Capturing the Past, Inspiring the Future

Alan Shepherd

Interviewed by

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9th January 2019

At the

WCIT Hall,
32a Bartholomew Close, London, EC1A 7JN
Kindly provided by The Worshipful Company of Information Technologists

Welcome to the Archives of Information Technology. It's the 9th of January 2019, and we're in London, at the offices of the WCIT. I'm Mark Jones, an interviewer with the Archives of IT, and today I'll be talking to Alan Shepherd. Alan has had a long and varied IT career, culminating in nearly 20 years at the Post Office and Royal Mail in senior technology management positions. He has been responsible for many major projects and investment decisions, and has considerable experience of IT supported and IT driven business change programmes. He is very familiar with the difficulty of implementing change that affects workplace culture and tradition, a challenge that's still very much with us today.

[00:40]
Hello, thank you very much for agreeing to talk to the Archives.

You're welcome.

Perhaps we could start by you going back to your, a few thoughts about your childhood and your early education, and we'll start from there.

Yes, OK, that's fine. Yes, well I guess in today's terminology I was rather a geeky sort of child. I wasn't big on school at all, but I was passionate about my hobbies. I started off with model railways, and I went through the Hornby 0 Gauge clockwork and the Trix Coin, and then started building scenic model railways, some of which were published in the, in the model railway press. And actually I'm still doing that today, and nowadays they're run by computers, and all the little engines have computers in them as well.
[01:27]
The next think I suppose was photography, I was quite keen on that. I started off with my mother's box Brownie, and then my father gave me his folding camera, which was a little bit more upmarket. And I got into home processing. I guess my parents were really, very indulgent, so I was allowed to black out my mother's kitchen, and there I was, with all these dishes of chemicals. I was putting the films through in the dark, and then with the red light you made the prints, and you developed and fixed them and so on. And from there I guess I got into chemistry, and I had a Lott's chemistry set. And you could do all sorts of things with those in those days, you could even

make gunpowder with it. And, once again, my indulgent parents, once I had exhausted the materials in the set, I was taken down to the local pharmacist, who was kind enough to, to sell me a little, little bag of potassium nitrate and sulphur and so on, and I was actually able to make fireworks. I don't think you could get away with that today, and indeed I don't think the chemists would still have that sort of stuff in stock either.

[02:41]

When I got to school, well, to start doing science in the, when I was, Eleven Plus I guess, I was really, so disappointed, because I had been, I had been doing practical chemistry for some years, and then suddenly, you had to sit down and be quiet, and watch the, and watch the teacher doing the experiments up front while you wrote the notes, and, oh dear, that was so, that was so boring, I completely lost interest in that, and it wasn't, I guess, until the third form that one was actually allowed to, to touch the stuff.

[03:18]

But then, then I got into electronics. I had already done a bit with the model railways, when my father brought home a, must have been a *Boys Own Paper* or something like that which had an article on how to build a crystal set. And in those days it was a germanium diode, you didn't actually have the cat's whiskers and all that sort of stuff. And, well the thing worked after a fashion. And then I was able to go out and buy a kit to build a little transistor amplifier for it, and then it would actually drive a loudspeaker, and it was a usable radio. So I got in… I started getting interested in the idea of having a transmitting licence, and I did the exam for that. I went up to Post Office headquarters and did this exam. I was just about, just about fourteen I guess. And then after O Level I spent the summer learning Morse code, you know, went again to Post Office headquarters, in a building where I would one day have my office, and, and took the test at twelve words a minute. I was in the Cadet Force at school as well. To start with I hated it, I was absolutely useless at square-bashing and that sort of thing. But they had these old radio sets from, from the Army and from the Air Force. We had a 12 set, which was a field transmitter, and the R107 which was the receiver that went with it. And, we also had the transmitter and receiver out of a Wellington bomber. And I actually, we were actually allowed to use these things, so, there were wavelengths where you were committed to, to go on, to go onto the air and talk to other schools. And it was before I had my transmitting licence, so I really,

really enjoyed that, actually was able to modify the things to bring them up-to-date a bit, and, we were always noted by the fact that our, our set had BBC quality, whereas all the others sounded rather like the, the garbled sound that you hear on the old war films, which was the result of the carbon, carbon microphones that they, they used. I had updated it with a crystal microphone and a little, little amplifier. So I was, I was really quite, quite keen on that sort of stuff.

[05:34]

I did OK at school, but it was the bare minimum, and I came home and I did the homework that you had to do, and there was no way that I could be persuaded to do anything more of that, because I wanted to get back to my hobbies.

You were science rather than arts, were you?

But I went onto the, onto the science side, yes. And, left to my own devices I would probably have ended up doing engineering, because that was really, that was really my, my passion. But the, the maths side had much better teachers. And, and I was quite good at maths, and so I got purloined for the scholarship class, and ended up with an open scholarship to Oxford, where I went to read mathematics.

[06:13]

So how did you find university maths compared with school maths?

Well it was harder, but it was just, it was just a progression as far as I was concerned. What I did find was, that I was much better at it compared to the other people than I had been at school. I was just, rather fortunate I guess to have been challenged by the fact, one of my fellow pupils ended up as master of one of the Cambridge colleges, and, and then head of the Institute for Advanced Research in, in Princeton.

Wow.

Which is where Einstein and people like that were, so…

Yes. Yes.

I had, I was, just by a fluke, had some really, [laughs] peer pressure at school from…

Yes.

…from that point of view, yes.

Yes.

So… So yes, but I, I wasn't, I can't honestly say I was passionate about maths. I got a, I got a good degree, and that was, that was fine, I was, I was that conscientious. But still, I was running the amateur radio society, which we had there, and, and that sort of thing. So I was still, still interested in my hobbies. I was still doing the model railways, and all, and all that. And model aeroplanes and boats and things as well at that time.
[07:30]
And I guess it was in my second year… No, that's not true. The first time I actually came across computers was when I was still at school, in the scholarship class, and one of our number had been to a day's sort of induction at Leo Computers, and they had handed out a whole load of programming aptitude tests, and put these things out and said, well, you have a go at these things. And, there we were, sniffy little lot, we looked at these and sort of, did them all right, and said, well that's not very challenging is it? [laughs] They weren't, they weren't that difficult.
[08:44]
But anyway, when I really got into computers, there was, there was a little side course. There wasn't any computing in the maths syllabus at that time. There was numerical analysis, but not, not computing as such. But the computer lab did lay on some programming courses in the vacation for people who were interested, and, and I went and learnt ALGOL 60. And then in, in my middle year at Oxford, you don't… One thing about Oxford, at least in those days, was, you didn't have any exams in the second year, which was, which wonderful. And so in the vacation then I went across to the United States and I got a summer job with the Ford Motor Company, working in… It was all operational research actually, I was still doing the maths degree at that stage, but it was assembly line balancing and that sort of thing. And I started getting introduced to IT there. I was taken one day to their headquarters in Dearborn, and we

went down to the basement. It was incredible. There, as far as the eye could see, it must have been hundreds... It was long, this room. Just lines and lines and lines of these computer boxes.

Is this the mid-Sixties? It was probably IBM…

It was mid-Sixties.

…360s or something.

Yeah, the 360 had just come out, and so a lot of them were 360s, and there were some of the previous generation, 1401 and the 1790s and things like that as well. But you then turned round, and what you saw was another sea of people also looking into the distance, and what you had there was girls sitting at card punches, the 026s, the 029 card punches. And there they were, going away. So that was my, my first introduction to IT I suppose.
[09:44]
But anyway, after Oxford, I, I wanted really to, to gain some skills that were a bit more marketable than were just, than just pure maths. And I became interested as I had, as I mentioned earlier, in operational research, which, I mean nowadays it's a technically oriented business degree I suppose, I suppose you would call it. But it was all about applying mathematics and certainly embryonic computers as they were then to business problems of all kind. A lot of the people there who set up the department had come from the Coal Board and some of these, and the steel industry, and some of these sort of places, who were the first people to, to make use of operational research in the, in the commercial world if you like. It, it really started in the war with a guy called Blackett, who set up a…

Oh yes, P M S, Professor PM S Blackett.

Yes, yes. Which, you applied mathematics to things like optimum research patterns for submarines, and, how to use radar in aeroplanes when it was really unreliable, how, use statistical methods to, to work out how to use it. So, yes, I got, I got into operational research, and I did an MA. I was leant upon very heavily to stay on to do

a PhD, because I really wanted to go out and take a job in industry at that stage though.

Mm.

I did have some offers. But anyway, I was preparing to do this thing, and it was all about computer simulations of consumer markets. So, one had a panel of consumers, which were, they were actually real people who had been recording what they had bought and the circumstances, and we had mathematic tape – sorry, magnetic tapes, which came from, from Beecham's in this particular case actually, I was working on the, on the toothpaste market. And one was simulating what happened with different distribution, philosophies of was the stuff on the shelves, or, or wasn't at various times. What advertising campaigns were they running at that sort of time. Looking at how had different people reacted, and, what were their previous positions and so on. [12:00]
Funnily enough, it reminded me of… Did you see that programme a couple of nights ago about the Brexit campaign, how…? No. About how they used targeted data of individual people to target the advertising messages, and… And really, that was the descendent of the sort of stuff that I was doing in the, in the 1960s.

Same maths.

Yes, essentially just, with so much more computer power behind it.

Yes.

In my days, my simulations ran two hours and took the entire computer. So I was only allowed to use it overnight. And the programs were all on punch cards. So, on the day there you were on the card punch, punching these things out, and, if you got a comma in the wrong place, or a card in the wrong order, or heaven help you if you dropped the things, then if you put it in and it didn't run, that was it for that day, and, wasted a day's work and had to have another go.

[13:02]

So were you interested in…

Have a go the next day.

Were you interested in the computers, as in their own right, or a means to an end here really?

Well, I became involved with them because they were a means to an end, but because I had this background interest in information, in, in electronics, and so on, yes, I was interested in the technology as well.

Mm.

Which I suppose explains what happened when I finally left university and went to get a job.

With Vickers I believe.

With Vickers, yes.

Now that was a big, big organisation then wasn't it, really huge.

It was. It was, it was enormous. We had the shipyards in Barrow, and we had all the tank works and so on on the, on the Rhine, and we had the – on, on the, sorry, on the Tyne. And we had the printing presses and printing plates and things in Leeds. And there was stuff down in Dartford, down in Kent, Roneo was down there as well, we made duplicators and things like that. And, the old Spitfire works in, in Swindon as well. Plus, we still had a half share in the British Aircraft Corporation.

Right.

Which actually was instrumental in what I came to do after Vickers, but that was just another one of these funny coincidences.

[14:20]
So Vickers, you were saying, you ended up at the head office.

Yes.

Rather than out in one of the plants.

Yeah. No, actually, I ended up in head office. I was taken on by a director, who had just joined, as a, as a, I guess he was a board member, from the Defence Operational Analysis Establishment, and then, Chief Scientist at the Ministry of Transport. He was a, he was a scientist in the Civil Service essentially, very much involved with operational research. He wanted a new operational research person to start looking at some of these things out in the works at Vickers. So he had me in head office, but as a consultant going out, look at the works, looking at what they could do. And the first thing that really came to my attention was that practically all the things that they could do in the sort of area that he was wanting were going to involve computers.

So would that have been very revolutionary in British industry at the time?

I don't think revolutionary, but it was quite new. There were, there would have been other organisations that were doing things, the, people like IBM did have programming packages for doing production control and that sort of thing. Jay Forrester was, at MIT was writing on, on this sort of, on this sort of subject, industrial dynamics and so on. So it was, it was, it was not revolutionary, but it was, it was quite new nevertheless.

It was modern.

It was certainly new for Vickers. Vickers certainly hadn't done anything like that before. Although, again, it had very clever engineers out in, out in some of the works.

So it sounds like your first business change programme really, doesn't it.

Well I guess it was, yes, because… And the first thing I had to do was to find a way of getting computers that were sufficiently powerful to do this kind of thing, and really, really wanting online capabilities in many cases, which definitely was new at that time. I'll come, I'll come to that again in a moment. But yes, that was, that was very new then. And, the computers they had, yes, they had computers, but they were all out in the works. They were run by the chief accountant who guarded them with his life, and, who, they were used for the books, batch practices, they were used for keeping the accounts, and nothing else. And, so getting sort of, any access to these things, even if they had been suitable, was not going to be easy.

And you were the young lad from head office presumably.

And I was the young lad from head office, who was here to help you, but also with a fairly strong brief to get things done differently. And I ended up with this project to, as to how we were going to get these new computers out into the works.
[17:05]
To cut a long story short, I came up with what was really a, a technological solution to politics amongst other things, and again it was using what was then a very new technique called distributed computing, and the computers to do that were only just starting to become available. So, in the big works, they still had a computer which would do the accounts and so on, but it had a capability to support online terminals, and it had an online link to a big computer centre which we built up in Newcastle. Obviously I was far too young to head up something like that once it started. So they went out and they recruited this guy, a chap called Phil Fellows, who had started his career running bookings in Eastern Airlines, in the States, and he had decided, well, we really ought to be using computers for this. And he got hold of some of the first UNIVAC computers that were just being declassified from the space programme, and used that to implement one of the first two real-time booking systems for Eastern Airlines. The other one was done by, by IBM at one of the, one of the other, American Airlines. Anyway. So he went on to that. And he ended up joining UNIVAC aa project manager, and, and he headed up the project over here to build what was the Beacon system, which was the BEA's online reservation system. So he came to Vickers straight from that.

Mm.

And he was a massive evangelist for real-time systems; he had no time for batch systems in any, any guise whatsoever, [laughs] so he was very, a bit extreme in that regard. But anyway, I, I was his assistant in setting up this thing.

Right.

[19:11]
And I… And in addition to that I ran an operational research department within this new management services section of the centre.

Sounds like a lot of fun.

And it was, it was a massive change programme, some really interesting projects. We had some of the first online shop floor data collection terminals. We had some of the first programmable VDUs, which again he, he brought over from an outfit called Incoterm, whose terminals he had used over there, and they were programmable in a rather crude sort of way, it was assembly language type programming. But, it meant you could do quite a lot within the, within the terminal itself, which was quite important, because at that time, getting good, high-speed telecommunications to these places was not that easy. I remember in those days you had to take the general manager from the Post Office out for a very nice lunch, and talk to him very sweetly [laughs], to, to get the sort of priority you wanted, and, if you were really lucky you got a line that would just about support a 9.6 kilobit modem, which was the height of available technology at that time.

[20:30]
So Vickers sounds fun. And then the Home Office. So, did they approach you or did you approach them?

Well no, they approached Vickers. And that was the interesting thing about it. They were looking for, in their terms a scientist, who knew something about computers to join their Police Scientific Development Branch, and to help them to get new real-

time computer systems out into the 43 police forces around the country, particularly, they were just getting military command and control technology on Ferranti and GEC computers, which had again just been declassified, and putting, they had got a pilot project up in Glasgow, another one in Birmingham. They were wanting to do more things like this around the country. And they were starting to do the first information retrieval systems as well. A sort of predecessor of Google and all that were, were being implemented in the Police Scientific Development Branch.

Again, it sounds good fun.

There was a project down at the Thames Valley. How did I come to be involved? Well, they came to Vickers, and were looking for… And they twisted Vickers' arm. Because at the time, Vickers were doing a very difficult negotiation to, to get their share of the proceeds from the nationalisation of the British Aircraft Corporation, which Vickers owned half of. And Tony Benn had come up with this extraordinary formula by which the commission that was paid, the compensation if you like, was based upon the market capitalisation of the company concerned at the time when the announcement was made in the House of Commons that the British Aircraft Corporation was to be nationalised. This had the extraordinary result that although we owned half the shares, and Arnold Weinstock owned the other half, he was going to get about three times more for his half than we were going to get for our half, because of this extraordinary formula.

Mhm.

And so, Vickers were trying to be rather nice to the Government, because they were wanting to renegotiate this particular deal. And, I was part of the deal. [laughs]

Collateral.

So, it was, it was… So I didn't actually, I wasn't actually employed by, by the Home Office, I… But I had a Home Office rank, and I was treated as a principal scientific officer, but, I was actually still employed…

Still, Vickers paid you still.

I was still paid by them. And I had a, a difficult negotiation to allow me to keep my company car, which at the time my peers in the Post Office were not entitled to. But I did really need it to go round a lot of these, a lot of these places. Although, I did learn fairly early on that wherever possible, let the police do the driving, because they did go for rather alcoholic lunches, and you didn't want to be picked up afterwards, which would have been rather embarrassing for both parties, particularly as the Police Scientific Development Branch was also developing breathalyser machines. [laughs] And, cameras and, [laughs] and so forth.

Right. So that sounds like good fun.

Yes.

Good technology and good fun people as well.

Well it was, yes. It was very interesting. We had a kind of sister organisation called the Police Research Services Unit, by which police officers from the forces were seconded out into this thing, and so I had opposite numbers. For each police force, one of these people was assigned, and I was assigned to one or other of them. And they were, they were police superintendents, so they were quite, they were quite senior.

Senior people.

So I had a lot of really interesting evenings in hotels with these people hearing about what went on in the police force at the time.

Yeah yeah.

Well there were whole lot of things that were very very, which, which would nowadays be regarded as corruption and not politically correct and terrible, but, I have

to say, I'm a bit of a dinosaur in some ways, I just, preferred it the way it was then to the way it is now, but there you go.

[24:56]
So that was only for a couple of years wasn't it?

Yes it was, that's right, yes.

Yeah. So, did you get fed up, or did you decide on something else, or…?

No, it was specifically a, a two-year secondment. And I did actually get it increased for, extended for an extra six months. But at the time the opportunities back at Vickers were not that great. There had been some management structure changes in the organisation, and the finance director there who was looking after me said that, if you can find something better, it'll probably be to your advantage.

Because Vickers was shrinking then wasn't it.

Exactly, yes.

Yes.

And, and so I was, again, talked to one of the, two of the headhunters, that actually I had been involved with when we were recruiting people for some of these, some of these jobs in the police forces and at head office, and, also I did get offers from one or two of the consultants who had been bidding for Post Office contracts, but I decided that wasn't a great idea. And so I ended up going to Rank Xerox. And it was a computer strategy job essentially, international. I was responsible for, for all of Europe, and I had opposite numbers in the United States who were responsible for North and South America. And there was… And also a, a colleague who I had had some involvement with who was responsible for the Third World and the Far East. But I, I was responsible for computing throughout Europe from a strategic point of view.

Did you have reasonable autonomy there? Or were you always in the thrall of the States?

[hesitates] I was very fortunate. I developed this strategy, and they loved it. So, I didn't have any trouble at all with the States. Probably more problem with some of the conservative elements in the UK to be honest. Because again, I had a similar fight to the one that I had had at Vickers, because, they, their computing was all batched. They had massive projects, incredibly complex commercial systems, because, Rank Xerox did a different deal for almost every customer based upon, they had pricing with how many copies you had on different type machines and so on. It was all incredibly complicated. And this was all enshrined in different… In the computer systems, they had these batch computer systems, and they were all different in all different countries. And the other thing they were trying to do was to bring it all together, and it meant worldwide applications. And you can imagine how popular this was with a computer manager in Germany or France or somewhere like that. It was, it was an important local board level guy within the, within the operating companies concerned.

So overall there had been a significant financial benefit to the company doing this as well as presumably opportunities for each region.

Opportunities for new, for new application, was really the main justification for doing it. For example… I've never been great on business cases, I've always had to do them, and they always had to keep within budget, and I've never defaulted in that regard, but it's not really what turns me on in the way that it would turn on somebody like Roger Graham for example. [laughs] So… So, so yes, I had to do that, but it wasn't the justification, if you were to read the report, which is still around actually. It was all about transformational change for the business, rather than particularly about, about saving money. And the solution was not that different to what I had done at Vickers, and it worked for very much the same reason. I sold it to the local computer managers in the big operating companies, because they were going to get their own computers instead of remote batch terminals.

Right. So…

But, they would all be talking still to the central data centre in the UK.

[29:06]
So we're early 1980s now. What sort of kit was around then?

The IBM, oh, 3081 had just come out, the 3032. So that was the, that was the backbone for that particular system. Some of the UNIVAC, I can't remember the numbers now, but there were some UNIVAC machines around as well which some, which some people had, but that, that system actually was based around the IBM 3080 system, which did actually come out during the period that I was there.

[29:40]
And, you mentioned, the stuff you provided earlier about how, there's some great technology over in Palo Alto.

Well, yes, [inaud]…

But they couldn't unearth anybody[?] [inaud]?

Well, very well known, yes, and… And, a lot of the people in our organisation were very aware of it, and I did pay a visit out there at one stage and saw what they were doing. And yes, they were, they were the first systems with icons and windows, graphical user interfaces, and the mouse. A guy called Kurzweil, and all these, all these kinds of things. And yes, it was… They had this stuff.

Mm. So…

But it was, they had great difficulty in how they were going to bring it to market.

So it wasn't seen as a business tool then, was it? It was a kind of, research play plaything.

Oh no. No, it was seen as a business tool all right, but it was the question of how we were going to use it.

Right.

And, the problem was, their customer base was the office manager. So what they wanted was to sell it to the office manager. So what they produced was a super word processing-cum-document management system, but it didn't really do computing in the sense of the accounting and the production control and all that kind of thing. And the problem was that they regarded that as IBM's territory, and the IBM sales manager was so powerful in most of these places. The, the Rank Xerox sales person was, was the top guy for the office manager. The IBM salesman was the top guy for the IT manager. But the two sort of kept off each other's territory so to speak, and…

Mm.

They just couldn't bring themselves to do that. IBM did bring out the PC, and, they never really successfully commercialised it, because, it was, they didn't want it to compete with their mainstream product. Rank Xerox also brought out a PC, and they did bring out the first of these document processing systems as well. But again, they never really succeeded in, in selling them very effectively. And what happened in the end was that, Steve Jobs came along, and paid a visit to Palo Alto, and, a chap called Alan Kay who had done a PhD thesis on object-oriented programming, and, and they had got together and produced, there was a, I've forgotten what the first one was called, but the Apple Mac was really the one that was, that became, became a mainstream product. They did have a, a previous generation one which was a kind of their test bed.

Mm. One of those big missed opportunities in IT wasn't it?

Well, I'm afraid so, yes, and… And we were also frustrated, because everybody could see this, but we just couldn't make our way through the, the marketing organisation to get it to happen.

[32:40]
So did your project at Xerox come to fruition, or…?

Oh yes it did. Yes, absolutely, yes.

Everything worked, they were all happy and…

Mm. Yeah. Well…

You managed to overcome the, all the various political…

Yes. A friend, a friend of mine who took over from me after I left was the, the guy who, who did the numbers to get all the business cases to work and sell, and it was fine, did really well.

Mm. It's good. So…

[33:06]
Anyway, I got headhunted.

Right.

But it was rather annoying actually. One of the things about Rank Xerox was that every year they had a reorganisation, and a few people got made redundant. And one always thought, well, I'm, I'm going to survive the next one, but I'm not so sure about the one after that and the one after that. So I did kind of wonder where I was going.

Mhm.

And the head-hunters came along with a rather interesting offer, but it was only after I had really finished all the negotiations that Rank Xerox suddenly came along and said, 'We've just done this organisation, and guess what, you're going to get a two-grade promotion.'

Frustrating.

I'm going, oh dear, well I'm sorry, it's, it's just too far gone now. [laughs]

Yes. But in the long run, it sounds like a good thing to…

So… So I went to the Post Office. And I think, I think it was, because funnily enough, David Ferguson, who was the guy who took over from me and did the business case, he was much more a finance guy than mem actually ended up joining me and becoming a, a colleague at the Post Office as well. [laughs]

So this was 1984, at the Post Office.

Yes, that's right.

[34:07]
What was happening then about BT and telecoms and the Post Office?

Right. Well, BT had just been separated… Well it wasn't BT at that time, it was Post Office Telecommunications, and it had just been separated from the Post Office. So the two were being run as separate organisations, as a prelude to the privatisation of Post Office Telecommunications, as, what became British Telecom and then BT.

So a huge organisational…

Yes.

Massive, massive.

And, and funnily enough, the reason I came to go there was that, they had had this reorganisation, and of course anyone who was interested in technology said, you know, I'm not really that interested in, in mail. Apart from the people who were specifically into postal sorting machines, which were very big technology, very important computer-based techniques and so on actually. So there was, there was

always the engineering side, but from a business point of view, the computer side had almost disappeared. And they had McKinsey's in I think to do a, to do a, a management strategy, the organisation study, and they said, 'Oh come on, you really need a, a director on your board, on your management committee anyway.' And they went out, and brought in a guy called Charles Reed who came from the British… sorry, the Interbank Research Association, and had been instrumental in setting up the SWIFT network for interbank transfers. So he was a very big funds transfer man. Funnily enough, I had known him years before, though that was a pure coincidence. It was when I was a PhD student at Lancaster. One of the privileges that we had was to go to all the external courses that were run for industry by the OR department, both in Lancaster and in Sussex where our professor, Pat Rivett, had gone to set up a sort of sister department down there. And one of these courses was an introduction to computer courses, which was run by the guys who had set up Logica. So it was Philip Hughes, who is still alive, and I think he's on one of the interviews somewhere.

Yes.

And… So, I have not seen it, so I don't know what he said, but… But anyway, it was one of the, he was reading it. And there was Pat Cohen, who unfortunately died, that died some, some years later. And, and Charles Reed. And, it was, that was really what got me I suppose really interested in computing, while I was at Lancaster. I was using the things, and was making them, but it opened my eyes a lot more to the potential of the things and where they were going. So it was just the coincidences, it was Charles Reed again that, we really hit, we hit it off very much. And he desperately wanted me, was able to do a fantastic deal on pension transfer, which up to that point had, had not been going terribly well. [laughs]

Yes, bit of a change in career isn't it.

Yeah.

or jobs rather.

[37:13]

So… So I… So, yes, I, I ended up working for the Post Office. And I was in charge at that time of setting up the new systems for the Post Office Counters network, as it then was.

Right.

And Charles wanted that to be a funds transfer based system. And we still owned Girobank at that time, so one of the things that this system did was to do online fund transfer from any bank account to a Post Office Counter, in, in either direction, so you could do deposits and, and withdrawals from it.

I think it was the market leader at that time.

It was, it was market… It was, it was market leading at the time. Unfortunately, then, to cut a long story short, the business case for rolling it out nationally, the 20,000 post offices, it was a massive system, required the cooperation of people like Savings Bank, Department of Social Security, all the people who transacted business across Post Office Counters. And at the time they just weren't ready. So unfortunately, that became, that was, that was shelved at that time, and, I went off to do other things within the Post Office, and, well…

Mm. What a shame.

Well, eventually it got, it got revived, probably five, ten years, well five years later, under a completely different guise. The Treasury insisted it was done as a, as a PFI, and apart from sounding a lot of notes of warning which unfortunately were not taken as much notice as they should have done, and which proved only too true in the long term. I didn't have anything to do with it [laughs], it was when I was Research Director, I was just asked at one stage to do a review, which I did.

[39:12]
Oh dear. All right, so what did you move on to at the Post Office then, what was your next job?

Well I, I moved back into, into what was central IT. There had been some organisation changes in fact. John Hanbury had come in to set up a large Post Office IT organisation, which was essentially a service provider. As well as having the strategic responsibilities in those things, it also had all the analysts and programmers and it ran the communications network and data centres and so on.

Mm.

So I got pulled in as, as one of the board members of that organisation, and, ultimately I ended up as Deputy Director of Information Technology.

[39:55]
So what sort of scale was the IT organisation? Thousands?

It was about 1,000 people, about 1,000 people, £500 million a year budget. It was quite a, it was quite a substantial organisation. Again, my major things were, it was quality technology and major projects were major things, so, all the technology strategies for networks and the communications data centres and the terminals. We were probably the biggest buyer of computer, personal computers in the UK. There were Compaq was a major UK customer at one time, and Microsoft a major customer at one time. They used to go across to, to Redmond and to Houston and so on to see what these people had coming out of the labs and develop a, develop the strategies around that. So I was involved essentially not, not in a financial sense but for the technical side of purchasing, all of that technology for the Post Office. I was also responsible for quality. We got ISO 9000 certification for the organisation, which was, we were probably one of the first in-house IT organisations to do that I think.

Was that a real struggle to get in? Or just determination?

It was… It was just determination and persistence actually, as far as, as far as that was concerned. And I was also responsible for major projects as well, for the really, the really large projects.

[41:28]

Mm. So what sort of things was the Post Office doing then?

Well, at that time, apart from what was happening on counters, which, for the reason I was mentioning, was rather off on the side, but actually funnily enough TV licensing was a bit thing then. We ran all the, all the TV licensing programming for the, for the licensing organisation down in Bristol. Track and trace was just starting to become important. That was a very big area of development. Postcodes, funnily enough, I mean they started off just as a way of, of feeding the sorting equipment, but they started to be used as a major geographical indicator if you like, and still are. I mean, very much so. So the postcode system, getting that online and readily accessible through the Internet and so on was, was really important. And, well it was obvious then, things were starting to happen which were going to represent quite major threats, and opportunities, for the organisation.

[42:34]
So, scale must have been significant for these projects.

They, they were, all of them, they were some of the largest IT. Probably the only larger ones were those in the Civil Service.

Mm. Scale and distribution too.

Exactly, the same sort of problem. And yes, we had some of the same sort of problems, although, to be honest, most of the ones we did in-house went pretty well. It was the outsourced stuff that didn't, [laughs] didn't go so well.

Was there an obvious reason for that? I mean I think we all know some of the perils of outsourcing, but I mean, is it just difficult stuff that's hard for others to do?

The Treasury was massively keen on, on PFI and so on, and, they were very keen on the idea that the business people should run that, and that you should keep the IT people at arm's length. Because in effect their careers were threatened, or could be. So, there was, there was always that sort of, that sort of tension, and, some of them were done with a minimum amount of, of expertise, quite honestly, that was the

problem. And all the contractors came along and said they understood all about it, and when it boiled down to it, they didn't always. So…

Never outsource a problem, is the old adage, isn't it?

Well exactly. Exactly right. And, don't get me wrong, we did have some very good projects where we subcontracted the development, and where we subcontracted the operation, but that's very different from a PFI or something like that where effectively you're trying to outsource the whole, the whole business process.

Mm. Mm.

[44:14]
So, so there we are. Anyway, it was at about that point that I did have a major career change, in that, we set up a new organisation which I headed up, which was all about what was going to happen in the future. I was taking over as Director of Research.

So the mid-Nineties we are now, aren't we?

The mid-Nineties. And so that was, technology-based research, but it included the engineers as well, so all the postal sorting stuff and so on, which again was starting to get linked to the online computers; although the two organisations had been very separate, those sort of things were starting to get together, and… And they brought in a really interesting system whereby all the character recognition and so on was taken out of the machines and put into a central computer that, that talked to sorting machine and sorting office. Which was a massive technical challenge at the time, because, because it requited really high-speed telecommunications. Because you had to be able to get a message from the camera at the start of the sorting machine, where the letter went in, to the point where, when it went out of the machine, you actually had to have the address coded and stuck on with a barcode as the letter went out and was directed into the appropriate receptacle.

Mm.

So, so that was really good, and the engineers did a lot of that.

[45:44]
So was a lot of the innovation…

That, that was wonderful.

…driven internally, or did you use external…?

It… That, that… Well we, we always had, there were always consultants around of various sorts, and, as I say, a lot of the operations for something like this stuff we're talking about was subcontracted.

Mm.

They had been subcontracting post sorting machines for years. But the master stroke that they did there, and I can't claim any personal credit for this one, was that they took the computing out of the machine, away from the postal system suppliers, who all had their own proprietary systems that didn't talk to one another. They said, no, we're not doing that. Here's the interface. You do the mechanics. We'll only do, we're going to do the character recognition.

Makes you more agile in what you do as well

And it was much more agile. And it lasted, and it lasted… And the other thing was, that you could, the technology on the computing side was, was developing so much faster, that you could keep upgrading that without having to, without having to replace all your post sorting machines, mechanical things that lasted a lot longer.

Right.

[46:52]
So that was… So that was really good. So there was always all that. But the other thing that was happening was that the Internet as becoming so important. And that

was a threat and an opportunity. Massive threat to the first class letter, but on the other hand, look at all this home shopping that's coming along, look at all these packets that people are going to want delivered really fast. And that was the message that I was trying to plug, but again, it was, it was a massive political change management thing.

Yes.

And there, in the research group we did do some, what was regarded at the time as very innovative things. We had an innovation fund, which was actually, anyone out in, in one of the sorting offices or the business units could bid for some money to do a pilot project, some new idea that they had. We had an innovation lab where we brought people through a sort of, immersive experience where they saw the Post Office as the future, and the home of the future, and various things like that. This is the environment that you're going to be working in folks. And now, let's all sit down and do some computer-assisted brainstorming as to how this is going to affect you, and what you are going to do as part of the business.

The organisation… Sorry. The organisation is presumably still run by the, the postal, not, house is the wrong word, but those who had been in the postal business all their life…

Absolutely. The people at director level were starting to get the message. And one of the things… And, I was very well supported by, by John Roberts and some of the other people there at that, at that time. The other thing I did was study tours. One time they called me a high-class travel agent, because we actually took board members and senior directors from around the organisation, and actually took them to visit other organisations that were more advanced than we were in using computers. And also, to talk to some of the suppliers, that, who were using this technology and how, how they were using it themselves, and how they saw their markets developing. And, and we were fortunate, because we were so large, because our projects were quite, so big, we were major customers of some of these people. So we were actually able to get an hour with Jeff Bezos at Amazon; we were able to get an hour with Steve

Ballmer at Microsoft; we were able to get an hour with Lou Gerstner at IBM, and so on. It was really…

And were these impressive people?

They were, they were really impressive people. They were really impressive sessions. I mean funnily enough, when I go back to a reunion, a lot of the people now still say how memorable those experiences were. And, and we did do, we did get some changes. John Roberts, he did set up an organisation to, to deal with our first websites and so on. So we did have Post office websites, and we had all the URLs registered and so on a long time before most other organisations did.

The change management books say, you need to make the culture change first, don't they, before you try and implement the system.

Well…

And that sounds like what you're doing really,

When that was… I mean that was very much the case, because, the things I was talking about were quite small organisations. The other one, again was a comparatively small organisation, developing a strategy and capability for supporting home shopping, and… And so all this went quite well, and the, the reason… It, it was successful so far; it wasn't as successful as it should have been, and there reason was that actually, unfortunately, matters caught up with the Post Office a bit too soon. [50:40]
I mentioned that I ran marketing research as well at one time, I haven't mentioned that before, haven't gone into any detail on that. But we, one of the things we did do was to look at future markets, and actually produced forecasts of the impact of the Internet and so on upon mail volumes, the different sorts of mail products, both the positive and negative variety.

Mm.

And, with hindsight they were incredibly accurate. But unfortunately, the, the powers that be down in the field, marketing director and these sorts of people, they just didn't want to believe it. And they still had their own market research companies who were still using traditional, the traditional techniques, asking the guy in the mailing room how many letters he's going to be posting next year. [laughs] That was how they did their market research. And, it was just hopelessly wrong, but, he was giving them – they were giving them the answers that they wanted, and so it wasn't as…

So investment wasn't going the right way.

So… So, the investment didn't switch as soon as it should have done. But the other point was that the organisation had serious financial problems. They brought in a new director, and, for some years all developments stopped, at a time when really they needed to be developing. It took up again afterwards, and, OK, they've done a lot of good things in these markets, but, it wasn't as fast as it might have been.

[52:12]
This is the early 2000s is it now, 2001, 2 and 3?

Early 2000s, yes. And, and yes, I ran one or two change programmes, and then that was the point when, it was very interesting actually, that Allan Leighton, who was the guy that they brought in who had done lastminute.com with Martha Lane Fox and some of these things. And he got all the directors together, and he said, 'One thing I have to tell you people, there's only half of you are going to be here next year.' And I thought, right. And so… And I did the reorganisation, and there wasn't a place for me. I made sure of that. [both laugh] And I took my redundancy payment while I still could. [laughing]

He didn't last very long did he?

He stayed the three years that he was assigned to, to get the thing back into the black. So he, he did what he was paid for, and he did that. And it was then the next generation who had to start investing again [laughs], and get the organisation moving forward. But yes, he did the cost-cutting, and, very successfully.

[53:24]
So you decided it's time to, to retire, or to move on?

To, to move on. Well, no, I, to move into semi-retirement. I did some consultancy for various people over a few years. I got involved with the Worshipful Company of Information Technologists and took a role on some of their panels, and, essentially took it from there.

I think I read somewhere that you, one of the things you have done is advise people about the adoption and use of new technology.

Yes, I did, that's right, based upon some of my experience. I don't think I could claim to be up-to-date now, but in the mid-2000s, yes, I was, was doing, doing quite a lot of that sort of thing. And I, I will still talk to people about basic principles, and I wouldn't claim to be totally up-to-date with all the, all the latest developments.

[54:14]
Quantum…

Quantum cryptography. Yes.

Yes. So what was that about? That sounds like a fascinating piece of work.

Yes, that was, that was interesting. And again, it was someone here at the livery company, who was setting up a little start-up, and they were interested in potential developments in quantum cryptography, quantum computing generally, which really was at that time science fiction to be honest. I think it still is, although, a lot has been done since then, so I can't really claim to be up-to-date. And… But also, quantum cryptography, which actually is something which was real. .

Yes.

And, and is doable. And there was gear around to do that. And yes, I was involved in doing some seminars which were, for major banks and people like that.

Mm.

To show them the potential of this technology, and how they might get used to it. I don't know quite what's happened, but, I understand that the security forces stepped in at this point [both laugh], and these commercial products that were available in the marketplace rather sort of disappeared. And, well I wasn't directly involved so I honestly can't say what happened. But it, it rather disappeared.

Well funnily enough, on Friday I'm interviewing Dr Tim Whitley, who's head of BT Martlesham.

Oh yes. Yes.

I think one of their key projects at the moment is quantum cryptography.

It would be I'm sure, yes.

Fibre optics links.

Yes.

So I'll be interested, stuff is happening there.

I'm sure. I'm sure it must be. I mean you can't hold technology back forever, can you?

No.

But, I think the banks were convinced that it was a, that making this sort of investment wasn't a terribly good idea really, and they decided not to. But yes, interesting you should mention Martlesham, yes, because, of course when I was Post

Office Research Director, he was BT Research Director, and we did work together quite a bit on various occasions.

Oh right.

Ran up against, well, Peter Cochrane is still very much around as well.

Yes. I was amazed to read that Martlesham Heath employs 4,000 engineers and scientists these days.

Still. That's interesting.

A big number isn't it.

Yes it is, yes.

Third largest R&D spend in the UK still.

Yes, mm.

[56:39]
Yes. So, thank you for that, that's really interesting. So I mean what comes through a lot of your career is this business change thing isn't it, and how hard it is to make significant change, particularly in an organisation of scale.

Yes indeed, yes.

I mean did you… You must have found that as interesting as actually the technology and the solutions, otherwise you wouldn't have stuck at it and…

Well, yes, and that rather tended to be my role. I wasn't really an implementation project manager. As I was saying to you earlier, I was more of a start-up person.

Mm.

So I, I was about selling the initial idea, and OK, getting enough money to get it started. And then, selling the people who had to implement it. And then included the people who had to, who had to embrace it if you will.

Mm.

And so a lot of it was really managing quite big, just information campaigns of one sort and another, just to get people to see what this stuff was, and see why it was. Because one thing I learnt from Phil Fellows, the guy I was mentioning at Vickers who came from the airlines, he was a, again a businessman rather than a technologist, and he always said, you must have the functional requirements, the detailed functional requirements, for the application specified by people from the business unit, rather than just by professional systems analysts.

Mhm.

And this was… So one always had to teach these people enough about the technology for them to be able to tell the systems analyst people who did the technical bit if you like, how this stuff was actually going to work out on the ground, what I can get my people to do, what I can't get my people to do, and so on.

Mm.

And I did try to follow that pretty hard on most of the other applications that I was involved with.

[58:30]
Mm. Also, one of the things that's changed in our lifetimes has been the desktop PC, and desktop computing.

Yes.

I think there's a temptation to think that people are much more open to innovation now, because they're so used to a PC. But actually my experience, and particularly talking to some young people recently, is that actually, most people still aren't really comfortable with technology.

Mm.

And the same problems as you faced in terms of getting people to accept and embrace and understand, are going to be around for the next whatever you know. That hasn't changed I don't think.

Well indeed, and, I mean one of the things that I was involved with as Research Director was, we tested all the new PCs, and we tested all the new software, and, in those days, you couldn't just connect any old PC and put in any old software and expect it to work. The software, the personal computer software was really quite flaky, and if you wanted to use it on mission critical systems, at that time, you had to, you had to control exactly all the software that went in there. You had to make sure that people couldn't stick in the latest bit of code that they got from the Internet or whatever. And to be honest, actually, it was the people who were really good with personal computers at home who at that time were the biggest challenges. So they were great in one sense, in that they could see the opportunity, but, but yes, they were, in a sense they were always wanting a bit more than can be, than can be delivered. And I believe that even today, that one has had to give into this, and for the people who were running security in, IT directors in large organisations, working out how you allow your really secure systems to interact with people with home computers, is, must still be quite a nightmare.

Yes. Yes.

I think a lot of progress has been made.

Of course it's a bit business driver, because if you can encourage people to bring their own devices in, BYOD, then you save a huge amount of money don't you, if you can solve the security issues.

Mm. Well, I suppose so potentially, but… [laughs]

[1:00:45]
Yes. Yeah. So it seems to me that business change, an IT driven business change, is kind of the same problem now as it's always been, in that, you know, you need to follow the same principles, as you say, get the right people involved at the right time, and, do the right sort of evangelical work, and that hasn't change has it?

No. And I think… And I think this will continue to be the case. I can't say what's going to happen. I mean, when you factor in all that is happening on the political world now is very, is really quite frightening. But I would say, for anyone starting out now, the biggest thing I would say to them, you do need to think about how you are going to cope with change, both from a point of view of how you are going to manage it and how, from a personal point of view, you are going to stay up with what's happening. Because, what you learnt at university last year, or a couple of years ago, is probably not going to be all that relevant in a few years' time; in any case, it is, is going to have moved on a long way, and you need to have moved along with it, in whatever direction you are wanting to follow your career. Whether you see yourself more as a technologist or more as a business person or more as a marketing person, or as a manager or an entrepreneur, whatever you want to do, you need to think about how you're going to manage that over a period of time.

That's right.

Because, sadly, the days when you could join the Post Office, or Vickers, or someone like that, and expect them to offer you a career right the way through to retirement are, are really few. Even in my time it was…

You were probably unusual to stay twenty years in one place, weren't you?

I… Well, maybe, but even so, I was in three or four different places. I didn't stay anywhere right the way through.

Mm.

But in more recent years, I think people will find that they have to move more. Or at last a lot of people. But, it will still be possible to stay with some of these companies, but, particularly in IT, I think the opportunities will be more limited. So… Even if you don't change companies, I think you will expect to have to manage as a greatly differing environment, and you will need to look at how you want to position yourself in the organisation for your next job.

[1:03:10]
That's… One of the things, in a very small way, I lectured to some sixteen-, seventeen-year-old IT students, it's an organisation called Career Ready, which is supposed to help young people prepare for the world of work.

Mhm.

I do a talk which is about careers in IT. One of the things that's evolved into that talk is that I say that, if you're an IT person, one of the skills you have is the way you think. And that logical structured thinking process is in demand in the business environment as much as it is in the IT environment.

Yes, that's true.

And you may well find that you've been a technologist for the first five years of your career, and then, the business community welcomes you with open arms because you're a logical, straight line thinker, and that's a, can be a rare commodity sometimes.

Yes. Yes.

You know, I think I, as you were just saying really, you can't expect to be a programmer for 20 years or a security specialist for 30 years.

Well I suppose you can, but you've got to keep, you would have to keep refreshing the technical environments in which you, in which you are operating, and, and you might not want to do that.

Yes, that's right. There's a career for a specialist still I think.

Yes, yes.

Someone who really wants to get immersed in information security, you know, I'm sure they would have a great life for 40 years. But many people will find I think their IT skills are more widely applicable than they think perhaps.

Yes.

And they probably need to be, as you say, to stay adaptable enough to…

Well, I think so. And I think, actually, to understand a bit about selling and a bit about business is probably a good thing. I have to say, the selling side was probably my weak point. There are plenty of people here at the Company who were great, who were able to set up their businesses, because they knew how, they knew how to sell. In that sort of sense, they knew how to close deals.

Mm.

I, I was a sales person in the change management sense, but that is different to, to, to selling in an environment where you have to close deals. And if you go into one of the big consultancy companies, even if you start off as a technician, actually even if you stay technical, if you want to get above a certain level, they are going to want to see you going out in the business, they're going to want to put you in front of the customer.

Yes.

And get you…

Yes.

And, and get you, closing deals.

Mm.

Equally, if you see yourself as an entrepreneur, if you think, if you've just come out of university, and you want to set up a start-up and think you've got the basis of a wonderful idea, then, you really do need to get some financial skills, and some business management skills, and you need to think a bit about your personal attitude to risk as well [laughs], financial risk.

Yes, I think that's right. The, the days when anybody could make money out of an IT start-up are gone.

That's right, yes.

So you need a more rounded approach than, than that now.

Indeed.

[1:06:06]
Yes. All right, well I think I've come to the end of my questions. Anything else you'd like to chat about while we're here?

Oh, no, I think… I think the thing that I would say is, certainly for me, it has been terribly important that you should have something that you're interested in outside of your main career. For me, it was always my hobbies, and when I retired actually I took the exams at the Wine & Spirit Education Trust [laughs], and now involved in organising events for the International Wine and Food Society. So that's really been quite a… With international events again, that has really been…

Mm.

In fact that's been fascinating. For some people, doing some things for charity has been really important, and we have a lot of people here at the IT Company as well who have been really involved in using IT within charities, and, and supporting IT-related charities as well.

Mm.

So there are lots of…

Mm.

I think it is important for people to think about what they're going to do.

More rounded than just a cyber security specialist.

Outside their main career.

Yes.

Quite apart from whatever you do in your family life and so on.

Mm. Yes, I agree. I agree. Well look, thank you ever so much for sparing the time to talk to us. I'm sure it's going to make a fascinating transcript for, for the readers. And, Alan Shepherd, thank you very much indeed.

You're very welcome.

[End of Interview]