Jane Tozer MBE OBE

Interviewed by

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Welcome to the Archives of Information Technology. It is the 26th of July 2018, and we are in the headquarters of the Worshipful Company of Information Technologists, in the City of London. I'm Richard Sharpe and I've been researching and writing about the IT industry since the early 1970s.

Dame Steve Shirley, in her wonderful contribution to the Archives, asked why so many successful women have flat heads, and that was, she said, because men come up to them, pat them on the head and say, 'Well done, dear' in a condescending way. Like Dame Shirley, we have today another woman who has smashed the glass ceiling in IT. Jane Tozer, MBE, OBE.

You've worked inside companies, you've founded companies and you have become an adviser to the private sector and to the public sector, a board member. It seems that there is no ceiling above you. We'll examine that, however. You were born in 1947.

That's correct.

Where were you born and what were your parents doing?

[0:01:13]
I was born in Sale, Cheshire and my father was a quantity surveyor and my mother was a housewife.

And was this an academic background?

No, not at all. My father set up his own firm, quantity surveying firm, had a bad experience with the first partnership he formed, and went on to form a second partnership, which thrived.

And you went to a primary school there?

I went to a primary school, no, we moved to Knutsford before I was one year old, so I went to a primary school in Knutsford.

Right. And what was that experience like?

Well, there were two primary schools, actually. One was about 100 yards up the road on the same side of the road as our house, so at the age of four and a half I walked there and back on my own. That was okay in those days. And then after a couple of years, at the age of seven, moved to Glebelands Primary School, which was about a mile or – no – half a mile's bike ride away. So I rode there on my own, under strict instructions from my mother that when I got to the main road I was to ride along the pavement, not the road, which I did.

Did you enjoy school?

Yes. Not a hundred per cent of the time. The transition, moving from one school to another and making new friends, I remember as, you know, slightly difficult couple of weeks. But, by and large I enjoyed it, yes. I enjoyed the challenge, I loved learning new things, always have. I had two elder brothers, they were ahead of me, obviously, when I was young, and I strove all my life to catch up in terms of knowledge and experience.

[0:02:54]
So this was a driving motivator for you?

It was. I've been driven to learn new things ever since, as early as I can remember.

What did your parents give to you apart from your birth, your life?

Well, my father was successful, the second partnership he set up was successful, so we had a comfortable middle class existence. The other thing that my father did, first of all he was scrupulously fair in the way he treated me and the two elder brothers. Went to great lengths about that, and that is a sort of lasting lesson for me, to treat people fairly. And he also, I think, just by talking about his business, imbued in all of us the importance of honesty and the importance of integrity in dealing with clients. It was a very, very strong feeling of his that you dealt fairly with clients, you did a

good job for them, you did your work professionally and you didn't seek to cheat or lie or take advantage in any way.

And the rewards would come from that?

Yes, from acting in business with total integrity and with fairness and with honesty.

And your mother?

My mother was hard working. She'd left school at the age of sixteen. In those days – she grew up in a mining village in north Wales – and, you know, I don't think the family could afford to send her to university. She succeeded at her secondary school in terms of matriculation, as it then was, and quite possibly would have liked to have gone on and studied at university. She never complained about it though, so I only have that vague impression. But yeah, she was a good example as a housewife and mother.

And she had three children to look after.

She certainly did, three children under the age of five, yes.

That's a lot.

Yes.

[0:04:54]
You moved into secondary education.

Yes.

Did you take your eleven-plus?

Yes.

That was a crucial hurdle.

Well, I took it a year early.

Had your brothers taken it?

Yes.

Had they passed?

Yes.

So you were all going into grammar schools, that type of class of school?

That's right, yes.

Okay. And you looked forward to that because you liked new subjects?

I just looked forward to going to the bigger school, to be honest. Yes.

And what did you focus on in terms of the subjects that you were learning?

Well, I went to two grammar schools. I went to Altrincham Grammar School for a couple of years, which was a single-sex school. And then, because of the baby boomer generation, they built a new grammar school in Wilmslow and moved people from the Wilmslow catchment area from a variety of schools to group together in the Wilmslow Grammar School. And that was mixed, because they only moved first and second years from the other grammar schools in the catchment area. So I went in as a third year student and it was mixed until the whole population of the school grew – third, fourth, fifth year and so on – by which time they'd built a girls' school to move all the girls out to, but I was at the mixed school throughout my entire time there. So I was one of the first girls at Wilmslow Grammar School for Boys and also one of the last girls at Wilmslow Grammar School for Boys, as it became.

What was that experience like?

It was great, actually. To be honest, I found the atmosphere in a mixed school a great deal healthier than the atmosphere in the single-sex school that I'd been at for the first two years. And what's more, they did science. I'd discovered science at the age of seven, looking at my oldest brother's physics homework. He had a little diagram which showed how a fire heats a room, using conduction, convection and radiation, and it was mind-blowing to me that you could explain how a fire heated a room, it just didn't occur to me you could explain how things actually worked. So once I discovered that I wanted to do science, but the first grammar school I went to, their idea of science was making copper sulphate crystals and a bit of biology. So I was delighted to go to the mixed school where we did physics and chemistry as well as maths.

[0:07:17]
Did physics become a particular focus of yours?

No, it was maths I loved more, because I loved pure maths. Physics is applied maths and to my brain, a great deal more difficult than pure maths is.

Why do you think your bent is towards pure maths?

Because it's pure logic and I think I've always had a very logical way of thinking, so it sort of came naturally to me, pure maths. I didn't have to work hard at it or revise much.

You sailed through your O levels.

I took the O levels a year early, yes.

There's a pattern here. Everything's a year early.

Well, yes. I took therefore A levels two years early, compared with many people, and stayed on for a third year in the sixth form, which you had to do at that time if you

wanted to apply to Oxford and Cambridge. Plus I was also too young really to go to university.

What language did you learn?

What language?

Yes.

Oh right. I learnt French for O level, which was mandatory, and then at that time Oxford and Cambridge, people thought they required you to have Latin to apply, but they didn't actually, they only required you to have an inflected language. And I'd dropped Latin in the third year because I regarded it as a dead language and there's no point in learning that because nobody speaks it. So in my third year at sixth form, I did a one-year course to get German O level, because that's an inflected language, so that qualified me.

[0:08:51]
And you moved to Cambridge? You applied and you moved to Cambridge?

I went to Cambridge, yes.

Is this the first time you were living away from home?

Yes, yes.

What was that experience like?

I was always independent, I always wanted to be independent, so I welcomed the independence. A bit daunting, obviously. You've got to make totally new friends, didn't know anybody else who was going there in my year.

Had your brothers been to university?

No, no, they went to, they became quantity surveyors like my father, so they went to a college to learn that.

So you were the first Tozer to go to university?

Well, of that generation, yes, yes, that's right.

You had three years at Cambridge?

Yes.

You get a double first in mathematics?

I did, yes.

How did you enjoy that? Who was teaching you there?

Oh, gosh. I can remember very few of the names of the lecturers. You had different lecturers for the different specialist subjects, so maths, you took different modules. Were there about a dozen I took? I don't know, quite a lot. So we had different lecturers for those. I enjoyed maths, yes, I did. I had two very important experiences, actually, as a result of doing maths at Cambridge. In the first term, I sat in the initial lectures and couldn't understand a word the lecturers were saying. It was a totally different language, it's a totally different subject from school maths, as it was then. And the boys who'd been to public schools had spent their third year in the sixth form effectively starting the university course, so they knew about groups, they knew about fields, they knew about a lot of terminology that I knew nothing about, never heard of. And I, I just thought, I don't know what this lecturer's on about, I can't do it. So I went home for the Christmas holiday at the end of the first term thinking, I can't carry on with this, I can't do it. I went back through the notes of the term over that holiday and gradually the mist began to clear. And all of a sudden I started to understand it, because I learnt the terminology. And that has stuck with me all my life, that when you face something that you think is impossibly difficult, you sort of get your head down and you plug away and work at it and you'll probably work it out, you'll

probably come through it. So that was the first experience. The second experience was at the end of the three years. As I mentioned, there are those various specialised topics within maths, and I set myself a six-week programme of revising before the final exams. And as I revised these different topics, as I thought they were, gradually I saw all the linkages between them. By the time of the exam, I saw it as truly one subject, rather than quite a collection of apparently different subjects. I saw all the linkages between the different specialisations. And that was a wonderful feeling because I knew I was going to do as well in the exams as I possibly could. I would have hated to have done the exams feeling, oh, if only I'd done a bit more work I could have done better than I did. I knew I was going to deliver my best results. Of course I then didn't really use maths thereafter, so I lost that global understanding of maths very soon afterwards. But it was a fabulous experience to have had.

[0:12:20]
From very early on you're a very focussed person, are you not?

Yes.

Where do you get that from?

I get that, I think, as I mentioned, from my very early experience of wanting to catch up with my brothers and applying myself to learning.   And, I'm an introvert, I'm very capable of totally focussing. As a child, if I had a headache, at Christmas we'd have cousins round and there'd be a heck of a lot of noise in the house, and if I had a headache I'd go and just get a pile of old comics, either mine or my brothers', and spend a couple of hours reading through them, it would get rid of the headache and, you know, I could just close out the rest of the world and focus in on that.

You're able to focus on one subject at a time?

Yes.

I found that with Ken Olisa as well, Sir Ken Olisa. I think that's a remarkable ability.

Right, okay. Yes, I know Ken.

Do you, do you consider yourself remarkable in that sense or is it just you?

It's just me, yes. Lots of other people can do it, some other people apparently can't do it and indeed, people – I can also do several things at once, as you have to in life – and some people are particularly strong at that. You know, people are different.

[0:13:30]
Did you know what you were going to do when you left university?

No idea at all. Well, in the final year, we had various careers leaflets and so on. I don't remember any guidance, careers guidance, except for one phrase, which was computers pay well. That was the sum total of the career guidance that I remember receiving. And I got various leaflets, they weren't all connected to computers. For example, I got a leaflet for Barclays Bank, and this leaflet for Barclays Bank was addressed to people who are about to be graduates. As I read it, it became apparent it was addressed to men who were about to become graduates, because it said, if you're worried about women competing for career prospects, don't worry, because they remain tellers in the branch. And I so wish I'd kept that leaflet. It went in the bin, as you can imagine, pretty fast. But goodness, I should have kept that leaflet.

Had you met a computer yet, upon graduation?

In the third year in the sixth form our maths teacher got us to build what we then called a computer, I mean unrecognisable in today's terms. It was a whole load of valves and relay switches and things and it just did very simple calculations, but we did that as a project, that was…

And at Cambridge?

At Cambridge there was only one term's course on computing in those days, which wasn't an inspiring course. I remember using the wind the handle forwards adding machines and wind the handles backwards to subtract. We looked through a big

gallery with windows in front of us down at the large machine that they had in the university, you know, which was being tended to by various minions, human minions. But no, computing didn't really feature in the degree.

[0:15:20]

And in 1968 you joined IBM UK. Did they find you or did you find them?

Well, interesting question. Well, it was both, I suppose. I applied to various companies, IBM obviously being one of them, and IBM was unusual compared with the other people I applied to in that they asked you to take an aptitude test first. So I took the aptitude test, which I loved because it was just logic, it was just logical questions. And then I went for the interview in a tiny little room about half the size of the room we're currently sitting in. And as soon as I opened the door this man behind a desk leapt up, came round the desk, shook me warmly by the hand and said, you're exactly the sort of person we want, where would you like to work? So this was IBM salesmanship, this was my first experience of salesmanship. And the enthusiasm and the positive attitude he adopted was, how could I resist? I went to other companies, one of which again did a whole day of aptitude tests, which I enjoyed, and they actually offered me more money to go and work for them, not much more, tiny amounts we're talking about in those days. But it was the enthusiasm of the IBM guy that made me want to work for him.

Where did this interview occur?

In Cambridge, I believe. Yes, I think it was in Cambridge. Whereas I contrast that with a couple of really traditional British companies at the time, where the interviews were very stodgy. I remember one with a row of five ancient men the other side of the desk. I mean they were probably only 40, but they looked ancient to me, and their attitude was, go on, impress us, and if you get a first we just might deign to offer you a job. So, that was not an appealing approach for a potential employer to adopt.

Often on joining IBM, one is trained immediately, were you trained?

Absolutely, two-year training programme. I mean the training programme was six weeks on a course, then back to the branch doing practical work, you know, helping out on various customer situations and projects and so on, then another six weeks' course, and so on, spread throughout these three years – two years, rather. And they trained us obviously not only in technology, in computers, but in handling customer call situations, you know, physical calls, making presentations, all sorts of things, fantastic training.

Very good training. Yes, Sir Anthony Cleaver says he joined IBM because they trained him. Burroughs, they wanted him to go out and visit clients and get in business to begin with, instead of training him, and so he chose IBM. You became a systems engineer?

Well, that was my title from the start, trainee systems engineer and then so on and so forth, yeah.

[0:18:11]
What was the role of a systems engineer in IBM in the late sixties, early seventies?

Well, it wasn't spanners. We had customer engineers to do that. It was pre- and post-sales support and it was technical pre- and post-sales support. So you'd be involved in helping salesmen to put together bids, doing some of the technical preparation for the bid, perhaps doing demonstrations for your prospective customer, and then you'd be involved in helping to install systems after they'd been delivered, and helping to support them. For example, I spent six months working with Ford Motor Company, in the basement with a team of systems engineers, and we were doing programming and maintenance and support for the customer. That was part of the deal at the time.

IBM had a structure of divisions.

Yes.

What division were you in?

The DP division, data processing division.

DPD.

Yes.

And of branches. What branch were you in?

Well, I started in the Welwyn Garden City branch. Then after three years I moved to the transport branch, which was based by Richmond station, just above Richmond station. Then I went into the education centre where I was training other IBM employees; there were two halves to the education centre, one was customer education and one was internal education, so I spent a few years in internal education teaching data communications, and then I went into systems marketing.

[0:19:43]
IBM in this period in the United Kingdom was seen as a threat, as it was, to ICT and ICL, the eventually state-owned computer company with government support which got government tenders immediately, and IBM was a bit of, bit of the rogue on the outside. But it was growing very rapidly and it had a number of characteristics to it, which I'm very interested to hear your comments on. First of all, it was – and I don't mean just male – I mean it was very paternalistic in that there was a human resources, or whatever they called it, a personnel department.

Personnel, yes.

Which mapped your career out for you, often, and would have a position and then two or three people that could fill that position later on. So it was very guiding of people and it was always looking for talent. It looks like they picked you up as a piece of talent early on. Do you feel that that's so?

Well, the way you describe it wasn't how it was perceived by me and the other people I knew. We felt we were in charge of our own careers, we did not feel we were being told what to do and when to do it. So, for example, it was at my initiative, I believe,

that I moved from Welwyn branch to the transport branch and Welwyn branch didn't want me to go, so… And it was my initiative then to go to the education centre, for different reasons. And so on and – and to marketing staff. So they may have had a plan, but we were individuals, we had our own plans as well. And I didn't particularly plan my career. I knew somebody else, I remember one of my colleagues in IBM saying, oh, I know exactly where I'm going, I'm going to have this job and then I'm going to have that job, and that always seemed rather strange to me, I was more of an opportunist. When things came along that appealed, I would try and go for them if I could do it.

Do you remember if he succeeded in what he predicted he would do?

He got to where he predicted he was going to, yes, that's right, yes. So maybe both approaches worked.

So you didn't feel the guiding hand?

No, I didn't, I didn't feel I was being in any sense channelled into some path that I might not have wanted to go in, no.

[0:22:08]
Okay. And it was also a company of men with dark suits, blue ties and white shirts.

Well, that's not quite right either. I remember a talk about dress code and what we were told is that we should wear what made the customer feel comfortable. And obviously in many cases in business that meant dark suits and shirts and ties. But, for example, people working with advertising companies would go along in their leather jackets and their polo necks, because that's what advertising people were wearing at the time. The guidance to women was almost non-existent. I mean you knew that you had to look professional and that you had to fit in, as I say, with whatever would make the customer feel comfortable, but you could wear anything you liked, really.

[0:22:59]
By now, presumably you're dealing with a range of mainframes called the 360 range?

Yes, indeed yes, absolutely.

[0:23:06]
What type of applications were you struggling with for your customers?

Ah, that's an interesting question. I remember stock control applications and forecasting applications and I worked with Vauxhall parts and accessories for a while, so they must have had supply chain and applications and so on.

So many of these things would now today be packages, would they not?

Absolutely, yes.

But then these were mostly bespoke…

Absolutely.

…applications for…

And we would sometimes write them for the customer or we'd work with the customer's DP department to help them write such applications, yes.

Right. Did you stay in the data processing department of IBM, which is the big mainframe side?

Yes, yes, throughout the time.

All the time?

Yes, absolutely.

You weren't involved in the midrange or any of that?

Obviously we were aware of it and might sometimes work with colleagues on it, but no, I was always in the DP department.

Or office products?

No, no, I wasn't involved in the office products division.

[0:24:08]
You specialised in telecommunications.

Yes.

Now, it's not the most natural technology in the world, to turn a mainframe into something that's involved in a telecommunication network. It takes quite a bit of engineering, not least of which a telecommunications monitor, piece of software which is quite complex. IBM had such a piece, called CICS, did it now? CICS [pronounces 'kicks'].

It did, yes.

Did you work with CICS?

Well, yeah, I wasn't a fan of CICS. [laughs] No.

Why not?

It was, it was a telecommunications operating system software and there was a piece of operating system software that pre-dated that called QTAM, which I thought was actually technically very…

It's called?

QTAM. Q-T-A-M. Queued Telecommunications Access Method. And I thought that was vastly superior to CICS, to be honest. But, it was a bit like Betamax and VHS, CICS won in the end.

Yes. CICS had been developed for a utility customer in the US, hadn't it?

Yes, it had, yes.

And then it was actually passed for development over to the Hursley Lab.

Yes, that's right, yes.

Were you involved in liaising with Hursley?

No, I wasn't. No, not- well, might have a few times visited, but no, not in any significant way.

So you were implementing CICS for customers?

Yeah, well I was implementing QTAM actually. [laughs] Yes. And indeed, teaching it when I went to the education centre.

Okay.

I taught Ken Olisa QTAM, he still remembers the fact that I did that. [laughs]

You became an expert in IBM's communication software.

Yes.

You saw, in this period, particularly in the earlier seventies, many computers coming along, being more and more powerful and being much more flexible on telecommunications than a mainframe would be, which is, after all was oriented around smashing through batch programming as fast as possible.

That's right.

Did that leave you concerned about IBM's position?

Well, that was around the time I left IBM, and that's when personal computing first came in. And of course at the beginning, personal computers were nothing to do with telecommunications.

Mini computers, I meant, mini computers.

Oh, mini computers.

Did I say personal? I'm sorry, mini computers.

No, I probably introduced personal.

The likes of Digital Equipment Corporation and Prime and so on.

Right yes, okay. Yes, okay. They, yeah, they were a competitive threat, they were growing in attractiveness. But IBM brought out its own products to compete with those as well and I was involved in the launch of one of those, the 8100, which was aimed at competing with that sort of operation.

What was it called?

Eighty-one hundred.

The?

Eighty-one hundred.

Eighty-one hundred?

Yes.

Ah right, right. Eighty-one hundred. That was a proprietary system when things were going open.

Yes.

And IBM had a bit of a struggle trying to establish it in the marketplace. I do remember they had a big American user, Work Wear Corporation, and they paraded him through Europe, paying his bills, trying to persuade people to buy the 8100. Few people bought it, I understand.

I know, it was not a great success, despite my involvement with the launch of it. Yes, that's right.

How were you involved in the launch of the 8100?

Oh well, I was working in systems marketing by that time. And so systems marketing's job was to launch new products and to work with the branches to train the staff and the salesmen and so on, yeah. So yes, it was a great project and it was very enjoyable, but it wasn't the most successful introduction in the world.

No.

No.

Were you there when IBM launched the Series/1, the mini computer?

Yes, but I wasn't involved with it.

You weren't involved with that, okay.

No.

[0:27:50]

Okay. You went on to international project product management roles?

Yes. Well, that's what I'm talking about, the systems marketing role, yeah.

Okay, okay.

Yes.

And marketing staff, planning and control systems, to co-ordinate IBM's marketing staff across the UK.

Yes, that was my last couple of years, that was a sort of internal role to, the various marketing staff departments would compete or cooperate with each other to varying degrees and this was an attempt to get them to cooperate more and compete less in terms of acting on a unified front.

[0:28:27]

What happened in 1982 that meant that you left?

Well, I had my son in 1981 and I took some maternity leave and I went back to work, at that time I was working in Chiswick. And I would drive there every day and the traffic was getting worse and it was taking three hours a day to drive there and back, and I thought, I don't have three hours a day to spare, I want to spend more time with my son. So then the phone rang, by chance, somebody who'd heard of me and was interested in getting me to go and work for what was then FI, and it was the right approach at the right time.

And where did that phone call come from?

From the then managing director of FI, from Allison Newell.

How did you know the MD of FI?

I didn't.

You didn't?

No. But she had some ex-IBM people working for her, so I'm not sure how she got my name, but she phoned me up.

And in '82 you took the plunge into FI.

Yes, I did. In January 1982.

As the business development manager.

Yes, I was running- it was, I won't say from the sublime to the ridiculous, but from the sublime to the much smaller. I'd been part of marketing staff systems management in IBM for a few years and I was going to FI to run their entire marketing staff, so yes, I had their internal education function and I worked with regional managers to agree our marketing plan and put that into effect.

What was the state of FI in '82?

It was obviously a much smaller company than it subsequently became. It was interesting, because I had assumed that all companies ran themselves like IBM ran itself, because I'd gone straight there from university, and I found that this wasn't true. [laughs] That were certain things, just to take one small example, we'd have management meetings in FI and if somebody had an idea they'd be sitting around the table and they'd put forward their idea and people would either say yes, no, or that's a load of rubbish. Whereas we'd never do that in IBM. If you had an idea to put over, you'd be up there with a flipchart stand and, you know, drawing on the flipchart and that's what I did because it never occurred to me to do anything else. And if you stand up and start putting over ideas, you got more energy, you got more enthusiasm. In fact, it was there that I realised just how much sales and marketing was endemic within IBM. Everybody was selling to each other all the time, even if it was only, now's the time for lunch, why don't you come for lunch with me. You know, we

were all selling to each other, all the time. And so I did that within FI and it was a culture change.

For them? Did you manage to persuade them to change?

Well, somebody told me I'd changed the internal culture, yes. So I guess it was for them too.

[0:31:31]
Only two years there. What was that?

Well, again I got a phone call. I got a phone call from a friend I'd known from university, saying he was leaving Logica and wanted to set up this company. In fact, he wanted to set up two companies. One was a product company, a software product which would automatically write programs from very high level specifications, it would do the coding. It was a sort of meta-coding language. And he wanted to set- he wanted to run that company and he wanted me to come along and run alongside that a services company that would use that product to develop software for customers. And I'd always wanted to be involved in all aspects of a business and in IBM and in FI you're compartmentalised, you're doing one specialist role. Whereas this was the opportunity to be involved in all aspects of a business, a business albeit only of five people at the time, but that was an irresistible offer as far as I was concerned.

[0:32:42]
I assume you didn't meet any prejudice because you were a woman in FI Group, had you met any in IBM UK?

I went into the IT industry because it was a young industry, so part of the attraction for me, apart from the IBM sales pitch, was that it would be an industry that was more open to talent, that it would, you'd be treated on your merits and there wouldn't be sort of embedded discrimination. And by and large that was absolutely true. Not a hundred per cent, I met a few little bits, but by and large that was true.

[0:33:18]

So you moved to Softwright Systems as chief executive.

Yes.

From '84 to '97, another thirteen or so years in the helm. And this gives you the experience of being CEO, of being in charge of this whole operation to produce systems for customers using the particular metalanguage, the programming. What was the programming metalanguage called?

Oh, it was… oh, good heavens. I have forgotten.

That's okay.

Yes. I'm terribly sorry, it'll come to me.

Was it good?

It was good, it was very good. It was very good. It was really productive and it enabled us to use a totally new development technique, which was prototyping. Prototyping is quite a common idea nowadays, but we could use this metalanguage to sit down in a workshop mode with a customer and brainstorm what they needed and produce a prototype demo of that literally within an afternoon, which was fabulous, because you got the real feedback - oh no, that's not how we want it, or we need to add this on as well. So we were able to be incredibly productive at writing systems using this new technique.

[0:34:37]
In the very early times of writing software there was very little thought into how it was written, you just started to write it. There became an assessment, an idea that actually there had to be discipline involved, there had to be a number of steps involved, and you shouldn't be able to move from the system design, for instance, into coding until you got all the system design done and then the idea came, well, and you've got to get the customer or a client to sign off the system design before you

move into coding, and then you've got to move into testing, and then you've got to move into implementation, and this is called the waterfall technique.

Yes.

Up against that, you're now posing a radical technique, I suppose I would say it was at the time.

It was radical, yeah.

And it was very controversial because a lot of people said, look, our experience is you will fall on your face and this won't work, because you haven't been disciplined in the steps.

Yes.

So able to prototype really quickly?

Yes, and the problem with the waterfall method, which became apparent over time, is that you can spend a month, six months, a year producing your specification and getting the customer to sign off, but when they see it, they don't like it. With prototyping, you were intermeshing what we want with seeing how that might work out and saying, yes. So, building the specification is what it really helped with, because you got the right specification very quickly. In fact, we got a wonderful piece of publicity very early in our time at Softwright, where Alan Cane, the *FT* writer, did an article about us in the *Financial Times*, the heading of which was 'Quick and Dirty Means Cheap and Right', and what a brilliant piece of publicity that was. Here was this little handful of people doing this, and all of a sudden we get quite a big article in the *Financial Times*, which obviously I used relentlessly in promoting the company and went into our brochure, and so on. So we felt we owed him a great debt of gratitude because it actually got us prospective customers.

[0:36:37]
How many people were in the company?

When I first joined there were five. It grew very rapidly, within a few weeks there were thirteen and so on. And we were working on one big project to start with, which was going to last us six months, which was fine, that's just what you need. But after about four months I suddenly thought, ah, this is going to come to an end soon, I'd better go out and find some more business. So I hadn't been a salesman in IBM, but that's when – and in fact I'd been a bit snooty about the sales people in IBM, I thought a systems engineer was more respectable as a job – but that's when I realised I had to go out and be a salesman, so I had to start pounding the streets and finding prospects to keep everybody occupied once this big project came to an end.

Which was this first project?

It was for Centre-File. I don't know if that name means anything to you? It was a company owned by several of the banks, doing clearing type work and yeah, it was a big project for them.

And it's a very small company being trusted for a rather large project by banks.

Yes. Yes, might not happen now.

No, how did you get that?

Well, I can't claim credit for that. I mentioned that a friend from university had phoned me up when he had this code writing application and wanted me to run the services business, and he'd won that particular piece of business and that's why he wanted a services company set up to honour that commitment.

[0:38:09]
Did you have any particular policy, as of course FI Group did, about employing women?

Not at all, no. We just employed the best person for the job. Never occurred to me to have a policy, either way.

Either way?

Yes.

Where were you based?

When I first joined it was in Byfleet, near Weybridge. Very soon we outgrew that office, we moved to Chertsey. Then we moved to another office in Chertsey and we set up an office in Finchley, and then we brought everything back together again later on.

[0:38:45]
What did you find most challenging in your role in the early days of Softwright as CEO?

Finding customers was very challenging. I learnt that being a salesman isn't a disreputable job, that it's possible to sell with integrity, but it takes a lot of, a lot of work. So I never had, as I said, never had a sales role in IBM, although I realised I'd picked up by osmosis a lot of sales training. And to find prospects, the first thing I did was, in those days you could buy lists, prospect lists. You had to, because you couldn't type into the internet, you know, tell me about this company, or whatever. So I bought this great big fat list of possible businesses that might need our services and I went through it and I recognised a lot of names, either because they were IBM customers or because they were just big companies. And the IBM customers tended to be the bigger companies. So I set about cold calling the names that I recognised and basically we got enough business out of those to not need to bother with all the names I'd never heard of on this prospect list.

Cold calling is a soul destroying business, is it not?

Well, I didn't find it so. I mean it's difficult. I'd go in in the morning and I'd say, okay, I'm going to call all these people and I'm not going to give myself a reward of a cup of tea until I've got a meeting with one. So I'd just keep going until I got a

meeting and, you know, you got quite quickly used to the fact that you've got to grab their attention in the first 30 seconds, otherwise you stand no chance.

How would you do that?

Well, I got my introductory lines quite honed as to what I would say about the company and what me might be able to do, yes.

Yeah. But again, it's a woman's voice coming over the phone.

Yes, I don't know whether that was an asset or a liability, I don't know, I just got the meetings. Who cares?

Dame Stephanie Shirley had to change her name to Steve Shirley to get her first work.

Well, I did it by phoning up, so they already knew I was female.

[0:40:46]
Okay, they already knew. Did you have particular areas of expertise?

Yes. In Softwright Systems we did work for primarily three categories, because what we were building software for was PCs linked by communications lines to mainframes. So, distributed computing, which was a pretty radical idea at the time. And that was our specialisation. PCs had only been seen as home computers up until that time, and all you did on them was word processing and a spreadsheet. So yes, and the people who needed that were banks, we did systems for bank branches, we did systems for retailers, because they needed systems for their shops linked back to their mainframes, and we did systems for the IT sector itself. So we built systems for IBM and for Olivetti and for various technology companies, Motorola and so on.

So retail, finance and the IT sector were your real focus?

Yes, they were.

What mistakes did you make early on, as being CEO?

Well, the first mistake I made was thinking I was in charge. [laughs] Because I discovered pretty rapidly that you're not, the bank manager and the shareholders are in charge. So, yes, that was an important mistake. But- and we were majority owned by Micro Focus, 51% owned by Micro Focus. So another mistake I remember making was the Micro Focus finance director wanted our balance sheet, because they had to report on it in their report and accounts one particular year, and I was still doing all the accounts and so I sent this off. And I'm not an accountant, and it didn't balance, [laughing] which I hadn't realised. I was doing management accounts, you know, and annual accounts with our auditors, but the balance sheet I had didn't actually balance. So he was mightily grumpy, and I couldn't understand why he was so upset, I totally understand now. And so I set about trying to find the error. It took me three days, and the reason it took me three days, it was in the place you'd least think of looking for. It was actually in the brought forward balances. I took as gospel what our accountants had given us as the brought forward – auditors, rather – as the brought forward balance, and worked on the transactions through the year to this year's end balances, but there was a mistake in the audited accounts. And I kept searching for it and every time I squished the balloon in one side, it just popped out the other side and I couldn't get rid of this £3,750 error, you know, it's seared into my brain, that number. And finally, I thought, I'd better check the carried forwards balances, and there it was, there was the mistake.

Not yours.

Not mine. Well, I suppose I was responsible for those audited accounts, but the auditors should never have brought us faulty balances.

[0:43:51]
And it grew and it grew.

It did, yes.

To how many people?

We were about 120 people at the time we were bought by an American quoted company.

Constantly profitable?

Yes, yes, we always made a profit, yes. We had a difficult time, we had to lay a few people off one year, in '91, which was very difficult indeed, because…

You went through a couple of recessions, the whole industry did.

Yes, it did.

In that period.

Yeah.

How did you tackle that?

Well, I remember getting some advice from a- we joined the Computing Software and Services Agency and we did that because I thought that meeting more people from the industry would be very helpful, as we're growing, I applied to get voted on to the council of the CSSA, which I was. And I thought, that's great, because I'll meet other CEOs of bigger companies than ours, so when I've got a problem I'll be able to say to them, can you help me with this. Which they did, they were very, very generous. So – sorry, I've lost the thread of your question. What was I trying to answer with this thread?

The depressions that you had to work through.

Oh yeah, that's right. I remember one fellow CEO of a larger company saying to me, in difficult times, what you must do is watch the cash, that's all you should care about.

Cash?

Yeah. So look at your cash, look at your commitments, make sure you're getting in enough to pay out on your commitments. And if you're not, you have to adjust your commitments, you have to reduce your costs. And don't do it in salami slices, do what you need straightaway. So with that advice in mind, we did have to make eight people redundant, which hurts a lot because it's not their fault, it's your fault you haven't got enough business to keep them employed. But you're doing it to save the jobs of all the other people. You're actually doing everybody a favour in the longer term, that doesn't mean that it's a, it's a really horrible process to go through, you feel bad about it.

[0:45:51]
In your second year at Softwright, you joined the Computing Software and Services Association as a council member.

Yes.

So this is you networking.

Yes, indeed.

Which you might have done before, but the rest of your CV shows that you are tremendous at networking.

I saw it as part of the job. I am an introvert, but I was absolutely capable of going into a conference or some sort of meeting room, not knowing anybody there, and in my role as part of my job, just going up to people I don't know and talking to them and basically looking for prospects, looking for work, yeah.

You became vice president and president…

Yes.

…of the CSSA. And you overlooked the, revamped the services the CSSA gave to its members. What was wrong with the services that they were giving to their members?

Well, nothing wrong, but like any organisation, you have to, you know, cut your cloth to suit – I've got the phrase wrong, haven't I? You know what I mean. You have to make sure you're doing what you can afford to do and doing it well, rather than trying to spread yourself too thinly and trying to do too many things and not doing any of them well. And I'd been flying to the States one time and reading a magazine on the flight and this magazine had an article about the Oregon Experiment. Experiment? The Oregon Survey. Anyhow, the state of Oregon had decided it couldn't deliver all the services that it was currently delivering to its citizens, it needed to prioritise and focus on a shorter list of things that it was doing. And rather than just meeting internally, the civil service, and deciding, well, we'll do this and we'll cut that one out, they surveyed the citizens of the state of Oregon and asked them to put these services in order, and then they moved the line down to the point at which they could afford to do all those things and they cut the things out below the line. And I thought, that's a fantastic idea and I suggested to the council that we do the same in the CSSA, which we did.

And improved it?

I hope so. I like to think so.

[0:48:04]
What type of clout did these associations have in government?

Not much when I first joined. It was one of our issues that we felt that government didn't really take us seriously. And obviously when I became president I worked with the DTI a lot to try and raise our profile and our clout. The DTI, Department of Trade and Industry as it was then, also didn't like dealing with two industry trade bodies. There was the CSSA for the software and services side, and there was the other association, the FEA? Oh gosh, I can't remember the name of it, but anyhow, it was the hardware side. And they said to us in no uncertain terms, they'd like to deal with one voice for the technology industry. So I was part of a working group of council members who worked with the hardware association to bring about a merger of the two into what is now techUK.

techUK?

Yes. It's gone through a couple of names along the way, but that's what it is.

[0:49:09]
As these things do. Did you see, when you joined Softwright Services, and also FI Group, did you see a really positive impact of IT82?

I wouldn't say I did. I mean it raised awareness, but I can't put my finger on a really positive impact.

People weren't biting your hand off to get these new wonderful technologies because of Ken Baker's campaign?

Well, he was a very good Minister and we were all really grateful, and he set about, he set in place some education initiatives which were also very valuable. So I absolutely would only speak very highly of what Ken Baker did, but it's a hard task, yeah. So he did raise awareness, he improved education, he set in place training opportunities courses called TOPS, and we got quite a lot of our Softwright employees from TOPS training courses, this was designed for people who'd set off on one career and wanted to change, perhaps in their twenties or early thirties, to IT as a career, and you could get a six-week training course in programming and we took quite a lot of the graduates of those courses. And they were very good employees, by and large.

[0:50:28]
Do you like continuity?

Er… Well, I'm not unduly wedded to it. I mean the alternative's got to be better. If you're going to disrupt things it's got to be better. So continuity is good until it becomes stale.

Up until this period, which is the late 1990s, 1997, you left Softwright and it was taken over.

Yes. I stayed on for eighteen months after it was taken over.

Right. You presumably had some shares.

Yes.

And you became rather rich, did you?

Well, no. Not in, well, rich is a relative perception, isn't it?

It is.

So, in some people's terms, yes, but in terms of many of the other CEOs around the CSSA council table, no.   But yes, I can't complain.

And you had seen in that period the most successful companies used to be vertically integrated, like IBM, chips into systems, peripherals, software on top of it, sales, support, package it together, sell it out.

Yes.

And support them thereon. And what happened of course with, early on the role of digital equipment, but also the role obviously of the PC, was that that was completely busted up and it became a vertically sliced industry, which was no longer integrated vertically at all and you had specialists in software, you had specialists in chips, you had specialists in supporting them and so on.

Yes.

Did that type of change come easily to you?

Yeah. I didn't see any problem with that. I mean it was just more efficient and led to lower costs and to more efficient and sometimes better products as a result.

Right.

Yeah. I mean, it's not only the technology industry that's gone that way, car manufacturers used to take sheet metal in one end and a car'd come out the other end and they'd built everything that was in it in the factory. And now the engines come from one place and the gearboxes from another and so on and so forth.

[0:52:35]
By '97 we're dealing with the early period of the internet.

Yes.

How was that affecting your business in the mid-nineties?

Oh well, it was certainly, it was great as far as I was concerned. [laughs] I remember – it's not really internet – but we had several offices at one point and we thought okay, we'll put in email. And this was in the late 1980s. And so we put in email between our three different offices, but we did it just for the managers to start with, and I remember coming in on the morning it was switched on, and using it, and within, well, I say five minutes, within 30 seconds, I knew we had to give it to everybody, because it just massively speeded up communications. Not only speeded up communications between the offices and the management team members, it deepened communications as well and made them less disruptive. You could send somebody an email saying, you know, please do this and this, or I think this, what do you think, and they could pick it up when it suits them to answer rather than you having to stick your head round the door or phone them up and interrupt what they're currently doing. So I just instantly knew that we couldn't go back and we had to spread it to everybody throughout the company.

[0:53:58]

You went on from '97 and seemed to have a portfolio of board experiences from then on.

Yes.

By now you've been president of the CSSA, a public position, you're known by government, you're known by customers that you've serviced through Softwright, and you're known as a woman and by this time lots of industries and the government are looking for women on the boards, are they not?

Erm, I wouldn't say they were at that time, to be honest, no. They were looking for the best person to fill the job.

Right.

It didn't feature in any of my interviews that we're specifically looking for a woman and I think their focus was on appointing the best person they could, and that was my focus, on trying to be the best person to be appointed.

And it is an amazing list of government and private board sectors, private board memberships. John Lewis Partnership, who doesn't know that? JP Morgan. Who doesn't know that, really? 3i European Technology Investment Trust, who doesn't know that? Ministry of Justice, Pensions, Disability and Carers Service, Department of Work and Pensions 2003, 2010. The Department of Audit Committee. You chaired the PDCS. I mean, it's an amazing amount of work that you're doing. How – do you compartmentalise this? How do you manage to do that amount of work?

Well, a fulltime job is an amazing amount of work, and this was basically a fulltime job, but instead of being for one employer, for a variety of employers. And in fact if anything, perhaps a bit less than a fulltime job, because as CEO of a company you're on duty 24 hours a day, seven days a week, so this didn't add up to quite that, although if you're a non-executive director of a number of companies, if there's a crisis in any one or maybe several of them, you have to do the job. You can't say, well you've had your time this month, or sorry, I'm busy with another company, you

have to try and deal with all of them, so you have to leave a bit of slack, if you like. But I, the variety I deliberately set out to achieve, because when I decided to try for a portfolio career, I wasn't sure if I'd enjoy it and I pretty soon found out I would, but when I decided to try for that, I knew that if I didn't make a special effort, I'd get non-executive directorships with medium-sized software companies, they'd all be in that category, and I didn't want that. I specifically set out that I wanted large companies, small companies, quoted companies, private sector companies, public sector companies, I wanted all five categories. So I worked hard at talking to headhunters asking them to see me in a broader light, rather than just a medium-sized software company person.

And I presume every new board position that you have makes you learn new things, which is…

Absolutely.

…what you like.

Absolutely. That's why I wanted the variety, yes.

[0:57:17]
You were awarded the MBE for services to the IT sector in '91 while still at Softwright Systems.

Yes.

That presumably was also partly to do with your work at the Computing Software and Services Association?

Yes, absolutely. Yes, it was the Department for Trade and Industry who I think sponsored me for that and the CSSA, yeah.

And you got an OBE for your services to the public service, which we've seen from your government and public service. And also to voluntary sector.

Yes.

Tell me about your contribution to the voluntary sector.

Well, way back, when my son was very small, I got involved with the local Citizens'
Advice Bureau in the area where I live and I became chairman of that, I did two five-
year terms of chairman. Basically, I've been on the board of that local Citizens'
Advice Bureau for more than 35 years. So I think that was the prime thing that they
had in mind when they mentioned the public sector. But I've also been on the boards
of a small number of charities over the years.

[0:58:26]
What's the largest mistake you've made in your career?

That's very difficult to [laughs], to think of, a single one.   I've certainly made
mistakes. But…

Well, let me suggest. Would you have wished it to go slightly differently?

We had, I've had very difficult times, you've mentioned recessions. Another very
difficult time was after the World Trade Center attack, because I had three companies
– obviously it was a horrible time in general – but I had three companies who were
very specifically affected by that in my portfolio at the time, one of which specialised
in software, particularly for airline companies. Well, they weren't about to spend any
money they didn't absolutely have to. Another was, had specialised technology for
online advertising and at that time online advertising was the optional bit. And a third
one was into network consultancy installation support and they had a big order to
install networks on two floors of one of the World Trade towers. So, all of those
companies basically were either bought or wound up as a result. But I can't call that a
mistake because I was just there and I just, it was just unlucky. So it was a very
intensive year, I don't remember much about that year other than dealing with those
issues, to be honest. Well, the thing that actually first springs to my mind is that I
wish I'd spent more time with my son. I was working very hard and that limited the

amount of time. I mean, I remember early on, actually when I was working with Softwright, I would leave the office at five, which didn't necessarily look good at all, in order to get back to spend time with him, but I'd take work with me and once he'd gone to bed, because he was only two, three at the time, I'd do the work at home. So that wasn't necessarily an easy choice, but I felt it was important. But I wish I'd done more of that in later years and managed to, as you say, rebalance the time between home and work. Difficult choice to make for anybody in a career, male or female, and…

Would your advice be then to, more than occasionally, but quite often keep an eye on that balance and make sure it is properly balanced?

Absolutely, I mean there's the saying isn't there, the famous saying, nobody on their deathbed says, I wish I'd spent more time in the office. And it's true.

[1:01:10]
There is very much concern now about two areas that I'd like your opinion on and your contribution to the Archives. One is that although the internet is still very young, and certainly the services over which it runs, such as Google, such as Facebook, there's a huge amount of monopoly, for Google, for Facebook.

There is, that's the nature…

For Amazon.

That's the nature of the beast, I'm afraid, because what the internet has done is make possible these global services and once you've got critical mass in one of those, why would anybody use one of your competitors.

Is this good for us?

Well, it's great at the individual level. I mean, I'm a customer of Amazon, I use Google all the time, it's a great service they run. Whether it's good for society as a whole is a different question and rather a difficult one to answer.

[1:02:04]

Another one is that there has been a development of a number of large companies that were important to the UK industry that are no longer UK. Autonomy was sold to Hewlett-Packard and messed up by Hewlett-Packard. And ARM sold to Softlab [SoftBank]. These are multi-billion dollar companies no longer British. Does that alarm you in any way?

Well, again, it's part of the globalisation of businesses in general and technology in particular. It would be- what I think we need to do is to encourage and educate children to see IT as an exciting opportunity, to get people coming into the industry, to provide a business environment that encourages entrepreneurship and allows people to develop new ideas and make a success of them and then have a business environment that allows them to have that, thrive on a global stage. You can't say we're going to encourage businesses so long as they're only UK-based, that just doesn't work any more. And so we just have to accept that that's how the world works and compete and thrive within that framework.

[1:03:16]

There is another concern about the rise of AI and that it is going to be a job destroyer.

Well, computers have been going to be a job destroyer throughout my career, and indeed they have in the sense that we don't have the same jobs that we used to have, we have different jobs. And I'm not a politician, I think it is worrying if they destroy too many jobs and they don't replace them with enough, or enough interesting jobs, you know, if they get replaced only with very menial jobs. But, you don't deal with technology by trying to deny that it exists. You don't deal with technology by pretending that you can hold the tide back, because you can't. What you have to do is have policies in place that mean people are treated fairly, paid properly for the work that they do and companies have to strive to make that work as interesting as they possibly can and to give career progression opportunities.

What's your advice to young people entering the industry today?

I think it's a good idea to enter it, absolutely, and I think, you know, work hard and do a professional job and grab the opportunities you can, each opportunity you can as it comes along.

Which is exactly what Jane Tozer MBE OBE has done.

Well, it's what I've tried to do, yes.

[recording ends at 01:04:44]