



# Bill Jones

Interviewed by

**Richard Sharpe**

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Via Zoom

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*Welcome to the Archives of Information Technology where we capture the past and inspire the future. It is Thursday, 22<sup>nd</sup> July 2021 and it's a very hot day, and we're both on Zoom. My name is Richard Sharpe and I've been covering the information technology industry since the early 1970s. But I actually come from the computing side, whereas information technology nowadays is made up of computing, telecoms and networking, and all three of them are bound now closely together. Making his contribution today to the archives, William Arthur Jones, has been through many generations of this technology, started on the computing side and has contributed to the development of telecommunications and networking. So, Bill Jones, you were born in 1947, where and what were your parents doing?*

My, we were living in, well before I was born I was, my parents were living in Rhoscolyn, the southern tip of Holy Island of Anglesey. My mother went through the snowdrifts of 1947 on what I believe was a tortuous journey to Bangor for some medical reasons, and therefore I was born physically in Bangor, but brought immediately back to Holy Island where we lived for five years. My father was a truant officer at that time, he'd just retired as a merchant sailor from the neighbour and my wife was- my mother was a housewife and previously had been a farmer's daughter.

*What was the rank of your father, as a seaman?*

Very good question. He'd passed to be master of a vessel, but because my father was five foot tall, which is surprising because I'm six foot tall and the genetics are fine, he did not take it up to be master of a vessel.

*But he was trained and he had a great skill behind him, therefore?*

Indeed.

*Were your parents keen on education?*

That's a very interesting question. My mother, an unfortunate background, had passed highest in the county twice for eleven-plus, she had been orphaned from her

mother at the age of 18 months and was brought up by her sisters and commuted to the grammar school in Llangefni where they stayed at a café for the week, paying for it by butter and by eggs, but after O levels I think she retired back to the farm.

*So a truncated educational experience?*

Yes. Her fellow pupils in the same form, two or three of them went up to Oxford and taught me back at the school afterwards. The school I went to was Llangefni Comprehensive, which was, I gather, the first truly comprehensive school in the country. Others were called comprehensive – sorry, self-built comprehensive – because others were comprehensive but occupying different buildings. This was purpose-built, state of the art, best facilities where everyone from the community went into that school.

*Did you enjoy school?*

Absolutely fabulous. Didn't stop. It was such a busy time all the time.

*You were involved in extracurricular activities as well, were you?*

Yes, I was, ours was a rural environment, so lots of farming, a young farming community. There was an industrial site in Llangefni, which was the administrative county, town for the county, but our lives were basically music and literature and Urdd Eisteddfod and rugby and farming. And I spent a lot of time in farms. But then of course at weekends and other times I worked in an abattoir, worked as a butcher's boy, went off to Liverpool to pick up fruit and veg, bring them back, sell them round the council house estates. All sorts of jobs.

*And where did this entrepreneurialism come from?*

Well, the farming community are always discussing cattle and markets, breeding horses to be the best horses they can, winning competitions at the agricultural shows and, you know, working in the abattoir and then the butcher's boy and then fruit and

vegetable, you were basically buying stuff and selling stuff. I mean it wasn't too complicated.

[0:05:11]

*That's how you survived. Were you taught Welsh?*

I wasn't.

*Why not? Do you know?*

Because it was my mother tongue, I was taught English.

*Right. So did you ever learn Welsh?*

Well, it's part of your home language. Yes, of course it was taught at school as well, but that's what we spoke all the time. I didn't speak English until I got to secondary school. And at university I know that two questions in my examinations I did poorly at because I didn't understand the language.

*Do you think that held you back in certain ways?*

Erm, oh, I don't know, because I've never looked at it that way. I do know that there is a thinking process behind every language which is different, and where you place the verbs and the nouns is always different, and no, I don't think it held me back because there are so many other people with different backgrounds in the world.

*So you came through comprehensive education with O levels and A levels. What were your primary subjects, Bill?*

Well, my headmaster, I wanted to be a doctor and my headmaster had advised me to take physics, chemistry and mathematics at A level and then – for the first two years – and then take biology in the third year. As it transpired I took maths a year early and then at A level, within four weeks of joining the sixth form our maths master – I was doing pure and applied mathematics, there were four of us in the class – and the maths

master suffered a brain haemorrhage and we never saw him again. And so he, we got practice questions every so often by another maths master who we never saw, we actually just sat in the class having a chat. And so maths for me was largely self-taught, there was no A level maths teaching. My fellow students, one went off to Swansea to do psychology, another one became a potato merchant and another one went to run a café.

*And this process of self-education, is that common in your career?*

That's a very perceptive question, the answer is yes. Yes, very much so. I can refer to other periods where I've actually gone into a position where no one's given me any tasks or objectives, just told me to get on with it. And because of the change of technologies, you've had to educate yourself sufficiently in new computer languages, in new technologies, and I've been exposed to those in a vast array. I've been exceptionally fortunate in the stuff I've been exposed to.

*And it shows. When you write your own name and put the letters behind it, you have 93 letters after your name, excluding those things that are in brackets, Bill. Probably you've never counted it, but 93...*

What?

*... letters. Oh yes.*

How many? Ninety-three?

*Ninety-three, sir. I have counted them all. You are FRSA, CNG, CGMA, etc, etc, etc. Ninety-three, I've never seen such a list. And that showed me that you are a person who likes to be continually in education, isn't that so?*

I wouldn't describe it as such. I have a curiosity and one is simply a product in a market, and what one has to have are the right attitudes for that market. I'm like a pot of jam that's got to have the right label, be placed on the shelf and when you've got the right labels people will buy it. And my... well, I had a, I did an MBA in finance

at Cranfield and I can remember two or three interviews subsequently where the interviewer said to me, can you read a balance sheet? And that taught me that actually I had to qualify as an accountant as well. Which is silly.

*So you passed out in the late sixties from secondary school and you went to the University of Sheffield. Sorry... you went to the University of Sheffield and you...*

'65.

*'65. You took a bachelorship of metallurgy and you graduated in '68. Now, 1968, I'm a year younger than you are, people of my age were, or my type were digging up the pavés and throwing them at French police. Were you one of those types of students?*

Taking up what?

*The pavés, the French stones from the paving, from the middle of Paris and throwing them at the French police. You presumably were not one of those types of students?*

[0:10:34]

No, certainly not. I wasn't rebellious in that sense, but neither was I an academic in the purest sense. I took metallurgy because it wasn't pure physics, pure maths or pure chemistry, I wanted a combination of them.

*Right.*

And in fact, I was talking to the CEO of a business recently and he said why were you in metallurgy, he said, you don't come across metallurgists these days, they're all material scientists. But, you know, remember that when I'd gone through O level and A level, I had not studied, I just passed the exams and did well in them. Similarly with music, similarly with rugby. So organising myself was something strange, particularly in a city environment like Sheffield, a rural background. You know, even organising buses were completely strange. So I just, I was a great mixer, I just mixed

in with people, I mixed in with the arts people who didn't seem to do any work, and the bridge people, played cards, yes. So that was my life at university.

*Was that quite a wrench...*

The music and the rugby fell by the way at university because I didn't know how to organise myself in that environment and frankly, academic excellence was not something that ever featured in the scientific disciplines, other than in the language and the music that I'd been exposed to in my early childhood.

*Equally...*

That's where you had to [incomp 12:11].

*Okay. Equally you were not therefore trapped in a particular discipline. That seems to me what's happened to you, you've never been trapped in a particular discipline.*

That's another very perceptive comment. I can remember one person at university, all he wanted to do was leave metallurgy and go and become a croupier. And yes, I mean my, subsequent to that, my, I'd been in two research environments, one was Aldermaston United Kingdom Atomic Energy Authority where yes, the protesters were around the perimeters all the time and it was actually, and I was doing some quite advanced research there. And the other one was up at Scunthorpe on the continuous casting there, which was again, was another research environment, the thing was caught up in fire all the time. So I did not want to go into a research environment and I just wanted to be somewhere where I could see a tangible output for my work, which was production environment, and that's how I became involved with British Steel.

*Right. And was that straight after your graduation? Your involvement with British Steel?*

Yeah, straight in.

*Straight in. Did you contact them or did they contact you?*

Yes, there was a milk round, but I contacted them, separately.

*Right. Had you seen your first computer by now?*

Erm... Good question. We were taught BASIC and Fortran at university, I think. Whether I physically saw a computer, I don't know. But the first electronic calculator to come out, the Sinclair era, that was our first year at business school, '72 to '73.

*Right. But this computer, presumably at Sheffield, was a batch machine and you put your programs in and the listings would come back. Was that how it worked?*

Yes, indeed. Yes.

*And what were the programs about? What type of metallurgical issues did you tackle in computing?*

Oh, I can't remember. There weren't that many of them, it was just something else that was on the curriculum which I did.

*Right. So no great, it didn't... did it or did it not inspire you to look more deeply into computing?*

Not at all.

*Not at all. Okay. So you did some work for the Atomic Energy Authority which you can't tell us about?*

[0:15:03]

Well, I can inasmuch as it was looking at the concentration of oxygen and zirconia, which are the things that get wrapped around the rods.

*Okay. And also, in a steel company, what was the steel company in Scunthorpe?*



Scunthorpe was continuous casting of billets. I mean the traditional process is the furnace and then you roll a big billet into a smaller billet, you know. In continuous casting it was to bypass some of that process and get a continuous stream of billets coming out which you could actually use directly in manufacturing environments. You cut out manufacturing processes.

*And this was British Steel?*

Yes.

*A nationalised industry by then.*

Yes, indeed.

*What was the characteristics, what was the culture of that nationalised industry, British Steel?*

Well, I never got exposed significantly to the culture of Scunthorpe, that was, you know, a brief summer vacation, what, two months or whatever it was. But down at Corby, which was the largest integrated steel and tube works in Europe and the third largest in the world, and it had four blast furnaces and the culture was, there was unions there, I negotiated with the unions, I was leant upon quite heavily to join the unions, but there was, it was a huge community of people. This was a one-horse town, everybody knew each other and I, it was a huge site. You know, blast furnace one end, all the way down to tube the other end, probably what, I don't know, couple of miles in size or more, and there was a lot of home working going on. Cars being repaired behind the sheds, the chief engineer also running an engineering business on site and all sorts of other shenanigans going on.

*But if this was rather a large family it must have played to your sense of community as you grew up in north Wales.*

I thoroughly enjoyed it. You were interacting with lots of people all the time, but you know, in the context of an earlier question, I joined as a, on their... a management trainee, six months. I terminated after three months because I really wasn't learning much in any of the places I was seeing, but I can now see the relevance of what they were doing. I joined the cold drawn stainless plant, reporting to the plant manager there, who had regrettably lost his son in a motorbike accident just a couple of months earlier, and had actually holed himself up in his office and didn't come down. I mean it hit him pretty hard. And so I was left a little bit to my own devices, being guided by the assistant plant manager and so I took responsibility for heat treatment there. There were four batch furnaces, two roller hearths and there were one-size-fits-all for a particular specification of steel, heat treatment for specifications of steel, to get the requisite properties of the tubes they're after. These tubes went into the power stations, Hinkley, Dungeness B, and as casings into the oil industry in the North Sea.

*Right. Somebody was looking after you, it seems, in this company, well, corporation, because in 1969, a year after your graduation, you had a three-month junior executive exchange to Düsseldorf.*

Yes. And I look back now – and you do, don't you, in older age – and actually people have looked after me. I have not been aware at the time, but I have been put in places where I've been exposed to a lot of stuff. How it happened, I still try and understand, but yes, I have been extremely fortunate. So yes, I went on a junior executive exchange scheme to Düsseldorf, three months, into the steel industry there and met, well, a complete shock, a lot of people who'd been wounded during the war and they were doing interesting work there and yes, and so it was.

[0:20:00]

*Was that your first time out of the United Kingdom?*

No, because at Sheffield we'd gone on an overseas trip to Belgium to take a look at zinc and aluminium works there.

*Right. Now, 1970 you were assistant plant manager at British Steel and you worked on a really revolutionary computer application. Can you describe it to us please?*

Well, there were two things that I did and this is in the context of your earlier comment about curiosity and all that. In the cold drawn stainless plant where you basically pull these tubes for applications in power stations, the one-size-fits-all heat treatment was giving very low yields, 60%, I'd read in the United States steel, the making, shaping and treating of steel that actually the properties of casts of particular kinds of stainless changed as you added more components, like nickel, chromium, etc. And so what I did was, I got the cast composition from the furnaces and gave them directly to the chargehands who then calculated to a formula that I'd created what the heat treatment should be and at what temperature. Quality control were a little bit upset by this, but the yields went up from 60% to 90%. No one ever came back and thanked me. I didn't seek permission to do it, I did it and it actually worked. So that was one transformational development, giving the chargehands responsibilities to use electrical calculators. They were getting this information via [incomp 22:07] tubes and then they were calculating that specific heat treatment for individual batches that came through. In the other plant, the plug mill to which I then moved, we were on energy shutdowns, basically the plant wasn't working and the chargehands, the foremen were twiddling their fingers, didn't have anything to do. You know, it was an energy saving period in the UK's history. And so I happened- I was living, by the way, at a hall of residence called Graham House, in which there were probably about 200 students living, and I now understand how formative that was because some of those students went to work in the computer department, others went to work in the R&D department. I was one of the very few on the management training ladder, but you know, outside the work we were interacting with each other. A very good friend there, Mike Thompson [sp?], was a programmer on the LEO computer and I was being sent on a management day release to do a diploma in management studies where I learnt about statistics. And we also did big data projects and I think also learnt how to program in COBOL, may well have been, you know, rather vague looking back. And I was having a pint with Mike one night, who was a wonderful pianist [? 23:47], and I said to him, look, can we do this? Which was basically take the, get all the quality control data coded up, put them in a punch card, put them into the LEO machine and get some understanding of how the relationships existed between the chemical composition and the degree of work and the problems that we were getting in quality control. And that's how it started. I didn't seek any

permission from anybody, I didn't seek a budget, people were twiddling their fingers and I just asked the foremen and chargehands if they'd be good enough to go through their last five years of quality control data, coded it all up, which created the coding sheets. Those people were brilliant, they were so good to me, and I got these out to Mike and Mike started to code them up and put them into the machine.

*This was the LEO II? The successor to the Lyons Electronic Office, developed by Cambridge for Lyons, the teashop company, etc, the first business computer in the world.*

[0:25:05]

Correct. I only learnt that now, I didn't know it at the time. You don't, I mean the world I entered into I thought was just a normal world.

*Is this a pattern of yours, Bill, that you don't get permission from people, you just go and do things?*

[laughs] Well, I've learnt a lot since. You've got to take people with you, but at that time people were looking for things to do. I mean if you remember, this was quite early on, you know, business schools were just coming into being in the UK, and so structured management training did not exist. The diploma in management studies we went on was a quite early development in terms of what it taught, how it taught it. I mean I learnt a lot about marketing caravans and sweets and other things.

*And you had to change this program, did you, or this approach, because they brought in an IBM 360, is that right?*

Well yes. What happened was, the LEO machine, my understanding now is there were three LEO IIs sold. The first – or not sold – J Lyons did the first one. The second one was sold to Ford, but it wasn't commissioned nor used. And this was the third one that was sold – I'm talking now commercially sold – and the, it was a commercial machine used for business applications in the business environment. All of the computers had been commissioned and bought, scientific computers. So this was the first business one, absolutely. So it was the first commercially sold business

computer for business application, because the first was an internal purchase by Lyons and the second one was bought by Ford but never used.

*So you're really in on the ground floor there, again.*

Well, indeed. And this was up on the, was it the second floor of a big office block at Corby. During the summer when it got too hot the fire engines were called in to hose the windows down to keep it cool. When there was a fault, then there was – I still don't know to this day why – but there was a baseball bat, why a baseball bat I don't know, or two of them kept in the computer room and when there was a fault, then what the operator used to do was to wander down the alleyways between the cabinets and just bang them, side to side, to find out where the faults were. And that's where it went, yes.

*Quite rugged hardware to be able to take that.*

Indeed.

*How long did you stay in British Steel?*

Until 19... the end of '72.

*'72. Why did you leave?*

July. Well, I'd been at the diploma in management studies at Leicester, in Kettering. There were four of us in this hall of residence and subsequently kept in touch. One had just completed his doctorate somewhere, another one, yes, was a graduate doctor, and there was a third person. And Jim Mitchinson [sp?] said to me, he said, have you thought about business school, Taff? And I said, what's one of those? So the four of us just basically had a chat. You had to apply for a Princeton test to get in for one, so I applied for the Princeton test, I can't remember what it was, 750 quid or, I don't know, whatever, whatever the number. Which I took to get, yes, we were discussing business schools and Harvard was the place to go and I, I took the test, passed, don't know what the score was, didn't seem to matter at the time, but then two years in

North America and a high cost, I couldn't afford that. So of the four of us, in fact I was the only one to go off to business school, the others went off in a different direction, they went up their engineering paths, and I went to Cranfield.

*For a one-year course?*

For a one-year course, which has more taught hours in Harvard in two years, I am now told.

*And in general what do you think you got out of that Cranfield experience?*

Oh. Do remember that my life had been, from north Wales across to Sheffield, down to Corby, I was coming south. London, probably been there twice. Once was to buy a tuba where the, Harold Nash, my tutor, who was principal trombonist at Covent Garden, I went down to meet him to buy a tuba and he dropped me in it in a matinee performance and said, we're off to the pub, Bill, you look after the section now. Frankly it was, you know, there weren't that many bars of music to play, but anyway. So I was left there, had to play my piece in a live concert and that was my only exposure to London, and an interview with Imperial, earlier than that, I think it was. And the... so what did I gain out of Cranfield? First of all, an exposure to an awful lot of people who'd never been north of Watford who were thinking financial terms, who were thinking investment, who were thinking accounting, qualified accountants. People who were wanting to go into marketing in fast moving consumer goods marketing environments. People looked at the world in a very, very different way from the one that I had experienced and, yes, gave me a completely new vocabulary, new way of looking at things, and it was wonderful.

[0:31:25]

*Then you graduated from that. What did you do after that?*

Erm... I went on a hitchhiking tour around Europe all the way down to Turkey.

*Right.*

Did I do that then or not? That was... no, that was before I went up to... anyway, it doesn't matter. It's irrelevant. So, I joined Rank Xerox.

*Why?*

Because I'd been in a nationalised steel industry, as you pointed earlier, and I wanted to counter that with the best marketing environment that I could – American environment – that I could find. And Rank Xerox was top class American management methodology, marketing capabilities, etc.

*Selling photocopying machines?*

Indeed.

*And was there any original technology input by Rank Xerox UK into that, or was these things just the design shipped across, assembled here and then sold in the UK?*

No, we had an R&D department, because my initial entrée into Rank Xerox was through the engineering and R&D department as a financial analyst. And the R&D department, yes, had a lot of technology in their selenium drums and other things, they had the manufacturing facilities down at Mitcheldean, but the R&D facility was up at Welwyn, and yes, I moved from the R&D department up to the corporate headquarters very quickly, got pulled through there. And one of my jobs was to organise the sale of the assets to, back to Xerox in the States, to Xerox PARC in Palo Alto, California. So, you know, it was all the physical assets, the technology, the... those things, just listing everything. The pricing for everything was determined on an inter-company pricing capability, but as an analyst I just organised that details, and that gave me exposure to Xerox PARC in the States and what was going on there and the technology that was transferred across.

*And why was Rank Xerox UK selling that R&D back to the parent?*

I don't know the answer to that question. I suspect it's just an issue of corporate rationalisation.

*Right. Sorry, I said parent, it wasn't a parent was it, because it was only partly owned by Xerox.*

Rank Xerox was partly owned by Xerox, we were selling it from Rank Xerox to Xerox Corporation in the States. Probably the whole of their R&D department was being organised on a global basis.

*And what did you see when you went to PARC? PARC R&D?*

No, I did not go to PARC R&D, I got exposure to what they were doing because I had conversations with them and I was given some literature to read. I'd never heard of the place before. When I left Rank Xerox my last role was internal audit implementation on a global basis, which was to look at the audit reports of the computer and IT systems and operational systems of 26 subsidiaries and a manufacturing entity and ensure that the issues had been identified, had been implemented locally in places as far afield as New Zealand and Nigeria and whatever. But as to exposure with Xerox PARC after that, the answer is no.

[0:35:42]

*Again Bill, someone seems to be looking after you, because here you are, quite young, you're only about eight years out of university, and you're doing this rather important job for Xerox.*

Well, we were all young then.

*[laughs]*

I mean, I've said a number of times that, you know, the environments I've been in have been a little bit like the – some of the environments I've been in – a little bit like the Second World War where people rise to higher levels simply because there aren't that many people around to occupy the slots. If you're in a contracting environment as some of the armed forces have been subsequently, then there've been an awful lot of officers and fewer footmen.



*So, however, when the tide comes in the ships with holes in them don't float.*

Correct.

*So the tide was coming in and your ship didn't have a hole in it. You next moved in 1976 to run a five-site IT department, for whom?*

Carrington Viyella.

*Right.*

For the [incomp] division of Carrington Viyella. I'll be careful what I say here because there were some undercover activities underway there, but basically my task was threefold. One was to go in and develop a new information system for the division. The second was to select a new computer system for the division. And thirdly to look at and implement a new process control technology for the division. The reality for Carrington Viyella then was you basically made your profit in the last hour on a Saturday night. You also made your profit by pooling the sellers of the yarn, take them down a penny or two on kilo, and you reduced the surplus stock inventory by going to Marks & Spencers, Baker Street every Thursday to see what colours were being bought by the shoppers there and to go back to the factory and tell the factory what kind of cloth to produce and what kind of colour to produce. The other part of the business was selling velour seats to Jaguar Land Rover, if you remember those. But again, that was based on colours as well.

*What computer system did you choose?*

We, I went into a process using Hoskyns to select the new computer system. We had a Honeywell in place at the time. The logical conclusion was that we would go to Honeywell. Politics cut across that and said it should actually be ICL, because that's a British company. I left before it was being implemented. I also chose Dextralog, which was the shopfloor process control computer system and that was very interesting in its own way because that's, you know, brand new process control

capability. And I developed the information systems which, regrettably, was to Rank Xerox's level of information systems which the management could not assimilate.

*It's too complex for them?*

No, it just, it was a, basically a business model. It was looking at their world in a different way, and that's been very interesting to me as I've gone through my life, is that you get taught quite good ways of looking at things, and yet the environment in which you're, can be exposed to sometimes has to come up to the same level of understanding. We now know in today's world you've got to prepare the environment properly, you've got to educate people, you've got to bring people along, you've got to enthuse them, etc. And that's happening in the internet world as much as it is in the days then, because information technology means so much to so many different people.

[0:40:14]

*What is the Bill Jones method of management?*

Oh, it's changed. It depends on the environment I'm in.

*Okay. Your next step, you're in Plessey.*

Yes.

*One of the great electronics companies of the UK, now dead. What was your management style there?*

Well, let me just talk about the way in. There's a headhunting company called Norman Broadbent. And I apparently was David Norman's first placement into anywhere to be placed in Plessey. My, the first offer of a job was to go round the world explaining the asset management costing system to various subsidiaries, because the name of the game in Plessey was actually to bring down the inventories, bring down the assets and the management and create cash out of that environment. And that transpired, that didn't happen, I wasn't comfortable with that and I was

given the role of working for the Clark Brothers. As far as management style is concerned, well, when I went out to Germany I found it quite interesting that my management style was initially not a, not delivering the results I wanted, because they were used to a firmer management style than the one I had that was more consensual. And so I consequently changed my approach and things began to happen quite quickly and people responded very positively to it. Before going out I'd actually been looking at different projects. But, for example, at the Caswell Research Centre, I'd been sent up there to review four R&D projects which weren't making progress: bubble memories, holographic memories and some other solar filter activities, all key for information technology. I was also involved very early on in providing a little bit of, providing analysis based on what I could see out in the marketplace on Plessey's stake in ICL, which I presented to the, I think they call it the C-Suite these days, and Plessey saw the ICL stake, you know, they reduced their 25% holding in that.

*What was it like working for the Clark brothers? These are the people who drove Plessey.*

Yes. I learnt a huge amount. I learnt a huge amount. For example, how long it takes between a decision being taken by the CEO and it actually being implemented on the shopfloor. Takes a long time. To look at the businesses in new ways as to whether the management was good or not good, whether it was delivering the results required. Do remember the company had moved from being run on a divisional basis to being run on a subsidiary basis in order to extract the Clark brothers from what would then have become a very large business. But it was the white elephant of technology industries in the UK, it had everything, from semi-conductors through to, well, the core memory used for computers, you know, one where the threads go across, you've got these iron cores, that had just been dismantled and downsized when I joined because that was an old technology, we had new technologies coming through. Michael and John Clark were excellent to me, absolutely brilliant. Michael taught me a huge amount. He was so perceptive on his role in the company as the deputy chairman to John Clark. John Clark's involvement was very different and so working with the two of them in the C-Suite was, it was wonderful. And Millbank Tower, Millbank Tower where, you know, one can remember the Concorde flying along the Thames beneath the height of the window of Millbank Tower.

[0:45:22]

*Why isn't Plessey with us any more?*

That takes you to a very interesting place about the role of government in industrial strategy. I've prepared some work for, I was involved in NEDO and following that time, there's been this view around that governments can't select winners.

*National Economic Development Office.*

Yes.

*NEDO, yeah.*

Yes. And the National Economic Development Office considered things very carefully. The engineers we were working with knew what was going on in the marketplace outside. They read widely, they knew what was going on in the States, they shared that information with technologists, we knew what was going on in Europe. But Plessey was part of the industrial strategy at the time. The defence piece was clearly subject to defence constraints, but it was doing all the right thing in radars, sonars, tactical communications, command and control information systems, Ptmigan, etc. And then on the telecoms side, the digital switching and System X and those things was selling into the Post Office. So straight answer to your question has to be, insufficient revenues to cover the cost base. But I do know that – got to be careful again what I say – the joint venture which was negotiated between Plessey and GEC in telecoms was the, regrettably the death knell of Plessey. Because as soon as Weinstock and GEC had got hold of 45% I think it must have been, because I think Plessey controlled it, of the telecoms business in Plessey, then Plessey was strapped between on the one hand cash and funding limitations and having to agree with GEC, whose culture was very, very different, what to do with this business. And I think that that particular act began to unwind the old Plessey as it was.

*Indeed. We now don't have Plessey, we don't have Cable & Wireless, we don't have GEC, we don't have Mercury, why do these big UK-based electronics, electrical*

*engineering companies collapse, why do they collapse so rapidly? Is it the same reason?*

Well, the causes are different in each case.

*Okay.*

Mercury Communications, when I joined it, was addressing essentially a business environment in the business centre environment, business park environment and it started to move into consumers. There was a change of management which didn't quite work and then the next change of management didn't work and then there was the next change of management, which identified correctly that actually going after consumer markets was very expensive at the time. So it was strictly a piece of strategy and part of that was sold off, the consumer piece was sold off, the cable network part was sold off and then the internet came along. Cable & Wireless hit the dotcom crunch and it is the only company, it is the only company to have survived that era, a long-distance telecoms company and telecoms companies, without having had recourse to new financing and capital raising, etc, because the management managed the balance sheet and cashflow exceptionally well. So it didn't lose value for shareholders. GEC was a different animal from Plessey. GEC was a very cost conscious, not such a technology heartland as Plessey was, the management style was different, but for GEC it was essentially a cost plus activity and the market moved away from that. But Plessey, they were developing lots of new technologies and because they were tied in with a company called GEC which was a different philosophy, I think it hampered them going forward. So you could argue at the end of it that it's all about culture and management and understanding your markets and organising your businesses correctly for the market.

[0:50:50]

*Why don't we now have companies like Amazon, like Facebook, like Apple? We did have companies that were of world standard and led in many ways world technologies, but we just don't now have them and you've been through lots of different businesses, Bill, why do you think the UK is trailing? And Europe for that matter.*

Indeed. I think the... on world standard, world class businesses, they were. I think that in the dismantlement of what happened in the UK, on those companies that we've mentioned, accounting and investment theory has a lot to play because we were organising our P&L and cashflows on a subsidiary basis on a territorial geographic basis, whereas in fact the value of those businesses, particularly Plessey, was, value was its distribution channel globally. It had the ability to take products internationally, developed at huge cost. So the business model is an important one. I'm not entirely sure about financing. Yes, of course, financing is very important, you know, funding it adequately for the future, but as far as Facebook and those other companies are concerned you mention, they came into existence in the main after the dotcom crash and there I have said it publicly that I do not believe that those kind of companies could emerge in the UK with our existing government and structures. You know, we've had a plethora of people from Marks & Spencers and, you know, other materials, building services companies contributing to the development of the governance structure in the UK to essentially drive the value income method of investing when in fact what we need are governance structures that go forward for growth businesses. What's happened at BT between Hansen and Plessis, du Plessis is, I think, very illuminating for this. The board was taking an awful long time to discuss strategy when it didn't need to do that. In California you wouldn't do that – I spent a lot of time out in California – and you would not spend the amount of time the boards in the UK did discussing strategy, they'd just get on with it. And in fact a lot of technology businesses we've been involved in, the strategy is developed by the product developers, by the technologists. They can see the market opportunity, they try things. The important thing there is they try things and if it doesn't work, drop it and move on to the next one.

*So there is this ability, I've been told, to fail in America, and particularly in California?*

Absolutely, yes. I mean I've been to, I've done a lot of work in the States in different ways, in California three times, different existences, up in Chicago, down in Florida, in New York, down in Washington, and yes, it's that propensity to take the risk and fail and if it doesn't work, move on, you know, because the cost, if you get it right, the

ten times benefit of getting it right outweighs the one times cost of failing. In the UK, the – oh by the way, we’re going to probably find a lawnmower coming by so it’ll cut across the sound a little bit – in the UK, we have, we believe in the process, we institutionalise the process and are unable to break the process which occurs in the States and we develop businesses against, very often, an environment which has already moved on in the States. I’ve put forward ideas for how we solve this, but, you know, you need sufficient people, as we mentioned earlier, in your market understanding the issues to be able to make changes.

[0:55:44]

*Lots of things still to talk about, Bill. I must press on. Yeah, we’re going to jump forward to 1992 and the collapse of the Soviet Union.*

Oh yes.

*Now, you didn’t have a role in the collapse of the Soviet Union, I don’t think, from what I can read, but you did take advantage of it. You negotiated and co-founded S-O-V-A-M, Sovam. What was that?*

Well, it was a not-for-profit entity, San Francisco Moscow Teleport, which had kept the communications going between the Kremlin and the White House during the Cold War. We in Cable & Wireless wanted the girdle around the earth and the best way to do that was via fibre. The internet was coming, well in fact the internet had been around for quite some time and I’d been involved in the computers with that back in the mid-eighties. But the... they were looking for a long-distance carrier to be involved, which was Cable & Wireless, and so I spent a long time negotiating that transaction and becoming, concluding it and then becoming responsible for it. Sovam, what we introduced, what I developed was, that it was the X.25, it became the internet’s first public internet service into Russia, there was none before. Then there was SWIFT which was the Society for Worldwide Interbank Financial Telecommunications, which I’d been involved with, by the way, in Brussels during 1978 when it was getting underway and Hoskyns were involved with it. And also they’d begun the idea of having commodity exchanges. So they built the wooden room full of desks for things but they couldn’t populate it with computers, nor indeed

with the communications to make it work. So yes, so formed that and co-founded the public company now of – not the public company - the limited company that was in place with Soros and Halcyon and others, yes.

*I've just been reading the book...*

And spent a lot of time going in and out of the Kremlin and dealing with some very interesting people and putting into place, you know, data communications in 21 cities of over a million people in Russia.

*I've just been reading a book called Putin's People.*

Yes.

*Which describes this period of real chaos under Yeltsin.*

Indeed.

*And the period of the oligarchs and then the period of centralisation under Putin.*

*What happened to this organisation, this company? Did it manage to remain free or was it taken over by oligarchs? What happened to it?*

It broke up, as I understand it, because I wasn't then involved with it, part became VimpelCom, I think, a subsidiary part became VimpelCom, which of course is now a very large telecommunication business, and part became a mobile operator. And so- and I think part of it went into Sovintel. Because, you know, there were activities going on to get various communication activities underway and this was the pre-eminent one as far as data communications across Russia was concerned. Oleg Smirnov was the Prime Minister's son and so I spent quite a bit of time with some of the politicians there. And the world moved on, they needed to consolidate and get capital going, usual restructuring. I think there's been too much restructuring going on in telecoms.

[1:00:21]



*How much, what did you make of the Russian politicians you dealt with?*

They were hugely informed, they were worldly wise, very frustrated with their current situation and desperate to get out of it. Mind you, this is the time initially when there was nobody walking Red Square, seeing anyone buying anything in a shop was very rare, and yeah, Western commercialism hadn't arrived there then. And there were tanks on the streets. I remember being holed up in the Intourist hotel and, you know, a tank, T52 going by.

*You in 1993 founded Global Village Ltd.*

Yes.

*What is that, what does it do?*

Well, it was my service company, consultancy business after that time, because you know, when the changes occur you set up a service company and I'd read Global Village as a concept from Marshall McLuhan and thought, set up a company. It's been kicked into action in various times, but it's now, you know, somewhat dormant.

*Okay. You went on, you worked with MCI, you worked with Motorola, you worked with the European Telecommunications Competitive Association, etc, etc. What's the biggest mistake you've made in your career, Bill?*

[laughs] One? I've made many! [laughs] How long – I thought this was an hour and a half interview. [laughs] I have, I recognise now, looking back, when I look back at my development I've come from a very different background to the one I'm in currently. I have been extremely fortunate, extremely lucky. I've met some fabulous people, wonderful people. Each and every one of them has taught me something in different ways. And I don't think I can say mistake, because each one forces a change and forces you to think about things and each one is a learning opportunity. It hasn't all been easy, but I wouldn't say mistake. I think... the reality of management training now is that you actually tend to look at your life in a different way. The Americans don't look at the world in terms of mistakes, they look at the world in

terms of learning opportunities. You know, to go forward in your life you've got to have application, you've got to have energy, you've got to have aptitude, you've got to have learning, you've got to continually learn and read up about your environment. Not that I practised this initially, but I now do. You've got to keep yourself fit – energy – keep time for your family, keep time for your community, so I volunteer. So my life is very different from the one that existed 40, 50 years ago. And so I wouldn't say mistakes, they were the right things to do at the time and I've learnt from each and every one of them. If you asked me, would I go back to implement an information system in the textile industry, the answer's no. But, you know, that was a learning experience that you then apply in other industries, because what you want to be successful, I think, is you want an educated and an informed customer and if the customer's not educated or informed you'd better make sure that he's educated and informed before you do something. And same applies to the organisations you step into, because you've got to ensure that the environment's created for things to happen. I mean the Motorola mobile business I stepped into was growing like Topsy. You know, the MCI business I stepped into, the internet was growing at a 100% per annum and the prices were decreasing at 80% per annum and some of the strategies we introduced were actually implemented in the States, and I was asked to go across to work in Washington, which I didn't do for personal reasons. In fact, I've been asked to go to the States, to work in the States three times, which I've declined for personal reasons.

[1:05:16]

*Because your roots are here?*

Yes. You know, I've observed how others have gone across there, and then something has happened and they've no way back. It's, you know, I've lived for three years in Germany, I've lived in other places, been resident. You've got Switzerland and done short stints in the States. And I have visited countless countries around the world and seen wonderful, wonderful people who have done things without our view of education. And we, having built that knowledge, we are an extremely talented country. When I came out of Germany I formed the view that we went into our industrial restructuring before the rest of Europe and that we paid for it twice, because we paid for our own industrial restructuring and then we paid for the

Europeans' industrial restructuring and it's been thus since the Second World War. And, you know, that is, we're in a wonderful place, I know how advanced this country is in so many ways. Personal reasons, yes.

*You have a fantastic career, have you sacrificed personal things for that career?*

Well, I, you know, thankfully, very thankfully, one wife, one son and the same since the beginning, live in the same place. So I've very consciously thought about the stability of home life and that is why I did not – under some pressure – relocate to places like Nottingham, Swindon, Sudbury. The opportunities to go to the States were not under pressure but they were extremely attractive opportunities. And there was one opportunity to go out to Nigeria to run a mobile business there which had a big ticket salary side of it which I didn't do because of the environment. So, have I sacrificed anything? Yes. What I've sacrificed is the amount of time at home, and the simple reason for that is, I have spent an inordinate amount of time commuting. You know, Gerrards Cross to Swindon every day is a big haul. Islington to Nottingham every day and back again and be there by 8 o'clock in the morning is a big haul. Nottingham to Sudbury – sorry – Islington to Sudbury, another big haul. So commuting is a problem and that means less time to do the things that I enjoy. I mean I haven't done any music for the last 40, 50 years until I took up the saxophone again four or five years ago. Not again, I never played the saxophone before, so I'm now learning it. But touch wood, you know, I look back on life, my health is excellent despite all that commuting. That's the one regret.

*By- we're coming up to the turn of the century, Y2K, and we have a lot of contributions in the archive from people on the one hand who say it was a very, very well-orchestrated con by the consultants to take money out of people's pockets, and on the other side people say it was an absolutely crucial worldwide investment to make sure nothing terrible happened. Where are you on that spectrum, Bill?*

Well, I subscribe to elements of both of those. You know, the IT industry can be a little bit like the Colman's mustard world. Colman's never made money out of the amount of mustard that was consumed, but the amount that was actually left on the plate. So I, there's a huge piece of IT which goes on now and the growth of

government as a customer – previously it used to be consumer, SMEs, large businesses and a bit of government. The government has now become so dominant that it has a huge IT estate and cost. And I'm not entirely sure the government is an informed customer in the sense that we spoke about earlier. So in order to sell, I think there's been, yes, a certain amount of scaremongering. But Y2K, what Y2K did was it alerted people who previously did not know anything about security to security and it educated a huge number of people in the secure part of systems and to be alerted to systems. Having been in the business of selling, running businesses, supplying GCHQ over here, crypto into BT and NSA in the States, there's a huge amount in the security environment that people simply aren't aware of and clearly shouldn't be aware of in some respects. But what we did do is we educated a cadre of people to this environment which then formed the basis for new industries and new companies that went internationally to do various things. So, was it... the reality is, no one, no single person knew everything about all the systems out there as to whether it was a reality or a possibility. In that environment the risk of something catastrophic happening, you've actually got to take mitigating activities.

[1:11:56]

*Why is the public sector in this country so poor at the implementation of large-scale systems? NHS, public records, patient records, for example.*

When I was on the Broadband Stakeholder Group executive advising the government on broadband, one of the things I did was to instigate and develop a programme management group based upon some of the work that I'd been doing in Switzerland and across other European countries, and I was surprised at the number of people who came out of government wanting to see what was going on, because essentially we were holding up a mirror to government and saying this was your decision, you didn't take it. This was your decision, you didn't take it. That got finessed out politically, because it's not the thing to do to criticise government in this country. An awful lot of people in government are absolutely brilliant in economics and politics and history and philosophy. To deliver large-scale programmes of a type you've just mentioned requires a different culture, different training, different mentality, different accountability. Customer accountability's very important in that. I think there's a lot that falls between the stools there and suppliers are reluctant to criticise government

because there's so much money associated with. I now know, I'm an angel investor in a number of different businesses, you know, there's one company I'm involved with which could transform the government's IT real estate and reduce dramatically the amount of money it spends on the IT real estate and change the way in which programmes are being managed and implemented. But, you know, if you were to go into the environment of advocating that, then you've got someone who's got the existing systems in place and they're going to advocate the fear, the uncertainty and doubt to ensure that they continue to get money out of the same honeypot. But I don't think we need to spend the amount of money that we're spending in government and Health Service and HMRC and patient records, etc, on IT that we are doing, because there are very simple ways of tackling it now. Virtualisation and, you know, a consultant down the hospital was telling me that, you know, he's got to access 14 different systems, IT systems to deal with a patient.

*Not good.*

[1:15:07]

Not good. But we're actually, the thing is, we're actually in a significantly better place than Germany and actually the States as well. If you look at the furlough scheme, we've been able to implement the furlough scheme far more effectively than the US, and the US don't have that national centralised system of getting money from the state into individual estates and out into individual people. And the emergence of mobile payments, with which I've been involved since 1979/1980, it's earlier than that, mobile payments and identity systems now being implemented internationally, it means that actually money can go out to people very rapidly. Yeah. But far more quickly...

*What do you think of privacy and security when you have a major software company – and I'll name it – Microsoft, having a core piece of technology exchange so easily hacked?*

Well, it doesn't surprise me.

*Why not?*

Because of the way in which the software has been built and created over time. Apple's architectures are different and the company, one of the companies I'm an angel investor in, it is now working with Microsoft to deliver a far more secure environment which, well, it's hugely transformative for the world and if you take a look at the, what is it, one and a half billion people use Windows 10 currently. You've got Windows 11 coming along. That will change the system of architecture and the design of that and so much will be done in the cloud, which means that people around the world will be able to upgrade the security of their systems far more quickly and therefore the kind of servers and systems that Microsoft are using will morph into new architectures. So it doesn't surprise me that that's actually happened. I mean the reality, you know – I've got to be careful again on the companies – in the mobile world, which I know, because I don't know, but I can imagine what the world is like in Microsoft, you've got software releases every quarter, but you come up to those quarter positions, you've designed software into the stack that you're going to release into the marketplace and then you have to take things out of the stack last minute, because they're not stable. I had responsibility for systems integration in Motorola so I know how much, how fragile the software is, and you've actually got to put out in the marketplace software which has integrity and reliability and that's not the way the software develops. But, you know, there are an awful lot of good people trying very hard, trying their best, but the architecture is very large.

*Two questions, because I've spent a lot of time with you and I've spent a lot of your time. First question is, you have been deeply involved in venture capital, in finding new projects and investing in them, presumably your success rate is about the same as everybody else's, about one in ten, one in eight, it's relatively successful. What are you particularly looking for now? What turns you on?*

Actually, our success rate is better than that, because I work with other angels and, you know, we understand what's in there and we work to actually create a viable future going forward. Yes, of course, there's a huge swathe of activity in the biosciences that is going to be transformative for the world. Artificial intelligence, yes, of course. Financial services, transformative to the banks. Sensor environments, the role that they can play across a whole swathe of industry and nature, you know,

there's so much that's required to save the planet. Yes, carbon capture, yes, recycling and use of new materials and avoiding the mining of existing minerals. You know, I could go on. The way in which the... mobility is very important, applications in 5G that can work, you know, the internet of things, the internet of secure things. Virtualisation is very, very important, which I've mentioned to you two or three times now, and cloudpaging. And the use of resources, all the renewable side of things. I think that we are in a remarkable position in this country that we can do so many things. We've been part of Horizon 2020 and I was an adviser on that. My experience from that is that actually the science and technology occurs here and then on the other side, some of the programme management and sharing of knowledge occurs mainland Europe. So, you know, it's making sure that we can use the technology we have here by getting it out in the marketplace and distribution of those things as well, it's very important. It's about the business model. It's substituting capital expenditure and operational expenditure and matching that against the revenue.

[1:21:41]

*Your view quickly on blockchain?*

Well, it's here to stay. It's performing huge benefits already in payment systems, in logistics, in so many different facets of life. The only issue is bitcoin and cryptocurrency.

*Have you got investments in cryptocurrency?*

No.

*Because?*

Er, regulations. And it's not real cash.

*Does money drive you?*

Well, that's a very interesting question. I suppose in life it's driven me in different ways. At the moment the answer is, yes, I'm interested in very good returns. I read an awful lot. I read an awful lot across a whole range of things, but I'm not, I wouldn't bust a gut on doing something for money. I mentioned the commuting side to you before, I've done so much commuting in my life and now I'm a little bit more sensible about what I do.

*And one of the sensible things you did was to write and have published in 2015 a book on intellectual property rights. Just tell us briefly the main thrust of your argument in that book, will you, Bill?*

Forty years of being exposed to technology industries in their various forms and seeing government initiatives and being exposed to government in so many different countries round the world and businesses, etc, and seeing so many things going wrong for the technology industries in the UK, that to tackle people's wellbeing, wealth and economy is from an economics perspective, or a political perspective, has sub-optimised what we have in the UK. My objective was to educate people in – there's now a levelling up agenda which has come recently - that book went into so many Ministers' hands from 2015 onwards - so I think we have to get our policies right, we have to think about industrial strategy. I call for a new kind of industrial strategy, I think that began to appear. We need people to understand how to bring businesses into being that better serve a country rather than being distorted by government policies. We need to, it is about industrial strategy, it is about getting people in, from Middlesbrough to Anglesey – I come from what's termed these days a deprived area and I've seen technology having a major impact but actually, rather than the views that come across from politics which says that, well, we need to put money into these [incomp]. No, there are ways and means of actually participating in new industry, the new technology. We've got to nurture them in the UK, we've got to develop them. The number of technology venture capitalists in the UK again, is not all that large and the EIS scheme got changed, thankfully, you know, 18 months ago, we no longer back asset-backed businesses, you know, buildings etc, we really put our money into knowledge-based industries. The thrust of the company is let's get our industrial strategy and our politics right.



*Well, thank you very much, Bill Jones, for a very varied interview, almost as varied as your tremendously varied and successful career. Thank you very much for your contribution to the archives, Bill Jones.*

Thank you, Richard, and thank you for such perceptive questions.

[1:26:19 end of recording]