Yes.

Tell me about that.

[laughter] Well… Yes, it was radical. And, and as I approached the time when we were going to launch it, I needed, I, I thought that we needed, we needed larger capital clearly to finance stock and eventually things like that. And the timescales were drawn out. And, so I, I thought of raising money, and I was being approached quite frequently by venture capital type companies.

Mhm.

And when I… And they were very interested in Sinclair's new product, the QL, and others, and, ICL was engaged in that as well. [pause] But, at the end of these meetings I would fish out an early model, prototype model, of the Organiser, and they'd look at me with some horror. [laughs] 'Put it away please.' [laughter] 'We only want the software[?],' what they could see[?]. It was quite interesting. So your comments are, are entirely correct, it was high risk. On the other hand, why did we do it? Well, the core reason we did it was this, is that, by this stage in early '83, end of '82, we had really built up quite a team, and they were very academic, and intellectually powerful. We had a, we had a very strong team. Quite a lot had been drawn from the universities, from Imperial College and elsewhere, and joined us. And they didn't quite fit with a company going on to be a major player in computer games. So, that was one issue. The second and perhaps core issue was…

Sorry, you mean, they were a bit high-powered for, for that, or…?

No it's not that. I don't want to say that people doing, writing computer games are not high-powered, of course they are. It's just that the utility in some sense was, was… Maybe we were quite puritanical in [inaud], you know, where was the utility? It was great fun, but did it really add value in a wider social sense?

Yes. Mhm.

So, there was another, more mundane, reason, is that, the companies from Cambridge which we were particularly associated with, Sinclair and Acorn, were companies which didn't have a strong financial base, and some of their methods of operations, if there was a downturn might be pressured, and we felt that we were far too dependent just on a few companies, and a few American ones as well that we [inaud]. But, too narrowly based, and too dependent on the hardware manufacturers of that particular type. And so we thought that we should diversify in some way. And it was Charles Davies and I in a Greek restaurant saying, what are we going to do, you know, how are we going to develop? And, why don't we… You know, the PC at this stage was

beginning to come out as a substantially widely… But they were expensive, and they weren't mobile, and so you'd have one per office where ten people would use the same PC. [laughs] So the idea of portable computing, of, the fact, the idea that people had personal information, although it was alien to most people, they hadn't thought of such a thing, that was our great idea. We had this great idea in that Greek restaurant. People really did have personal information, and, we should build a device for that, for ordinary people. This was exciting, because potentially it was a very wide market. That was the origin of the idea, it would give us a diversification. We had a lot of profits and savings and capital; we could get more. And, it was worth trying a really radical and different, opening up a completely new area of business.

[27:58]
Mm. Did you have people on board who could do the…

Hardware?

…the design work, the hardware?

No. So we went off and hired more from Imperial College. [laughter] These… Sorry. They weren't from Imperial College, they were a variety of places. But the core person came from Imperial College. And, I hadn't been his tutor or supervisor, but a colleague of mine at Imperial College had been, and, Charles had mentioned him to me, and so I rang up this old colleague of mine and said, 'What you think of Andy Clegg?' And Andy Clegg had actually, in his years as an undergraduate, come up top of the year, and, he had gone off… And he didn't want to spend his life in academe, and he had worked for, I think one of the military companies to begin with, and then for Hunting Surveyors I think they were. He worked on boats down in the South Atlantic and places like that. And Andy wasn't very pleased with life when I rang him up and got hold of him and said, 'Why don't you come and try something different?' Now he was, what he had been doing since leaving Imperial College was in fact designing hardware equipment for surveying purposes and so on. So he had wide experience of creating his own boards and design and so on. And he was enormously bright. And he joined us. And I said to Andy, 'This is the idea we have. And there are three very big problems with it. And it's your job firstly to solve these

problems. And, the first is, size and weight, and thirdly, battery life. And when you turn the machine off it's got to keep its memory.' Now that was a very big problem, because we couldn't, in a small device, put a disk drive in there. Anyway, Andy, an enormously creative fellow, imaginative, went about… And he kept coming back to me month after month saying, 'What about this?' And he produced a little Hungarian disk drive. You know, can you imagine these things coming out of, at that stage, the Soviet Union empire? It seemed unlikely. Anyway, it was too big, and it produced too much power. And one day he came to me and he said, 'Why don't we store the information in EPROMs[?]?' These were, stood for electronically programmable read-only memory. [laughs] And you could remove the information and do it again by using a little ultraviolet lamp, which we could package in a box. And that was actually the solution, we provided durable memory as well as short-term memory. The Organiser, the design and engineering of the Organiser should be accorded to Andy Clegg, and he did a fantastic job. He was a brilliant fellow. He came from Manchester and he was very Lancashire in his approach. He was, he was very lean and mean [laughs] about the resources that you use, which is exactly what we required, and his engineering was brilliant. He also had a level of quality which was outstanding.

Did he also do the, the actual form factor design?

No. No, there we, we searched for a company and we found a small company called Frazer Design Ltd. And in Frazer Design Ltd, he came and pitched to us. We, I briefed him. I gave him specifications and what we were, what we were trying to do, briefed him. And so they came back with concepts, and, the person who presented these concepts and who had worked on it was a man called Martin Riddiford. And, we had pitches from about six different companies, including some very grand companies as well as smaller ones. We chose Frazer Design. And Martin Riddiford had been, was the designer. And later we helped Martin Riddiford set up his own business, which was called Therefore Ltd, and is flourishing still today.

Right. Right.

So Martin and his team, others in his group that he formed, came too. And indeed they've done business right across the world, all over the place. So, he was terrific, yah.

[32:48]
Mm. Good. So, all of this work on the Organiser was funded out of your, profits from the, from the software business?

Yes. But we also raised a million pounds from the venture capitalists which I mentioned earlier. At least that's the way it was going to be. And then two friends of mine who had heard that I was about to close a deal with a large American-British venture capitalist, Apax it became…

Apax Partners. mm.

A much younger Alan Patricof at that stage.

Yes.

And, they approached me, these two friends, and said, 'Well give us one week, give us the data, and let's see if we can make you an alternative offer.' So I said, 'Fine. You've got a week. Here's the pile of information,' which we had built. And we did, we closed the deal with them, unfortunately for Patricof. But, Patricof did fine on the bigger scheme of things. [laughs]

Yes.

But I, I needed a backstop, and, just to make sure, you know, and so it was a secure thing to, to have an alternative.

Oh this was an investment, I mean, these people were taking shares in the company?

Yes. Yes, that's right. And, they ended up, I think valuing the company about seven or eight million pounds. So, for a million, they got about twelve, thirteen, fourteen per cent.

[34:30]
Mhm. So you launched the Organiser in 1984. I can remember that, I can remember you showing me the first…

Right. Right. Right.

…first model. Yes. So how did it go?

Well, it's, it's an interesting problem to launch a product which nobody knows the purpose of. [laughter] I mean, usually it's the other way round.

I can remember you saying, your wife used it, as a journalist, to keep her names and addresses in.

Yes.

I thought, well, that's interesting. [laughter]

Well yes, by then, you know, a variety of us, we were using the devices from an early batch, and… But, the marketing was, was a difficult issue, but an interesting one. The idea of a personal computer, personal mobile computer, which dealt with one's own information, was a radical idea, and people didn't recognise that they had personal information. But if you looked at them, they carried bits of paper around and they had notebooks and they, and they lost their paperwork and their diaries and goodness knows what else. And so, in fact, we had recognised that in fact there was a great deal of information. And, we also needed a couple of other devices, other machines, connected to the PC and, and so on. How did we do it? Well, we, I started in the first six months directing advertising and marketing to, to explain the need, or to point out the need, and also to describe what it did.

Mhm.

And, we, the first batch was 10,000 units, not very much, and, this went out all over the place, to different kinds of people. We rapidly found that a lot of businesses came to us, including Marks and Spencer, and they said, 'Well, these devices would be terrific to organise point of sale equipment and so on.' And in fact, our first successes with these devices was in the commercial world. This, the personal world, we were disappointed with the personal sales early on, but, we had excellent demand from commercial applications.

Mm.

However. So Marks and Spencer came to us, and we did a huge amount of business with Marks and Spencer over subsequent years, in different devices as they evolved.

Mm.

[37:16]
At the same time, we began to get the message across to ordinary people, and we built the next 10,000, and the next 10,000. And we were beginning to build up what I'll describe as a consumer market. We also learnt an enormous amount from these very early stages, and in 19… after eighteen months, at the end of '85, beginning of '86, we launched the Organiser II. And the Organiser II was an evolution of the I, but it included a lot that we had learnt, and particularly it had a much more substantial software system inside it. And we had a team working away on that, a very dense software to put into a very small amount of memory. But, the Organiser II in fact was a very substantial leap ahead. And, my half-brother Colly Myers was also a key software, member of the software team, and I remember, as he was checking the software and checking the machine late at night to make a final release, and I stayed with him through the night and others there, and we had to meet a deadline to release everything, everything had to be checked in great detail, and we were in good shape, and Colly turned to me round about three o'clock in the morning, I think I had gone out and got some McDonald's burgers for them or something… [laughs] And Colly said to me, he said, 'This one's going to run.' This machine's going to run. And it

did. The moment we launched it, it just took off. And, that established, the beginnings of establishing the volume markets that we had envisaged.

Mm.

I make a, a further remark.

Mm.

[39:17]
Our marketing then turned to, more sophisticated, and turned to the issue of, what does this really do for you in an emotional sense? And we had a great advertising company run by a man called Ronnie Gottlieb[sp?], a great character in the advertising world in London. And Ronnie had helped us develop these messages. And we got to the stage where we were advertising in the likes of the *Daily Mail*, and the *Times* and *Telegraph* and wherever. And it was just a shirt pocket that was shown in the picture, and a computer, this little computer, sitting in the shirt pocket. And we had headlines, and a picture of the machine on the side, and we had a headline saying, 'The Daily Help', and 'Move Over Rover' [laughter], and 'Man's Best Friend'. It was a great campaign, with these straplines. And just, you know, we could put anything, and people would recognise the ads. We ran and ran and ran. And it's that that really I think established the brand. It was good marketing at that stage.

[40:28]
Mm. How long did the Organiser last as a product?

The Organiser I and the Organiser II is what I call generation one. They were 8-bit, they were based on 8-bit microprocessors. They used static memory to preserve power. You couldn't have dynamic memory. It had to be static. And, it retained its memory when you switched it off, as we had built the systems for that and because it was static. It also had, it also had, as I said, offline… The first disk, or stick, memory stick, we invented that in the very first machines, that you could have permanent information.

Mhm.

So those products lasted through till 1991, ’92. But we were working away, after the Organiser II was launched and the success was developing there, we began to work on the next generation. We called it SIBO, which stood for something like, Sixteen Bit Organiser. And it was 16-bit as a opposed to 8-bit, so the addressing structure was vastly bigger. Everything was getting bigger, the memory, the screens were multiplying. The technology was running in our direction at a very rapid pace. And we, for a small company like this, we invested a huge amount in this new technology. And it was designed to create a whole range of products, in the corporate area, in the hand-held computer area, and also in, in the first notebooks, notebook computers. We created a range of them as well. So, that was a very big investment and it was important to us. And that started in ’86, and the first products began to be launched in ’89. And in 1988 of course we, the company also went public.

[42:38]
Yes. Now why was that?

Why was that?

Mm.

That’s also a good question. I, I had thought about that with great care. If you’ve got a company which is moving very rapidly through markets which are evolving at a rapid pace, competitors of ours, I could see them coming and going as if it was the American Civil War, you know, tragically the, the collapse rate was very rapid.

Yes.

And yet the birth rate was very rapid. [laughs] So, the life expectancy of the small company in the IT world at that time, in the late Eighties, was, was short. In 1984 even Intel had a huge problem, because they had over-invested in inventory, and the market crashed.

Yes.

So, the issue is, would I take the risks if it was, if I, if the company was owned by me and a few of our executives, or would it flourish better with a wider capital base, a wider market, independently of the founding individuals? And I decided that the latter was, was the case. So that's why we went public to… Because we were ambitious, and we wanted to develop this company a long way, and we couldn't do it just by ourselves.

How much did you raise, roughly?

The capitalisation of the company at the time was £17 million. The profits of the company was about £1.1 million for the year 1987. We had actually aimed to launch the public quotation of the company as advised by our investment banks at that time in the autumn, in October 1987. Several things happened. We couldn't have chosen a worse month. The first thing that happens is, the day that we were going to have our pathfinder prospectus presented to institutional investors, a hurricane, which was meant to, according got Mr Fish, go over France, decided to come over England [laughter], south-east England and London. Nobody pitched up for our meeting. They couldn't. All the trees had fallen down, in Surrey and places like this. But we soldiered on through the weekend thinking, well, clean it up and we can make a presentation later. On Monday the stock market crashed in America, do you remember, about 27 per cent or something in a day.

I do, yes.

The famous stock market crash.

Mm.

So the end of that day I felt a bit bushwhacked, and I said to my colleagues, friends, 'Let's just forget about this flotation business, we will wait until the world normalises and think about it again.' And so we pulled it, it was impossible, clearly, with the Wall Street Crash. But rapidly, the market rapidly reasserted itself by the spring of

’88, February, and so we were advised we could float at that time. So we did. That’s why it was in March 1988.

[46:24]
Mm. At that time, the time of the flotation, what was your product range? Obviously the Organisers. Were you still doing software of any kind?

I had a, I had a great colleague of ours, his name was Irwin Joffe, and he ran servicing and so on. And, we practised for answering questions before the, before the real presentation. And one of our advisers… And so we had a practice Q&A. And one of our advisers said, ‘Can you tell me, you’re only a one-product company; do you think this is the right time to come to the market?’ Irwin Joffe, with a Jewish sense of humour, said the following, he says, ‘We might only have one product, but oy vey, what a product.’ [laughter] And, so that’s the answer to your question. We were a one-product company. Although there were industrial versions, consumer versions, and pretty wide markets for them. But in fact, at that time we were advanced in the development of a new generation, and so, we couldn’t tell them that, but we just have to tell, tell it like it was at that time, but working away, we had a large R&D and we explained that.

Mm. But you weren’t making any profit from the software, I mean from the games business any more, were you?

Correct. It was, it was a modest contribution. But, but the Organiser was going from strength to strength, and so in fact, our revenues and our profit outlook was very positive. And, in any case, in the next year we expected new generations to, to come along. Of course the problem with new generations is, you have, you have to find your way when you introduce, again, more radical products than you had.

Mm. So was the Organiser series… I mean you pioneered solid state disk.

Yes.

And you pioneered mobile operating systems.

Yes. Correct. And in fact, as time went by, most of our R&D of course was in software. The company's origins were software, producing Chess and Hungry Horace, and Flight Simulation. [laughs] But the software involved in the Organiser, the operating system, the applications inside the devices, was very advanced of its type, and very demanding indeed. And on top of that we had very large amounts of utility software such as RS232, things like that, peripheral devices, and indeed basic software, which would be required by, by all users.

[49:39]
OK. So, also in 19… no, in 1998, that was ten years after the float, you formed the Symbian venture.

Yes.

Can you tell us about that, what were the reasons for that, how did it come about and why was it important?

Well we, we went on to launch the second generation devices in '89. That did cause us some difficulty. It was also a period of recession in Britain and Europe and America. But we came through that, and the next generation of devices, the Series 3 as they're known, hit bigger and bigger markets and were much more powerful devices. In '92, which was after the launch of the Series 3 family, I was invited down to Nokia's properties in London, south London, to, they asked me to come and talk to them about the future of hand-held devices, computers, and how I saw it going. And they would talk about cell phones. So that was '92. '92 I think was also the, more or less the launch of GSM, which Nokia of course came to dominate and became a world standard. At that time, it was early days still with cell phones, and they were used by executives and people like that, and, and they were so important, some of these executives, they had to have a man carrying a box with the… [laughter] So. So, it was a rapidly evolving market, and clearly the cell phone was going to become very big. So what I did is, I gave them this presentation, and I started my presentation by describing hand-held, the nature of hand-held computers, and saying there were three difficulties that we faced, and that would improve progressively with the passage of

time and advancing technology, and they were the same thing I had told Andy Clegg, size, weight and battery life. And they then gave me a presentation on cell phones, and they had the same three problems, size, weight and battery life. Also the presentation of the screen and the use, the manual use of these devices. So that started the relationship with Nokia. By 1996, '97, it was clear to us that these two things were going to merge, and, and that we should perhaps talk to the cell phone makers about merging the two types of products. And that's where, that's how, that's how it happened. And, Nokia and Ericsson and Motorola were all, we talked to all of them. They were the big giants of the cell phone industry at that time. And they all knew the same thing, that data was going to come and play a bigger and bigger part in the nature of the cell phone, as it is today. So, some of this is speaking on your phone; a lot of it, a vast amount now is of course data of various kinds.

[53:30]
Yes, indeed. Mm. Just stepping back a bit. What was life like as a public company after you floated?

Well, I had to learn quite a bit. I mean I knew quite a lot about markets, financial markets, how they operated and so on. But I wasn't, I was experienced as an investor, but not as a, as a, in running a company with them. I rapidly learnt that the City has its curious ways of dealing with things, and I was a bit taken aback on some of the things that I learnt. [laughs]

Like what?

Well I… I think that… If we go back a little bit before this time. The purposes of the old, pre-Big Bang exercise that had occurred in '86, '87, in '86, prior to that, some years before that, insider trading wasn't regarded as a crime, or anything wrong about it. And the way brokers made their money in London is to have the inside information and share it with their clients. So it was going through a transition of what I will call relationships between the brokers and their clients, and transaction-based functions of the City, which were, which were more focused on the individual transactions in an efficient way, and a competitive price. So, I found, I found that some of, some of it was quite old-fashioned and still leaning towards older ways of

things. [laughs] As we saw later, in the decade of 2000s, the city, you know, some of the City got up to quite unusual practices, and I think there's been a clean-out since the bad events of 2007, 2009.

Mhm. Now you talked about the rise and fall, particularly of American…

By the way, I think I should qualify what I've just said a little bit.

Yes.

And just say that, the bulk of people acted entirely properly, but, but there was a lot of practices that people had got used to which they thought were OK, but, I think in hindsight, and thinking about how it worked, it wasn't. It went through a transition. And, gradually, it's, it's become a much fairer-based system.

Mm, I'm sure that's right. I think it's a fairly open secret that there has been this change.

Yes.

[56:28]
You talked about the rise and fall of particularly American technology companies. I just wondered, who was the competition during this phase of Psion's growth?

Yes. There were industrial manufacturers of hand-held devices for data capture, in different kinds of environments. It was quite a small market. It came about also through emergency services, so ambulances, police vehicles and so on, had computer- and data-oriented devices built into their vehicles with communications systems. And, there was also means in America particularly of capturing data for inventorying management and things like that. So that was one part, established and kind of quiet if you like. At the same time, I think with our success, and the Japanese with Sony and Sharp, Sharp and Casio, not Sony, Sharp and Casio, who had come from the kind of calculator world, but never quite kind of managed it, but they saw what we were doing, and they copied us quite quickly, and produced ranges of computers which

were, a bit like the Psion Organiser, began to compete with us. And then, we had Palm develop in America as, as an alternative way of having this personal information, which did away with the keyboard, and only had a screen. But it was quite primitive in entering the data, and they didn't the software kind of systems that we have today, and the capacity that we have today.

Mm.

But Palm changed the landscape a little bit. Then we had, Apple launched something called the Newton.

Ah yes. [laughs]

[laughs] Yes, people will remember that. And, John Sculley was the Chief Executive. There was all this hoi-polloi over Steve Jobs leaving Apple, and John Sculley was running it. Of course Jobs had introduced Sculley, he was told that he didn't know how to run a big company. [laughs] And so they brought in Sculley, and, clearly the ideas and concepts had come from others in the company before. But they launched the Newton, but they hadn't quite got it right at all. And, it hadn't been well thought… And so it didn't succeed. But those things, the Newton and then the, and then the Palm, and the Japanese as well, began to generate a wider scale and wider interests.

Mm.

Yah. But the key was the software. The software systems were enormous. And so that was our way of dealing with it, to merge our activities, to take, to be involved on our side with particularly the software systems that were required, and produce it with Symbian and work with them to produce the right hardware.

[1:00:12]
What about Microsoft during this phase?

Microsoft kept trying to address this area, but they just didn't figure out the right kind of software environment that was required for these kinds of devices. It was not Windows 3 or 4 or 5 or 6, or Pocket windows. It was something very different. And, so they never quite got that right, although they tried endlessly, and they produced versions of software, but they never ran with the hardware manufacturers.

[1:00:50]
No. Indeed. So what happened to the Symbian venture?

Well, in 1988, after a variety of discussions, we entered into contracts and signed agreements to create a company which we called Symbian, which would consist of Psion's major software, operating system software, and applications, working in conjunction with the hardware and some software contributions from the big majors, the big giants of the cell phone industry.

*Sorry, that was 19**9**8?*

1998.

*'**9**8. Yes. OK.*

It was announced in 1998. And, the initial announcement was with Nokia, and Ericsson and Motorola. And, so we realised considerable sums to do this transaction. But we were undertaking now a path of very long-term R&D with three, the three giants in the industry. [pause] And later on, Samsung joined us, Sony, Matsushita. So we had most of the industry. And of course the opportunity was not only the weight of money and power that we would have from the entire industry really focusing in on producing a standard, it was also that we had the means of distribution through those companies.

Mm.

And, so I chaired that company. Psion retained something like a third, or forty per cent of the company, and we, we had these three companies which I, three companies,

later six or seven, which over many years I chaired and ran, and it was one of the most interesting things I've done in my life. There I was, chairing a key element of a very big industry, and seeing the way these different companies related to each other. They all knew that they had to work cooperatively, but they were all enemies.

[laughs] Yes.

This was the conundrum. And, companies of course are very tribal. So we had seven different tribes. I thought I was back in Africa [laughter], with different interests, different groups. [pause] The difficulty was the tribal, the head said one thing, and the heart and emotions were saying another thing. Nokia was a very powerful company and I had great admiration for much of Nokia. Jorma Ollila was a great chief executive and chairman. And they had in-depth management of a considerable order. But they were Finnish, they were a Finnish company, and Finland's a very tribal country. It's a small country in a big world, and they're very strong and determined people. And, Nokia reflected some of that. So the great problem that we had was how to get them to agree and cooperate on a common standard. And ultimately, we failed in that regard, over many years. I thought we were going to, I thought we were going to achieve it, but it was very difficult. And I fought many interesting battles to keep them together, and, particularly Nokia. Nokia was king of, king of the, Yertle the Turtle, at that time, they were king of the turtles.

Mm. Mm.

And, and the others would take their cue more from Nokia, but they, but Nokia was the dominant force. And I think, they played all kinds of games to trick the others and so on. [laughs] It was difficult.

Mm.

And it's a great pity that we didn't succeed. Because we can all see now what the, what the opportunity was and what the reward was.

Mm. And so the Symbian venture, just petered out?

Well, no, we sold… I mean, you know, it has its roots going into, Android and applications like that, and, we sold hundreds of millions of computers – of, of smartphones, and cell phones, using the operating system, and I don't know how many but it was a very large number. But it didn't come to dominate, which was necessary. I think the winner is going to be Android, and I think Apple, Apple of course, brilliant with their design and their smartphones, a huge success with the iPhone, fabulous, and that's really kind of what one's aiming for. But I think in the end, Apple is also, comes from a certain domain, a certain kind of customer, a certain set of values and attitudes. All companies have their culture and their values. And Android, supported in the East by giants, like Samsung and many others, just has the weight and the scale that I don't think Apple ultimately will.

Do you think Apple's made a mistake in sort of ring-fencing iOS?

I think… Yes. And I… Yes. I mean Apple's instinct… I mean this is a, this is a battle, it's a rerun of the 1980s, when Microsoft stole their clothes and produced Windows, but it was Apple that produced the metaphor of icons and windows and so on. So Apple created the environment that we have come to use with mice and icons and windows. And they tried valiantly to control all that. But the problem that they had was, they wanted to own too much. And if you are going to generate a world standard, you can't do that; you must share it. And, I think this is the problem with Apple right now. And I suspect that Apple is concentrating ultimately on the content.

Mm. Yes.

And, and I think the software and hardware will be coming out of, out of the East more.

[1:08:05]
Mm. So, I'm just trying to understand. At this stage, how successful was Psion as a company? I mean, was it still growing, or, or what?

The difficulty that we had in making the decision we did was that we also had to give over and share a lot of our underlying software resources. That was the Achilles' heel. And that hurt us. And when Symbian did not succeed on the very grand plan that it had, we did not achieve what we would have hoped there. We had a more modest part to the other companies, and we had to focus more on the industrial side and on communications. And that was the smaller side. And the hand-held computer of course inevitably did merge with the cell phone, but, without Symbian we didn't really have a position there. So we concentrated in the corporate and industrial side. Psion went on for many years. I stood back, for health reasons I stood back in 1999 as the Chief Executive, but continued as Chairman. And, the company, I retired in 2009, and the company was sold to Motorola some years later.

[1:09:38]
Right. When were you born and where were you born?

I was born in 1943, July the 4th, American birthday as it were. [laughs] And, 1943 on the Indian Ocean coast of South Africa at a place called East London. And actually, my father's buried just near there, in a place called Umtata, where Mr Mandela came from, the great South African President.

Your parents were South African, or…?

My two grandfathers were both English born, and they both went out to South Africa, or the Cape Colony as it was known at that time. So that's one of the four later provinces, from the union of South Africa today, one of the many provinces, about seven provinces of South Africa, the Republic of South Africa. They came out as young men. My paternal grandfather came not far from here. He was an accountant and he was taught at Mincing Lane in London.

Oh right.

And I've got a letter from a firm called Chernikov[sp?], who is now a very big commodities firm, still here, who wrote a letter recommending this young man, who had done his articles and was sound. And my other grandfather was a professor of

engineering at the University of Cape Town, and he was brought out at the request of the British Government, who approached him. He was the chief engineer of London County Council. And he had polio as a young man, and so he had a very short leg on one side, and difficult to get around. And they said, 'It's very difficult for you to be contracting with this, but if you…' We have a need, following the Boer War, to, we think, to create a union of South Africa, and it's most important to be able to educate young people about engineering, civil engineering, the new country will require learning in that area. So he accepted and he went out. My two grandmothers were both born in South Africa, of English and Irish origin.

Mhm. And, your father, what did he do?

I don't know, because he died when I was very very young. And so I never knew him. And he didn't… And I think it's an important… I think, as you get older… I always thought as a youngster that I didn't really need a father, because I was fine, I was a very happy child. [laughs] But on reflection now, I look back and I realise that it was a very very formative part of, of the person I came to be, not having a father. I was brought up in my grandfather's home and grandmother's home, a professor of engineering, on the slopes of the University of Cape Town. And my grandmother was a remarkable woman. She was one of the first graduates, university graduates as a woman in, in the world, the very earliest decade, the first decade of the last century, 1900s. And, she did Classics. So, it was quite an academic kind of family. My mother returned there when my father died, returned there, and, and we were brought up in that environment.

Your mother didn't marry again or…?

She did.

Ah.

And I mentioned Colly Myers.

Yes.

Well it's my half-brother.

[1:13:23]
Right, OK. So you were brought up in really a very academic household.

Yes.

And engineering as a, surrounding you as it were.

Yes.

What influence do you think all that had on you?

A great deal of influence.

Can you describe that?

I was very lucky, I was brought up… I mean, my, both of them… My grandfather died quite early, I was only about five, but he was a, I can remember as a child, [laughs] this was an eminent man, and of course later I discovered just how eminent he was, because he really was the father of civil engineering in, in what is now South Africa. And then many infrastructure… He was, he was from Lancashire, he, he was a most interesting man. His papers were left to me, so I've got them, and, he was talking about town planning, and, the nature of town planning, in a very modern way. This was in the Cape Town of that era. He was talking about the issues of, of the different peoples of South Africa. So he was very much a kid of, liberal English gentleman at that stage. [laughs] My grandmother was a wonderful woman, and, she, she played the role of a mother really. My mother played the role of a father, because she went out to work every day.

Yes. Yes. Did she never talk to you about your father?

[pause] No, not really. Which is odd. [pause] I've got pictures of him. My sister remembers him better.

Uh-huh.

I realise how odd it is now, but, I did have a happy childhood, but… If we had a swimming gala… We were both kind of, quite, we liked swimming and running and things like that, and, and my sister and I were very close, she's two years older than I, both of us were very close to each other, I think because of, need be.

Mm.

But, at a swimming gala, everybody else's parents would come to watch their children, but ours didn't, because they couldn't. Because my mother was working. So my sister and I developed this, this myth that other children were hopeless, that they required their parents to come and watch them. [laughter] We were very proud not to have our… We were stronger than the rest. [laughs]

Yes, I can understand that.

Yes.

[1:16:06]
That's so interesting. You went to junior school in South Africa.

Yes.

Cape Town and Harari.

And then… But, at the age of nine and a half, ten, my mother remarried and we moved to Zimbabwe, as it is now. And then I went to a primary school there, for a year or two, and then to senior school, a school called Prince Edward School in Salisbury as it was, Rhodesia, at that time.

What kind of education was that in…?

Well it was a, in some ways quite fortunate because in fact, we did A Levels there.

Ah, OK.

And it was very much under the English system. And, it was a very old-fashioned school, with the positive and negative attributes that you might associate with that description. So a highly disciplined school, very demanding. But, it was a good school. If you, if… In the Rhodesia of that time, there was this tiny little white minority of people, a few hundred thousand, it wouldn't, it would make up Bromley in England. [laughs] And yet they ruled this giant country.

Yes, indeed.

Of which there were three or four million other people. So it was a very odd culture. But the odd thing about it is, how many brilliant writers came from it, people like Doris Lessing who won the Nobel Prize, *The Grass is Singing*. She had to lose her family to do that. People like Matthew Parris today, one of the great columnists in London, and a brilliant writer, he's one. And there are many others. The man wrote, *Mukiwa*, about growing up in Umtali, Mutare as it is now.

Yes.

So there were a lot of brilliant writers. But it was a very narrow society. And so… But the schooling was outstanding in some ways. Not, not like you might get at fancy schools, some really great schools in Britain. But I did A Levels and I did well, and I, I got a Beit scholarship, and it's that that allowed me to go to Cambridge.

So you must have been a pretty good scholar, all in all.

I, I was, yah, I was a success academically, intellectually, yah.

It must have been a wrench to leave Zimbabwe and go to Cambridge?

No, not a wrench to leave Zimbabwe. I was not happy in Zimbabwe.

Oh?

I spent a year at University of Cape Town, before, because the terms are different, summer and winter, before coming to Cambridge.

Mhm.

And it's South Africa that I, that I associate with, because that's where I was as a smaller child.

Mm

And because I had been aligned more, more with it in some way. Maybe it's due to family circumstances and events, I don't know.

Mhm.

But as I say, the A Levels and the scholarship allowed me entrance to Cambridge.

[1:19:27]
And you did Natural Sciences.

Correct.

What does that actually consist of these days?

[laughs] A rather fancy world. It's not just natural sciences. Natural Sciences Tripos, the three-legged stool and all that. It is a great degree. Later I was on the Dearing Committee and the Higher Education Funding Council in England.

Yes. Yes.

And so, I remember we did an analysis of what were the most demanding subjects that were taught. The Natural Sciences Tripos at Cambridge came out the most demanding. It had more tutorials, it had more laboratory experience, it had more demands on you than any other subject. I think that's true. So what it was, Natural Sciences Tripos meant that you, you got a grounding across a much broader set of subjects than is normally the case in British universities. I rather admire the American four-year degree where your first two years you really do take quite a wide spectrum of subjects. It gives you a wider grounding. And you specialise in your major in the last two years. The Tripos is a bit like that in the sciences. You couldn't do, the humanities… You could do philosophy and history of science; you could do chemistry; you could do crystallography. I did crystallography, which of course was a great grounding for, for what happened later.

Exactly.

And, and of course also, in the life sciences. So it was a broad degree.

Mhm. And then you went on to Imperial to do a PhD in mathematical physics.

Yes.

And that's basically theoretical physics is it?

It's… It's, it was, it was theoretical physics in applied, in the applied. It wasn't dealing with nuclear particles, or the frontiers of astronomy. It was dealing with nonlinear phenomena of more complex physics.

Mm. OK.

Hydrodynamics, fluid mechanics. It, it was much more tangible in a way. And, to, to study these things, I began to use computer simulation of complex nonlinear problems. So if we look up at the sky and we look at the vapour trails, if you look at a vapour trail of a jet far up, you will see it clear and white and streaming behind the jet.

But a little bit later on you will see twirls of eddies. That's something called the von Kármán vortex stream. [laughs] It's a nonlinear phenomenon. And if you say these things… There's all manner of things in life that this describes.

[1:22:14]
Indeed. I get the impression that you've been, through your career, very much your own man. Are there people you can point to who've been important mentors in your career?

Yes. There's a man called Keith Roberts, who worked at the Culham laboratories in Oxfordshire. He, he did his doctorate in 1939, which led of course into the war years. And he was one of the physicists in a great set of physicists, like Crick and many others, like Robert Latham, who went into the war effort and developed things like radar and so on and so forth.

Mm.

Contributed to those things. And Keith eventually left, as others did, in the late Forties or Fifties, early Fifties. He, he continued to work in, in other areas. He was engaged in the work on, on the thermonuclear bomb I think. But I don't know precisely what it was, it continues to be secret to this day. Which I feel a bit sad about for him, because he was a, a great… and, and he was, he was a great influence on me because his, his way of thinking was interesting.

Sorry, how did you, what was the connection?

Well he, when I was doing my doctorate, he became one of the people who was important in the fields that I was interested in and involved in. And so in fact I had a relationship with Culham. Which, which was involved in the search for thermonuclear fusion, in a peaceful way. So the Toruses of today and other methods, something called the Joint European Torus followed later. Keith died at a relatively young age, possibly because of his exposure to radiation in the 1940s, and a lot of people like that.

Yes.

People weren't aware of how dangerous radiation was. But he was a great man. He was a mentor to me.

Mhm. You mentioned the Sinclair group and indeed Hermann Hauser at Acorn. I mean, did people like that have any influence on you do you think?

[pause] Yes, they did. They did in the way they set up their businesses and the way they operated. I had a, I think I had a stronger commercial instinct and marketing instinct than, than some of them had, and certainly more at an operational level. So I tried to keep… We didn't have bankruptcies and we didn't default, and we managed the company I think extremely well financially. It was, it was, it was run with certain rigour, which I don't think the Cambridge folk had in the same kind of way. Where did that come from? Probably from the investment analyses that I did beforehand. [pause] I think the… But there were mentors, lots of mentors along the way, in different fields who affected me.

Mhm.

I think it's about ways of thinking.

Mhm.

And, I'm not going to suggest that physicists are the only people in the world [laughs] who have a particular way of thinking. Although, it must be commented that economists, there was a stage when they were a bit jealous of physicists, the models that they can make.

Yes.

The great beauty of physics was that, you always have to test it against experiment. And I learnt, I learnt in what I will describe as the queen of the sciences, physics, that this very hard discipline, that for every idea you had, it's only a rare one that was

right, and you, even though you were theoretical, you had to produce constructs which could be measured and tested, and that was the arbiter. That's the beauty of the subject. It's also its limitation.

[1:27:06]
Indeed. And, you went into university teaching straight after your PhD.

Yes.

What was the appeal in that?

Well I, I enjoyed doing my doctorate. I consulted, I was consulting in a lot of places. My papers got published, and, were of interest. And I was thoroughly enjoying myself. And I, I love, to this day I love the focus of, of an intellectual issue being pursued to the bitter end. If you, if you run a business, you can't do that. It's a very different world. I think it's, a great thing about a society is that we provide lots of money for many people to carry out research, and thinking, and our constructs are such that we give them a lot of freedom to do that. That's wonderful. Because that's what you have to do, if you are pursuing an issue of, intellectual issue of relevance and you're going to pursue it in a, in a high quality way.

Mm.

If you're running a business you've got to worry about lots of other things, and you've got to ensure that people are facilitated, and that they do it, not you. So in old age it's been quite nice to be able to get back to some issues where I can concentrate single-mindedly and in a very directed way. So the worlds are very different, they each have their value, they each have their purposes. We need scientists in great measure, and we also need entrepreneurs in, in, in fact more so even [laughs], for the wellbeing of our society and economy.

[1:29:00]

Mm. When you look back on Psion now, how do you, how do you see it? There's a combination of great success, but perhaps in the end failed. It still exists I believe, but…

Yes. I think, I think the… I think… So if I critique myself. I think in hindsight that, we weren't American enough. Now I don't mean by that that the Americans have anything superior to offer in a wider sense, but, what they do have is, they have a culture and the infrastructure for it which is very focused on taking enormous risks.

Mhm.

So Symbian was an enormous risk. And I think in hindsight, I should have sought to fund it on a much larger scale, and to gamble everything on that. On the other hand, I needed to address the market, and so, it was quite a, it was a, it was a clever structure to put the users of the software system into the party as well. But I think if I had been in America I might have done what Jeff Bezos did. Never worry about profit at all. In London you had to report back, and you had to be concerned about shorter-term profit. In America… Jeff Bezos never made a profit. Well I think recently a few times. [laughs] But the piling on of risk and scale would be followed more aggressively in America than was normally the culture in Britain and in Europe.

Mm.

ARM succeeded in doing it over many years, but over many many years, and with the help of an Apple.

Yes. And you've talked about the tribal aspect of some of the companies that you were trying to do business with.

Yes.

I mean, would finance and risk-taking alone be enough to overcome those kind of problems? Or is it a European dimension?

I think the tribalism is an American feature as well. I mean all, all companies have, have their own tribe, their own kind of culture, and they believe in it. Successful companies have that. Psion had it very strongly.

Mm. But you've talked about the difficulty of, say, doing, you know, working, say, with Nokia, a company you much admired…
Yes.

…but nevertheless had great difficulty in dealing with if you like.

Yes. Maybe Nokia I had too big a position in it. And maybe we could have funded it on a bigger scale with financial money, with City money, or, or in America, New York money, I don't know. But, but more of it, and on a grander scale. I mean in Symbian we employed something like 1,200 people; maybe there should have been 4,000 people. Maybe, the deals, we could have, we could have ignored some of this tribalism and focused on what we really believed was the most critical thing.

Symbian's finances came entirely from the members, is that right?

Yes. Yes.

So you're possibly suggesting Symbian itself might have floated to raise money?

[hesitates] Perhaps. It would have been one mechanic. But you didn't only have to have a publicly quoted market; you would have had venture capital funds. And Symbian would certainly have been able to attract that.

[1:32:35]
Mm. Yes, yes. What do you see as your outstanding achievement, or achievements, over the course of your career?

[laughs] [pause] I found it very exciting, enjoyable, and I think important to create a thriving business for many years. And it, it pioneered many products and many technologies over those years. I think when I started in 1980… My colleagues at

Cambridge back in 1966 all wanted to go to the BBC. I think they still do. [laughter] I think to be adventurous and to go, kind of, off left field and right field and so on, and, in different, different ways, unusual ways, is less common than a healthy society would need. So I think that, that creating businesses and entrepreneurship is of enormous value. It's absolutely vital to society. I think that in Britain, we don't have enough of it. And so that's what I'm proud of doing. I think that when I started, 1980, the number of entrepreneurs was small, and it became much more fashionable, and I think that's been a healthy thing. So I think I have affected, I and a lot of other people, have changed the kind of nature of the culture in Britain for the good. Because of exploring through business, exploring new opportunities, it generates employment, it generates taxes and returns, and rewards for the society as a whole. And it, it creates a thriving kind of society.

[1:34:46]
Mm. We've touched on some of this, but what would be your major regrets?

Well I think that, that I had to step back in 1999. It was a bit earlier than I would have liked to. And I stepped back because of an odd, a strange kidney illness that I've had which has dogged, which has been difficult to manage for me. I think I was right in hindsight, given how things have evolved. I had to, I didn't really have a choice, I needed to do that.

Mm.

But, I regret that that was the case. It was too early. I hadn't developed a person to follow me, or individual. There were candidates, of which an important one was too young at the time to, to appoint. If I had been bold with the rest of our board I might have recommended him. This is Harold Goddjin, who went on to create TomTom later on.

Oh yes.

Harold, I, I helped to nurture from a very early stage back in 1988, '87. And, and I… And, he, he originally started off as a distributor in Holland, and later he became

Managing Director of Psion computers. And he was potentially capable, as it turned out obviously he was capable, of running things on a large scale. But he was quite a young man at that stage.

[1:36:47]
Mhm. Can you just trace for us very quickly what happened to Psion from the point at which you stepped, or, indeed from the point at which you stepped back as Chairman?

Well I, I retired from the company in 2009, had been Non-Executive Chairman for, a considerable time. [pause] Thinking back for a moment. [pause] The board continued, and the company was strong in the industrial sector of hand-held computers and communications, and the systems that go with that. The things that we are used to in our homes now, with Wi-Fi and so on, the kind of things that we built in big scale in, in warehouses and factories and things like that. Eventually, an offer was made from Motorola which the shareholders accepted, and which I also agreed to, and it was sold to, the company was sold to Motorola.

And, it still exists as part of Motorola today?

Not entirely sure of that right now, because… It was independent, but I think there have been changes more recently which I'm not sure about.

I think it's become Psion Teklogix. Is that right?

Teklogix. Correct. Yes.

Yes, OK. And that's a data collection company.

Correct.

So it still exists in, in a form.

Yes.

[1:38:27]
Again, we've touched on some of these things, but, are there any serious mistakes do you think you made? [laughs]

Oh yes. [laughter]

Do tell.

Many. Well you might argue that, that the Symbian project was, as a mistake, in the sense that it didn't ultimately deliver what we hoped. And, and that's true. It was not for want of opportunity, or for want of determination. As I said earlier, I think it, it was a, it was a major challenge in my life, and it was most interesting. I can remember for example holding a board meeting of the industry, it was the telecoms industry in Tokyo, and they wouldn't let the director from Samsung, who was a shareholder, come in. [laughs] Because of Korea, Japan, or something. We solved the problem eventually, he came and we had our board meeting. So we had board meetings all over the world, and, it was very very interesting seeing the behaviour of a giant industry like this and how these giant organisations worked with us.

Interesting [inaud].

And chairing that, I did a huge amount to keep them together, and I think I was, I achieved a great deal. But ultimately, people, we didn't succeed in, in moving Nokia particularly, and others, to a more, a much more radical vision of what was likely to transpire. And so that's a regret, and that's, that's an issue. Would I do it again? Yes I would have, but I think that I might have done it in a slightly more independent way, with, with external funding, rather than internal funding.

[1:40:25]
Mhm. Did you… You had to start. Did you have a clear view of how the industry would develop?

Well the start was 1980. So, the answer to your question has to be, no. [laughs] But, what was quite clear to me is that, the new chips being created, and the associated peripheral, the types of chips, the whole technology of silicon, surpassed my expectations. We were of course soon familiar with Gordon Moore's famous Moore's Law, and that proved to be quite an inspirational perspective. It was founded on what you actually had to do in the fabrication of the devices. So, doubling every eighteen months and so on in size, and in reduction in price as well, de facto, but you know, halving in price, was a, was a formula that you could justify in terms of how you made these things. Ultimately you were restricted by the atomic wavelengths that you end up at, the atomic scale that you end up. So the statistics on which you rely for the equations that we have used to create the silicon of today starts kind of breaking down, or at least a barrier comes to be. And, so these aren't going to go on forever, it's going to come to a halt, and other technologies might or might not take over, I don't know. But we've still got a long way to go in terms of application, in terms of the technology, in terms of the application as well. So the physics is kind of coming towards a barrier, and that will eventually halt the rate of progress in that way.

[1:42:27]
Mm. So how do you see the industry developing, say, over the next five or ten years?

Oh the next five or ten years, the same again. We've got more and bigger and, and greater. The frontiers are different now. The frontiers have to do with data on a giant scale. When I referred to, you can learn more from bits than atoms, the libraries of, the databases of information that we have, in all the different fields that we all occupy as human beings, of the sciences on the one hand or social behaviour through government databases on another, and a zillion other areas of interest, are so giant that exploring these, and understanding the relationships between what the data tells us of different factors, becomes, becomes hugely valuable. And so, your world of journalism is in the process of extraordinary transition.

Absolutely.

The social sciences and the economics, marketing of, in companies, some of it with rather negative connotations. The power of governments to know what we are all up

to, might be, some might see as a good thing; I see it as quite a bad thing. [laughter] Because of issues to do with privacy and the freedom of the individual. It's a very kind of Orwellian world that we're beginning to look at, and worrying. So it's in those areas that the huge advances are to come. Not so much of what has been achieved historically in terms of… That's been done, that's part of our history now. But, our new ways of working together, the new ways of organisation, of everything we do in groups, of businesses, of academics, the way you research, is wonderful, how you can research.

Mm. Mm.

In 1980 we had typewriters. And you didn't have computers really to do those things.

[1:44:44]
What advice would you have for a young person entering the industry today?

[pause] Find an area which has got a long way to travel, and go and join it. And, and do your own thing within it and with, working with other groups of people. My wife and I have supported something called the Bureau of Investigative Journalism for example, and, that's proved extremely interesting, and I, we have received great support from some of the big companies abroad to, from America, to, to develop issues to do with data journalism.

Mhm.

We can learn about our society by looking at the relationships between things in the data we now capture. Our world is full of data in a way that was unimaginable even 40 years ago. And, so this is its risks associated with it. But it also provides new ways of looking at our society, new ways of organising ourselves, and it's quite exciting.

[1:46:02]
Indeed. Have you picked up honours and awards over the course of your career?

I have. I suppose the first award that I got was something called the Mountbatten Medal, which I was very proud to receive, I think in about '84, '85. I was awarded a CBE for, for manufacturing industry, which I'm very happy to be associated with. And, I've, I've been granted quite a number of honorary degrees in academe, partly because of my example as an entrepreneur from the world of science and connections with academe and the outside world, partly I think because of my work with the Dearing Committee, I was asked to join the Dearing Committee, which was most interesting, into higher education, in '96, '97. And then later I worked for many years with the Higher Education Funding Council for England, also the Council for Science and Technology. So, so I've been honoured by Edinburgh University, and by York and by lots. And, also the University of Cape Town.

Oh yes. Mhm.

Which I was, I thought of my grandfather. [laughs]

Do you maintain your links with South Africa and Rhodesia?

We do. We do. We've got a foundation, and we, our focus is primarily on education. And I think this is, in South Africa, this is the great failure in the last 20 years, sadly, is… The most important thing is education. Because it's education that gives you the basic skills that allow you to have a job. When you have a job, then you can help your children learn more and things advance. So, there's not been enough progress. And we've been, I think quite creative in supporting a variety of programmes which help mentoring of children, keeping them going if their parents are at work and so on. Of mentoring children, of helping numeracy and literacy, and, I'm quite proud of some of the things that have come out of this.

Mm. Are you pursuing any business activities at the moment?

No, not really. No. No.

So it's mostly charitable works and, things like that.

Yes. Yes, and interesting projects, of which the bureau is one, and there are others like that.

Mm. I think we'll leave it there.

Thank you very much.

Thank you very much.

Thank you Alan, thank you.

[End of Interview]