Philip Hughes

Interviewed by

Alan Cane

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At the

AT HIS HOME

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It's Friday January the 22nd 2016. I am Alan Cane, and today I'm talking to Philip Hughes in Philip's studio at the bottom of his garden at his home in London, England.

Today Philip is a full-time artist, indeed a former Chairman of the Board of Trustees of the National Gallery in London, but 50 years ago he was a co-founder of the computing services company Logica, now owned by the Canadian group CGI. Logica's reputation as one of the most influential of the UK's pioneering computing services groups remains intact. So, good morning Philip.

Thank you.

[00:46]
I think we'll start by talking a little bit about your career as an artist. You're well-known for, whenever you create a CV, listing you're a co-founder of Logica in one line, and the rest is taken up with your artistic achievements. Is art so much more important to you than what you achieved with Logica?

No. No, it's, they're very equal in my mind, very equal in my mind. For me it's, it's just two careers, There was one and then there was another, the second one as an artist overlapped with the first, but it was two different things.

Which have you enjoyed more?

I can't even answer that. I mean, the computing side was riveting in its earlier days, it was an amazing period. But also being an artist is, is exciting. It has its ups and downs. People often ask me, 'Oh, well now you're doing what you really wanted to do.' But that's absolute nonsense, it's just, there was one thing I wanted to do and there was another thing I wanted to do.

[02:02]
Fine. Let's go back to the beginning. Where were you born and when were you born?

I was born in, close to here actually, I was born in Holloway, north London, 1936.

And your parents, what were they like, what did they do?

My father worked for an electrical cable company. He was a sales engineer, he was an engineer but primarily involved in sales. My mother was a nurse. They lived in north London, obviously I can't remember that, until my father went off to the war, and my mother then went back to nursing and moved around the country nursing, and I moved with her.

Was it a happy childhood?

[pause] Yes, though it was completely split from my father. I mean he was away for five, six years, I didn't see him at all. It was very strange to be brought up during a period where you have no contact with your father.

Mm. What effect do you think that had on your future life and career?

[pause] I don't think any. I think it had an effect on one's family life, and one never felt as close to one's father as to one's mother, just because of that critical break.

[03:21]
Mm. Yes. You were educated in London?

No. My mother moved around, and I went to a prep school, private school, in Malvern. Because she got a job as the matron at this school, it was a boarding school, and so I got a place in the school. Then after the war my father came back, they settled in Bedford. He was appointed as sales manager for Bedfordshire, and I went to a public school in Bedford.

What were your interests at that time, academically and outside academic things?

Oh, at what time? During school in general?

I would say after, after primary school.

After primary school. [pause] I had a very strange and passionate interest in horse racing, which was a, oh it wasn't dominant in my life but was almost obsessive in my life from the ages about ten to 20, which was very very strange. I mean I was interested in other things, but this was the thing that sort of, floods everything else.

I mean, was it the horses themselves, or, or the gambling?

It was the horses. Not the gambling really, because I wasn't in a position to place bets, but I used to go to horse racing. I would go off and stay in youth hostels near Epsom to go to the Epsom races, or new Newmarket to go to Newmarket races, just to see the horses and the excitement of racing.

Mm. Yes. I mean, your father was, basically an engineer?

He was basically an engineer, but he was not really practising as a detailed engineer. He sold electrical cables, anything from, you know, flex, you know, connects to your radio, to huge cables for, connected pylons. The company was called BICC. So he advised on the technical matters as well as the selling matters. He came from Liverpool, he was educated there. My mother was a Scot, and came from Glasgow.

Mm. And, academically, what were you good at at secondary school?

I was very very good at mathematics, and not much good at anything, it was as simple as that really. I mean I staggered along in other subjects. I suppose I was probably good at physics, because it was so close, but, mathematics dominated my, certainly my secondary school.

And your interest in horse racing continued into secondary school?

It continued until university, then, quite suddenly it completely faded away. I suppose other things came and replaced it. But certainly in my first year in Cambridge it continued, and I would go off to Newmarket from Cambridge.

[06:20]
So you went to Clare College, Cambridge.

Yes.

Mhm. And you did a BA Hons in Mechanical Sciences and Economics.

Yes. Yes.

What were your ambitions at this time? I mean this, it sounds as if you were looking for a career in business, in a technical area.

I had no idea what I was looking for. It was a mistake really, what I read at university. I should have read mathematics, because, I was passionate about it, I was good. I went to Cambridge on a major scholarship in mathematics, which was the highest of academic accolades, but apart from that, I have no great academic achievements.

So why didn't you read mathematics?

Because the teachers at my school said, 'Well mathematics is useless, useless. You want to do something useful like engineering,' which is, such extremely bad advice. So, I was searching around, didn't really like engineering, and didn't do a Part II as it was called in… They call it Mechanical Sciences at Cambridge.

But that was engineering, I assume.

Yes, sure, sure, absolutely, what other people call engineering. Then I did a Part II in Economics, which actually I liked more. I had a very very good tutor, a brilliant man, and I liked that more. So I was interested in the idea of economics and mathematic economics at that particular point, but didn't pursue it.

Right. OK. You did well in your degree?

Moderate, really moderate, the second.

[08:05]
So, at that point you had a degree in Economics and indeed in Engineering. What were your ambitions then, what were you looking for in terms of a career?

I hadn't the faintest idea. I really hadn't the faintest idea. You had careers people who advised. And I joined Shell, as so many people did from university at that period, they joined big companies, big companies had general graduate intakes, the Unilevers, the Shells of this world. They just recruited all these people, didn't really know what they wanted to do with them, but that's, that was the modus operandi at that point.

They were simply taking in people with, with high qualifications and who were recognised as very bright.

Yes, exactly. Exactly. Right.

Mm. But, you say they had no idea what to do with them.

No, that's a little unfair. I was trained, I was put through a two-year training by Shell which involved, partly on Shell's installations, like refineries and research laboratories, partly six months working in a factory in Manchester that made diesel engines, partly in France working with the sales force there. All this was training for being a technician attached to the sales force of Shell, not the production side or refining but the sales force of Shell.

So what kind of things did you do?

Well eventually when I got to work, which was in, properly, which was in, first in Singapore and then Malaysia, I worked side by side with the salesmen, and would advise clients on, you know, what oils they should use, what lubricants, what fuels. If they had problems they would say, 'Oh it's the fuel,' and I would say, 'No no no no,'

and try to prove that it wasn't. And things like that. It was a wee, boring job. [laughter]

But you were with Shell for, four years I think.

Well it was sort of, the minimum period really. Because two years I was being trained, and then you went on two-year assignments abroad, rather like the Civil Service at that stage. And then you had, you know, a three-month holiday, and off you went to another assignment. So I did one assignment, and then, resigned, knowing that that was not what I wanted to do, but not having the faintest idea what I did want to do.

[10:36]
Had you any contact with computers at that point?

None. None during my work, no.

Were computers at that time generally used, or…?

No.

Business was not using computers for…?

Well they were, just, but I didn't even know the word, and I sort of discovered this by accident. After the first four years with Shell, when I came back to England I then discovered about computers, and the moment I did, it was obvious that's what I wanted to do.

Right. So how did you discover computers?

I discovered… Now these things sound so ridiculous. I saw a book in a bookshop that was about computing and computers, I can't remember what it was, and I bought it, and read it. And, they were immediately fascinating. And I, at that point, decided that that's what I wanted to do.

[11:44]
Mm. And so, you joined C-E-I-R UK.

Yes. I, I had… That was also a complete accident. I was walking along a street which is where the offices were, Newman Street, it's still there – sorry, Newman Street is. The building is still there. And they had a great big panel up in the window saying what they did. And the thing that really caught my eyes was the idea of using computers on economic problems, and economic forecasting, because that was bringing together, it was going back to my studying economics, and sort of bringing my mathematical interest back into it, and that sounded exciting. But at the same time I applied to Cambridge University to do a one-year Diploma in computing; it was one of, I think only two places in the country that taught computing at all at university, the other being Manchester.

Oh course.

And I was awarded a place, plus a grant and everything else, to go and work under Maurice Wilkes there. And it was just a toss-up, and I decided to start work in C.E.I.R. rather than go to Cambridge.

So the temptation to work with Maurice Wilkes must have been quite strong.

Yes. No it was, it was extremely tempting, to do that. Also my partner of my time, Psiche, and who still is, was living in Cambridge. So there were multiple temptations to go back to Cambridge. But I was excited by the idea of working, and possibly, not too anxious to go back into the academic world. I don't know.

So where were you based with C.E.I.R.?

In London, in central London always.

Mm. And of course it became Scicon, Scientific Control Systems.

It became… Correct as you know, became Scientific Control Systems, and then, which was shortened to Scicon, yes.

[13:57]
You started as a programmer analyst.

Well, yes and no.

How did that come about?

Yes and no. They hired me as a salesman. Well, I had, in fact in my last year in Shell I was purely a salesman. I was away from technical work. Well it was completely ridiculous, I mean I knew nothing, literally nothing about computing. But they wanted people to go and knock on doors. I knew that's not what I wanted to do. I wanted to work technically, but that was the only way I could get into the company. Well, I said, look, it's ridiculous me trying to sell things when I don't know anything about it. I've got to go and work on a project, learn programming, and learn something. And all the other people around me at that time had computer experience. I mean people forget that, here we are, 1961, and there was still a considerable body of people who were programmers in the country, and I was not one of them. So I managed to get myself diverted to doing technical work, and, for various reasons I managed to stay on that and not be sent back as a salesman. So then I became a programmer analyst.

Which languages did you program in?

FORTRAN. Only in FORTRAN.

Only in FORTRAN.

Only in FORTRAN.

So a very scientific approach to problems.

Yes. Exactly. The application, we were working on the IBM 7090, which was the, effectively the biggest available computer in the world, in the IBM Data Centre in Newman Street. C.E.I.R. bought eight hours a day. They had a block of time on the machine, and their job was to use that and to resell it as it were. And so we were acting as both computer bureau and actually programming people's applications on the machine, so we just lived above the machine really.

And it was C.E.I.R.'s machine?

It was… No, it was an IBM machine. Sorry. It was IBM's Data Centre, but, one third of the time was bought in bulk by C.E.I.R. So, it was and it wasn't, it was like a shared machine.

Mm. So, so you were doing computer programming but on a bureau basis really.

Yes and no. There were people who were selling the computer time, bureau time. I was merely… Yes. I was using this machine to work on programs. And the biggest I did was, must have been for at least two years, huge, at that time huge mathematical models of the Iranian oilfields. You were dealing with the physics of the oil, gas, water in the oilfields, to try and maximise the output. Very topical now as these fields are now being brought back into use.

Oh, absolutely. Yes. Mm.

I still remember the names, you know, of these oilfields that I was modelling, you know. Mm.

Mm. And you enjoyed that work?

Loved the work. It was fabulous work. I worked under the most brilliant person I had ever, did ever work with, Martin Beale, who was, who was working for C.E.I.R. and who subsequently, rightly, became a legend in the field of operational research.

[17:45]

Mm. So the problems you were dealing with were these, these very large computational problems.

Yes.

Which would probably have been at the limit of the ability of these machines to cope.

They were absolutely the limit. To give you an example. The oilfield, we had to split the oilfield artificially into two to do the simulation, because we couldn't get the whole of the matter. Just like stitching together a picture on Photoshop, we had to stitch together different bits, because we couldn't handle the scale of the problem.

[18:17]
You had moved on, I think, from being simply a programmer analyst to actually managing the…

I suppose… Well, yes I suppose so, yes I did. I became a manager in the company. Perhaps I was more prepared to do it than others, so…

And did you enjoy management, or do you enjoy management?

[pause] Yes and no. I think I always enjoyed the technical work more, but it seemed… It wasn't that I disliked it, but, the technical work excited me more, then and possibly even throughout my career.

Mm. You stayed at C.E.I.R., or Scicon, for quite a long time, eight years I think.

Eight years, correct. And then, what happened was that, Scicon… The company which… The history of C.E.I.R is in itself very interesting. It was an American company but a very interesting history.

Indeed.

But it was bought by BP. BP were the largest, by far and away the largest clients of C.E.I.R., because, we used to run the huge linear programming optimisation programs running their refinery business. And BP bought the company. I mean really, it was peanuts to them, but they wanted pure access to the machine. And BP, it wasn't that they were unpleasant owners, but you know, it wasn't their business really. And, it was parad… I mean listen, I had left one huge oil company to find myself working for the other one, you know. I mean, I knew it was no longer the environment I wanted to be in.

[20:15]
Mm. So, this led to the founding of Logica. Tell me about that, tell me how that all happened.

Well, it led… Sort of faute de mieux really. I didn't want to found a company. I just wanted to leave and carry on doing the same sort of work. So I looked at other companies, applied to them, but no one would take me on. I, I don't think because I was incompetent, but really in a way I was too senior. I would have had to have come in more or less at the partner level to companies like CAP for example, so well-established then.

Yes.

I thought about the possibility of management consultant, so I talked to McKinsey's, but McKinsey's wouldn't… You had to be a generalist. I said, this is ridiculous, I am a computer expert. Anyway, for one reason or another it dawned on me the only thing to do was to start a company, which was what I did.

And you had an idea for what kind of company you wanted to start?

Yes. Doing more or less the same work. A company that was what then would have been called scientifically based rather than general data processing consultancy, which was what effectively most of the other software companies were. With no disrespect, but it was the scientific side, but above all what had gripped me in the last two years was the idea of computer communications, time-sharing, remote computing. And it

was in that general area of what was then called scientific computing, I wanted to start a company.

[22:08]
So how did you go about it?

Well, I, I talked to, initially, the very first thing, I talked to Len Taylor, who was, effectively my partner in Scicon, and said, 'Would you be interested?' You know, very diffidently. I mean I was notionally his boss, though effectively we were working together. And he immediately said, 'Yes.' So, that was the core on which we started. We set, or I set about trying to find money with very very great difficulty, and broadly speaking lack of success.

Who did you approach?

I… I approached in a rather desultory manner what might be called the venture capital market. But it hardly existed in the UK.

It hardly existed at that time, mm.

I approached, then, two companies in America. One was BBN, Bolt, Beranek & Newman, who were one of the pioneers of time-sharing computing, and the other was a company called Planning Research Corporation based in Los Angeles. And BBN turned me down, and… Oh and there was another one, Mathematica, a company that greatly appealed to me because of its mathematical modelling capability, in Princeton. They turned it down. And PRC accepted the idea of backing the company and taking a share in the company. And that's how it was founded really.

So, I mean how did you arrive at an idea of how much money you needed, and how were you going to start the whole thing up, and what did you need the funds for?

Well you needed it for two rather different things. The same money but rather different use. One was, you needed basic money to fund effectively your losses in your early period, your fitting-out of your offices, your paying staff before the jobs

came in, et cetera et cetera. So I worked on a business plan for that. Secondly, you needed working capital to fund effectively the work in progress. Now, the more you, the quicker you expand, the more you need working capital. You might need less of risk capital but more working capital. What I found, talking to people in Britain, is that they didn't distinguish the two, and so they said, 'Well there might be a certain amount of money.' I said, 'Well look, supposing the business grows three times as big, we'll need £300,000 rather than £100,000.' 'Oh no no no no no no,' et cetera. I said, 'Well that's completely secured against payment from clients like the Government.' 'Oh, no no no.' But the Americans completely understood that. So they made effectively an infinite amount of working capital available, which enabled us when we started to really not worry about that.

Mm. Do you remember roughly what kind of sum you started with?

[pause] I would say… Yes, I would say we got agreements from PRC for, I think a first tranche of £50,000, going up to £100,000. That's money that could be, quotes, 'lost' as it were. And then, as I told you, effectively unlimited amount of working capital. In the event, I think, we only needed about, I don't know, £20,000 of the first thing, we didn't really need it. We expanded much faster, and we were in profit very soon. So, we didn't actually… We had the cover but we didn't actually need anything like what we had.

[26:33]
And what were you offering? I mean what was the, the new Logica company offering its clients?

I think we offered two things that were different from our competitors. The first was, the idea of what we called, and others, but I think perhaps we pioneered the term, 'turnkey systems'. By that we meant delivering a complete solution to a problem, providing the hardware as well as the software. So delivering the complete job. Perhaps I should divert to say that the company was really aiming to use the newly available, what were then called minicomputers, computers particularly from Digital Equipment, DEC, which were very different from the mainframe. I mean part of your project, you will deal with this extensively. But you know, we were aiming to bring

that expertise to work. The other thing we were aiming to do is to bring, harking back to my interest in mathematical modelling in a way, a capability, an operational research, mathematical modelling, forecasting, technological forecasting, into a software company. So we had those two rather different strands from what you might call was the classic software company at that stage.

Mm. Had you already had these ideas while you were working at Scicon?

Oh yes. Oh yes, yes I had the ideas and had the experience, certainly.

Mm. Had Scicon been using minicomputers at that time?

Yes, yes we had, not a great deal, because, as I told you, their history was very much tied to the use of the large IBM machine. But on the latter side, the economic modelling, yes very much so. The company's original chairman, this is C.E.I.R., was Maurice Kendall, who was the pre-eminent statistician in the country, Professor Kendall, and the other co-manager was Professor Sandy Douglas, who was a great expert in crystallography and, really cutting-edge scientific computing and modelling, physical modelling of, of molecules. And so that was the environment in which I grew up in C.E.I.R., and so, those were the problems we worked on.

[29:20]
Mm. OK. I think you told me the first meetings were here in this house, is that right?

Yes, the first office was set up in the bedroom and the basement. [laughs] We were joined… Len and I left; we were joined quickly after by three others from Scicon, that's John McNeil, Pat Coen, and Steve Feldman. So effectively, that group of five was known as the founders. And, Len and I were joined each by our secretaries. I asked the management at Scicon, can I approach our secretaries, and they said yes. And so, the two secretaries. So the company was two people, two secretaries, to start with, both wonderful women who greatly contributed to the company. And we camped in the house here till we got our first office.

Was it an amicable parting from Scicon?

Yes, it, it… Yes it was. It was. I, I… Now, why do I hesitate? I don't hesitate, no. They were, they were fine about it.

OK.

Mm. Mm.

[30:40]
The name Logica, how did that come about?

Do you know, I wish I knew. I've been asked so many times.

Mm, I'm sure.

I certainly had the idea… We absolutely didn't want to be a string of three initials, which most computer companies were, like CAP or, CMG or, et cetera et cetera.

Mm. Mm.

Well, no disrespect to them, but we thought, we wanted to be different. We wanted a single word. We wanted a word that would translate into different languages. And so you look back at classical sources. I mean now every Japanese, Taiwanese car you see has got a single name like that, ending in an a, you know; I like to think we were the very first in the world. No, we weren't. Mathematica.

Mathematica, yes.

Mathematica. So I think I was copying Mathematica as an idea. And then we searched around, and I honestly don't know who came up with the idea of Logica. It may have been me but I certainly don't claim it. But it emerged, and when it did, it seemed the right idea. It was a good name, a very good name.

[31:56]

It proved to be a very good name indeed. So, you know, as a newly-formed company with these interesting new ideas about how to do business, I mean how did you go out and get business?

[pause] I was thinking about this last night. The very first job we got came through my secretary, God bless her. It was a job doing, effectively, the, manage accounts, planning for a large architectural company. The company still exists, BDP.

Oh yes.

It was ironic, because, that was absolutely not at all a job that we were aiming to get, nor did we have the capability to do it. I mean, Len or I couldn't have actually programmed a job like that.

Mm.

So we quickly had to rush out and find people who could. [laughs] Literally, literally. Anyway, that was… The first jobs are enormously important to a company. And then, very soon after we got, what I suppose was the making of the company, which was ironically equally not a job we had a capability to do. It was to do the design of the national vehicle and driving licence system being set up in Swansea. Now we got this job through someone who had joined us very early on called Charles Reid[sp?], who was quite the most brilliant consultant I ever met. An amazingly, amazingly brilliant person, who so, so impressed us. Now his job was very much on the business consulting side, which was not my expertise. Well he charmed, quite rightly, the Ministry of Transport or whatever it was called then, and on the basis of that we got a job to provide, I think it was fourteen analysts to start work in Swansea in a month's time. Well we hadn't got one of them on the books. But we managed in a month's time to recruit them. And that provided the base large job which paid the rations which allowed us to do everything else.

Mm.

Strange, the first two jobs were not actually in the domain.

But I see that, '71 you got the contract for the control system for the National Grid.

Yes.

And in '73 the SWIFT network for the banks.

Yes.

I mean these were very big jobs.

These are very big jobs. No… Yah, we…

How did a company with, you know, just a couple of years' experience get these big jobs?

Oh, I think, quite simply because we had a staggeringly talented group of people. I mean looking back, the company's success was surely due to that. We managed to attract really, really brilliant people, at all levels. And so we were extremely impressive, we were a very, very capable company. I'm not speaking personally, but the people who were really doing the work. And they impressed the clients accordingly, and we quickly got invited to bid for these jobs. We, remember, we had specialised on communications and computing, together, which, very few people had that expertise, if anyone had that expertise at that level. Now, once you get clients who are interested in using these so-called minicomputers, which were very powerful in that field, then you naturally turn to people who know how to use them, and that was really what we did. So we could bid for these huge network jobs, often in competition with computer manufacturers, and we, we won them. We were very successful at winning those sort of contracts.

[36:34]
So minicomputers were, I mean obviously much cheaper than mainframes. I mean, would that lower cost have played a part in your success?

Well, not really. Yes and no. They were, they could do things that mainframes couldn't do. It wasn't just a question of cost. I mean if you had a large, you know, IBM system machine, it was not as good. It couldn't do it. Well, I'm sorry, it couldn't do it, you could have programmed it to do it, but it was completely unsuited in its way of working to do it. So not only were they cheaper in that application, they could really do it, whereas the others couldn't. So they were, they were necessary to do this kind of work. I mean there were… I mean the Elliotts for example had machines that were of a similar ilk, and that came out of a scientific environment, Elliotts made very much that type of machine.

Yes.

There was a big divide at that stage between the general data processing machine and the communication, online, real-time machine. This divide no longer exists of course, but there was then.

[37:47]
Mm. So you've paid tribute to the quality of your people at that time.

Mm.

I mean was there a big pool of available programmers who could be recruited?

No. No, but, they were people who were, were attracted to us, or, we started very, very early on recruiting graduates. I met someone the other day who, who was a professor of computing, who said, 'Logica were a big force in recruiting of our graduates,' and I hadn't quite realised that we became important to the universities, but we recruited graduates right from year one, who may not have computing experience even, I mean, there were no computer courses out there, or hardly any. That's not true, there were some, there were some, but we were recruiting graduates in other scientific capabilities and backgrounds. And we said, well we can teach them how to compute, as long as they're really bright people. And that provided a base workforce as well as the more senior people.

So how did you set up in-company education to provide the programmers you needed?

[laughs] Well I'm ashamed to say, I don't think we did. There were no internal courses or anything like that. They were just thrown in at the deep end. It was more an apprenticeship scheme, you might say. Because we had the projects, so they could be slipped in to doing the more junior things, and could learn on the job, which is precisely the way I learnt to program. I wasn't a good programmer, but that's the way I learnt.

Mm, but I mean somebody has to cut the code.

Yes, you're quite right.

So, I mean, how many languages would you have been using at this time? I mean, a bit more than FORTRAN I suspect.

No,. a bit more than FORTRANI. Correct. Well someone had to cut the code. [laughter] They did anyway, they did. SWIFT was… I mean there were one or two contacts that really make you big time, and SWIFT made us big time. I mean it was… It exists still. If you go and make an international payment, it goes through SWIFT.

[40:10]
Absolutely. Indeed it does. How did you decide who was going to… I mean all your five founders, how did you decide who was going to do what?

Well it sort of fell naturally. Len was supreme as a manager, and, I couldn't pay him compliments enough to… Logica couldn't have developed without him. So he effectively managed, he was the managing director of the company, he managed it. Pat Coen was brilliant at operational research, and he led very much that area. And that helped us pick up other jobs incidentally, more general computer jobs. We were very early on appointed as *the* consultants for the Bank of England, which was an extraordinary accolade. It really came because they were attracted to Pat's ability to

do economic model forecasting for example, and that then led to general computing work for that.

Yes, certainly Pat Coen had a huge reputation, yes, indeed.

Right. John McNeil's skill was very much in presentation, i.e., the idea of design permeating the company, which it did, which was so important to us. We published reports right from year one, annual reports, we always were interested in. The very first person we ever hired outside was the person, through John McNeil, to design the logo. So, the style, the visual style, which was an important part of Logica, was very much John's thing. And Charles Reid[sp?], as I told you, was the supreme, top level business consultant who did that. Steve left us relatively soon. That was the sort of role of the top people. Actually one other thing is that we decided right from the very first day that we would be able, we should have the capability to design and deliver hardware as well as software. Now that was unique, no other software company did that. And the first senior person we hired completely outside the domain of people who I knew was Trevor Armstrong, a senior hardware designer. And that also had a big influence on us doing turnkey systems and literally changing the hardware as well as the software to do the job.

[42:43]
How did that work? I mean you would have somebody designing hardware. Surely…

Well we did it in the office. We had a little area of the office where we were literally building hardware.

You say building.

Yah.

Do you literally mean building?

I do literally mean building circuit boards. [laughs] I do mean building. Of course you're not actually making computers as such, which we subsequently did, but

actually, yes. So we were doing a job like, I don't know, traffic signal control for example. We would do the controller part of it as, attach that, bolt that onto the computers.

[43:20]
I see. You were saying that John McNeil played a big part in the image of the company.

Mm.

I mean surely, you will recognise this, really taking that role of projecting Logica as a, a very stylish company.

Yes, I suppose so. I mean I suppose my main contribution to the company was, was selling I suppose, was presenting the company.

Presenting.

Presenting the company. I mean, rather than doing the detailed bids, presenting the company, trying to get across the ideas which I have hopefully just been explaining to you, as to how we were different, and what we could bring in this new environment of communications, computing, being combined. Yah, I hope so. And, I was obviously interested in the visual style of the company as well as I became an artist, or, obviously… [laughs] I mean little things. For example, we worked entirely in an open-plan office. I mean, I sat in the open-plan, everyone sat in the same open-plan. Well, OK, it's done now, but you try and find an open-plan office then, in 1969, you couldn't find one. No one did that. And so… But people came into the office, potential clients, to meet us. They sat down at the table. The staff were all working around. And it created a completely different feel, a feel of a, like a set of people having fun working together. And that I think really attracted clients. They felt it was different. And indeed it was.

[45:05]

Mm. So how did you create this corporate culture? Were salaries particularly attractive, or working conditions very good?

Oh well, I think… [pause] Well, we, the equity in the company was widely spread. We very strongly believed in staff equity, right from day nought as it were when people joined. And people would be allocated equity, not everyone but a large number of people, allocated equity right from the start. So that was one thing that we believed in strongly. I think secondly, perhaps a feeling that we were all, all in it together, we were all mucking in together. I mean, a serious part of the company business took place in a pub across the road, you know, after work. It was, it had that feel and style. I mean Len, who I've mentioned before, was, was wonderful at that touch of really inspiring and getting to know people. I was pointing outwards more; Len was dealing very much with this, and creating that feeling in the company.

[46:26]
Mm. You grew very quickly.

It grew very quickly.

I mean, Logica moved very quickly throughout its existence.

We grew very quickly. We grew, I remember our original business plan and we certainly grew three times as fast as the most optimistic business plan that we had, yah, we did.

So how did you manage that kind of growth?

Well, remember, I told you that we had, from our original backers, we had access to working capital. So that was never a problem. We didn't have to worry if, you know, the Ministry was paying the bill a month late, you know, we could deal with that. So we could handle that aspect of the growth. Staff side, I told you, we recruited graduates very early on, and it was a major part of our activity. And also I think, at a middle level, we had people in the company who could manage as well as, well technically, they could manage projects, they could manage people. So it wasn't just

a small set of people who had to manage the company; management was being done at all levels in the company. Well if you've got that capability, which we managed to get through attracting such people, then, you can manage growth. I think, you can't manage growth if you've got technicians here and just a few managers. You've got to be managing right down the company.

Mm. Did you pay particularly good salaries compared to other companies?

Well I hope so, but I think the equity side was perhaps more the attraction. We weren't… We were paying a good market rate, but we were not, it wasn't fantastic. I think people were attracted to it because they thought it was a good place to work, and they would learn, which they did.

A company with a lot of very bright people can be very hard to manage [laughs], because they all have their own ideas.

Well it wasn't. It wasn't. Well perhaps it was, perhaps it was. Look, you know, I can think of many examples where management didn't work too well. I mean we obviously had certain problems in management, but…

Could you describe one of those for me, without naming names perhaps?

Oh. No, I don't think I could. I think I'd rather not, because I couldn't describe it without it being too personal as it were.

[49:02]
Too personal. OK. Well let's go on to… I think from the very beginning Logica operated overseas as well as in the UK.

Yes.

Now, how did that… I mean obviously you had had experience of working abroad.

Mm.

I don't know if other members of your, other co-founders had similar experience. How did that come about, how were you so keen to, to form alliances, to, to operate abroad?

Well, we were certainly keen, we were ridiculously ambitious, you might say over-ambitious, and right from the start feeling that we wanted to be international. I mean looking back on it, it's sort of, cheeky really. But nevertheless, we, it wasn't something that we wanted to do afterwards; we wanted to do it from day one. I seem to remember, our first report… We used to publish annual reports, I mentioned before, we used to publish, even though we weren't a public company, nevertheless, we published annual reports. That was also, no one did that.

Unusual. Mm. Yes.

And the very first one was published, believe it or not, in three languages, English, Dutch and French. Holland was the first place where we set up another company. [pause] We were approached by someone who was working in Holland, Alan Macrow[sp?], to do this, who we had known in the past, and we set up a company in Holland for, was a very, certainly initially it was a very successful company. The other key thing which happened very early on was, we formed a partnership with SESA, s-e-s-a, SESA, in, based in Paris. It wasn't a financial, there were no shares involved; it was just a partnership, an agreement – it wasn't even agreement, it was more of a shaking hands – that we would bid together on international projects, of a certain kind, anything involve, anything involving a European agency, anything in Brussels, European Space Agency, CERN: any multinational body, one would always team together. And we always did. SESA was, was, an interesting background here. There was somebody attached to the French Embassy in London who had this idea. I can't remember his name alas, but he had this idea, of putting together French and British software companies. It wasn't just us, but I think, ours was the only partnership that worked. So he was a marriage broker between us and SESA. He introduced us. And, from the moment go it was obvious that they were the natural partner, because they were precisely doing the work that we did but doing it in France. And so we teamed with them, with phenomenal success. Jacques told me quite

recently, he became a very good friend, that he thought we had 100 per cent record of success in bids that we did. Well I'm sure he exaggerates, but nevertheless, we were very very successful.

In particular the European Informatics Network.

The European Informatics Network, yes. We… Which was a multinational network, packet switching network, which was using a technology originally invented by, well that's another long and important story, by Donald Davies and his group at NPL, implemented by Larry Roberts in the States, and then EIN was the first big multinational European network.

Yes, so essentially the ARPANET architecture.

Essentially ARPANET architecture, yes.

Which of course became the Internet and the World Wide Web.

Yes, indeed. Indeed. Indeed, indeed. And I mean looking back, perhaps the most important thing that Logica ever did historically was to work on *the* very very first systems of packet switching. We put in the first transatlantic package switch system, which was actually a hotel reservation system, but we did it that way.

[54:01]
You had planned for overseas expansion right from the very beginning.

Mm.

And in particular you started out in the US, which was a pretty unusual thing for any British computing services company.

Yes. Yes.

What was your thinking there?

Thinking was simple. It didn't work by the way. I mean we had numerous attempts to… Well no, that's unfair. We did some major projects in the US, very successful projects, but, we never really established properly the US. It was always, it was always difficult. It was the market. I mean the great, great advantage that America has in this business to this very day is its home market.

Mm.

Which makes it much easier to build up a base, to operate abroad. Well, why not do the reverse and try and operate in that market? That was the thinking. Point one. Point two, it was operating close to the sort of computer manufacturers that we were working with, such as DEC that I mentioned before; such as, most importantly, Tandem, who are long disappeared, but introduced a form of highly reliable computing where they had sort of, two processors in the one main machine. And we were pre-eminent users of Tandem around the world, and putting these into high security networks, just being close to that.

And that was because the Tandem machines had a reputation for never stopping completely.

Yah. No, no no no, it was a wonderful, wonderful set of people. We also, we started in Australia as well, and Logica, to the end, a very successful operation in Australia. That was partly because my parents were in Australia. [laughs]

Ah. Indeed. As good a reason as any.

As good a reason as any.

[56:16]
Eventually you had to pull out of the US. Why was that? Was it the competition, was it, was the company losing money? What was going wrong?

Well there were various ways[?] of being in the States, partly in New York, partly in California. For example we did, on the back of our work for, on the metro in – sorry, the Underground, in London, we did the control system for the, for BART, the underground system in San Francisco. We worked… Well there was a variety of important projects we did in the States. I suppose it was just a failure of management. We really didn't, one way or another, successfully manage in the States and manage the States operations. Why not? I don't really know. I don't know. It's, it's… It is a very different environment. I think the environment in classical European context of very ongoing, long-term trust relationship with clients, is not the environment of the States. There's always a new guy on the street coming in with a new thing, a new price. You don't have that ability where reputation can build you long-term. It's extremely sales-orientated, and I suppose we just weren't as good at operating in that environment.

[58:00]
Indeed. Let's talk a little bit about telecommunications and applications in general

Mm.

You let me have sight of a C.E.I.R. report on the market for communications.

Mm.

Made some very, I suppose modest predictions.

Did it? I… Yes, I haven't looked back at it again. Yes.

Well the speeds are in the, you know, tens of kilobits rather than… [laughs]

The speeds. The speeds are what everyone got wrong. Yes.

Mm. Mm.

Yes, well the first… When I, I told you earlier on about the first two jobs we got. The third job we got was a market research job, completely different, a forecasting job for Racal, who were the suppliers of high-speed modems at that stage. Now what was high speed? It was basically 2400 bits per second. It possibly work up to 4800. And we did this forecast study for them. So you had, the first two jobs were like, data processing, classical data processing, and then you had this sort of market forecasting job. And I suppose if we look back at that, that was desperately wrong as well. I mean the idea of just counting up the number of places, so you would have 2400 bit per second modems, was ridiculous in retrospect.

[59:24]
How did you go about approaching a job? I mean, the sort of market analyses are quite different from building computer systems. How did you go about it? Did you recruit people?

Well… Yes, well we had, as I told you, we had a division, one of the four divisions possibly in the company, that was devoted to forecasting, modelling, operational research. So we had those skills in the company. Someone called John Polhill for example was extremely skilled in that area. I suppose I had experience myself. I mean that Scicon study, you were saying, that was one of the last big jobs that came under my overall management at Scicon, so I had personal… I wasn't stealing stuff from the study, but I had personal experience of trying to do a massive study for GPO as it then was, on this, in this subject area.

[1:00:32]
Mm. Just remind us of the four divisions within Logica.

[sighs] I shouldn't have mentioned that. Yes. Well, there was one on, what you would say, data processing; there was the operational research, market study work; there was the implementing of base, the core of the company you might say, of these communication network systems; and then there was a separate hardware division who were dealing with hardware that was broadly servicing our overall projects but sometimes doing a pure hardware job. That was the span of, I don't know whether it was four divisions, but that was the span of the range in the company.

[1:01:20]
Indeed, mm. What was it about communications which particularly interested you?

I got gripped by the idea of what was then called time-sharing, which was, the remote, the sharing of a computer resource remotely, which was possible for two reasons. One is the growth in capability, albeit primitive in retrospect of the communication facilities, and the other was the development of the sophistication in software where you could multitask and the like. I got really interested in this subject. I strongly tried to persuade Scicon to go into that as a bureau business, but failed. And in a sense that was perhaps the trigger that led me to leave. I felt they really should have gone into it.

Mm.

I got very inspired by the original ideas of packet switching, which were presented by Donald Davies's team in 1968. And it just seemed to me an exciting new area. I don't know. That was it really, and I got inspired by it.

Did you foresee the way that datacoms have developed over the past ten, 20 years, or, have you been surprised by the speed and diversity?

Well obviously I didn't. No one, no one foresaw the sheer spread of it. It doesn't completely surprise me, bearing in mind that we were working at the frontier. We had contacts, intimate contact with the people in the States who were doing it. We had, I mean for example, I had contact with Xerox PARC, who were the most interesting research unit in the world working on, you know, applying new[?] technology to computing. But, I suppose what certainly I hadn't realised in retrospect was the, the way that you could get such high speeds through the classical telephone network, which you could get because of the, you know, the dramatic increase in power of processing and chips and the like, which is very well documented. That has led to the ability to squeeze this amount of speed out of a classical network. Leaving aside fibre optic. No, I hadn't foreseen it.
[1:04:38]

What is, I find, ironic, this idea of time-sharing, which was quite quickly obsoleted by the development of the personal computer. Why try and share a bit of a big machine somewhere else when you've got all this on your thing, has now come back. They call it cloud computing. But it has now, the wheel has completely turned, and it has come back again, which is remarkable in a way.

[1:05:15]
OK. While the company was progressing and growing, you maintained your interest in art, you carried on painting How did you manage to combine the two?

With difficulty. I took a year away from the company, I think it was '76, '75–'76. Or '76–'77, a complete year. Then, Len Taylor operated the company entirely during that period, for which, I am eternally grateful to him for doing that. It allowed me to basically test whether or not I thought I was, to myself, good enough to be a professional artist. And I thought at the end of it, perhaps, not arrogantly, I am, I, I was. I had an important show when I came back at Angela Flowers' gallery. From that… I never took that time away again, but I used to work at the weekends and holidays. And then in the latter period, I suppose the last few years at Logica, I was… I left 1992 I think full-time, so I had become a full-time artist since then. The last four, five, six years, or more actually, actually going back, more, way back, I'm going back, much further than that, I agreed with my colleagues to work a four-day week. And then it was a three-day week. So there was a gradual transform, like a…

[1:07:05]
Did the government of the day, whether Conservative or Labour, help much in the growth of Logica?

[pause] Yes, I suppose. We profited from government contracts. I've mentioned already the vehicle, driver's licence system. Even to this day, if I, when I look at my driver's licence, the actual way it's coded, one's birthday is coded, is something, you know, something that Logica invented one day, literally. So, that was an enormous help. We worked on the police national computer system, which was… Big jobs like that certainly helped. I mean they were straight commercial jobs, they weren't… But, it helped to have that sort of client. In a more general sense, it varied. The Alvey

program, which you're probably covering in other interviews, that was clearly of help. The setting up of the NEB, the National Enterprise Board, and through that its funding of key developments, in particular word processing as far as Logica were concerned, that job. Yes, I would say, in general, the Government was helpful. I spent a lot of time, a lot of my time was spent dealing with the Government, not individual clients so much, but the Government, the Ministry of Technology and the like, trying to encourage them to be involved and taking this industry seriously.

Mm.

And I think, I and others were, relatively successful, relatively successful.

Mm. I mean with hindsight, was the NEB a good thing?

Well that's a general question, because the NEB was involved in other industries.

Of course.

Was it good for the computer industry?

For the computer industry.

Well for Logica it was extremely mixed. It encouraged us – more than encouraged us, it, it said, look, if you do this, we'll do that – to go into the mass-production, hardware and software, of word processing machines, which proved a success at one level, but a disaster at another level. So, we were perhaps led down paths that we otherwise might not have done. But on the other hand, it enabled us to buy out our original backers, Planning Research Corporation, and to launch the company on the stock market, which for a long time was very successful. It's mixed. I mean it was involved in Inmos wasn't it?

It was.

Correct?

Mhm.

Well, that also, the history of Inmos is very interesting. I mean did that help to, Britain's greatest ever success and computing ARM? I mean, some of those seeds, may not have led directly, I don't know the history, but surely led indirectly to having that type of technological capability in Britain that was otherwise all in California.

[1:10:38]
Mm. But you say there was, with[?] the involvement in VTS, was[?] a disaster. What was that about?

Well, it was… eventually. How did we get into this field? We programmed a system for Unilever that they called a shared typing pool whereby you had a, one of these minicomputers at the centre, and eight screens, and that was, to my knowledge, well it may not be the first in the world but it was one of the first…

I think it was certainly one of the first, yes.

It was certainly one of the first two or three word processing systems in the world, OK? From that, Unilever said, 'Well would you like to take this and try and sell it to other people?' We said, well why not? And we sold it quite successfully to a number of people. That led to us then developing a stand alone system. Once the Intel chips developed to a level where you could have that power in a single-screen processor rather than sharing it, that led to the establishment of a combined hardware-software word processor. NEB then came in, and said, 'Look, we have this idea of trying to establish an office automation group of companies in Britain. Will you do the word processing side of it?' We did so. They put the money in; we started, we developed a new generation, the VTS. It supplied ICL, it was the leading word processor in the country, it was probably at its time, I would think at the time it was the best in the world. But the old problem surfaced, as it does over and over again for the British industry, the marketing. You need, you know, an international market for it. We had the UK market, in a sense we supplied the totality of processors to ICL that they then badged and sold on.

Yes.

It was technically very successful. Then what happened? People say, 'Oh well, of course you're a software company, you didn't know how to do the hardware.' That's nonsense. As I told you, we did hardware from week three onwards, you know. We perfectly knew. We perfectly learnt how to run a factory. But, the market fundamentally changed. What happened was that, the PC developed to a point that if you took a software package, such as what is now called Word, put it on a personal computer, that [inaud] word processing didn't have to provide by a specially tailored machine to do it[?].

Mm.

And that effectively destroyed the market. So we were destroyed along with anyone else who was doing that.

Mm. OK.

Now in retrospect… Sorry, adding, postscript. In retrospect of course we were illogic[?]. We did have this extreme capability in word processing software, and in retrospect we should have said, that's absolutely what we should do, we should seize that, develop the world's best package in this, and sell that. But by that time, if you like, we had a factory at Swindon round our neck. [laughs] So we couldn't do that.

[1:14:20]
OK. Let's go on to the flotation.

Mhm.

Why?

[pause] Well I wasn't very, I wasn't keen to do it. I think many people who start companies are dead keen to do it to make money, but, I wasn't keen to do it. I'm

happy to make some money, but I wasn't keen to do it. It's, it became inevitable in the sense that, the original backers were bought out; the people who came in were the NEB, but a series of institutional investors then came in. Now they come in because eventually they want to make money. They only make the money eventually if there's a market in the shares. It wasn't that they pressured this, but there's a general expectation, once you get to a stage of multiple institutional investors coming into a company, it naturally leads that way. It wasn't that we needed the capital. I don't think it was that the staff shareholders were desperately anxious to cash in their shares. We had a perfectly satisfactory system, if people left, we bought their shares at a good market value, and people did leave and were paid for their shares. But, that's the way it naturally happened as it were.

In retrospect was it a good move, or not?

[pause] Yes, I think it was. No, no clearly it was, I would say. It had, it had a very rocky period, because we ran into severe losses because of the, the having to close down the word processing operation. Now, if you're a public company, and you are in that situation, you are pilloried to death almost by the banks and the institutional shareholders. So, it was an extremely unpleasant and very damaging period. I, God, I spent 80 per cent of my time just dealing with bankers. [pause] But, having gone through that, it enabled Logica, it… Well, it enabled the staff to get, shareholders to get a very good price. And there are many, many people scattered around the round who, you know, made enough money out of Logica to, I don't know, go and live in France and, et cetera et cetera, you know, to do something that they wouldn't otherwise have done, which was, good. It also enabled Logica subsequently to move to another level of expansion where it acquired other companies, particularly around Europe, and by the time Logica was eventually sold, it had 40,000 people working around the world. Well it wouldn't have done that if it wasn't a public company.

[1:17:40]
No indeed. Indeed. You left Logica in '91, 1991.

Yes. Mm.

At that time there was a feeling that the company had become a little too academic in its approach, perhaps to the detriment of its profitability and its shareholders. Would you agree with that?

[pause] No. I think it was not as profitable as it should have been. Len left much, left earlier than I. I'm not blaming successor management. I mean it was, yeah, it was… Yah, it was a different market, things had changed. Possibly the model that Logica had had was no longer the right model. I wouldn't say it had become too academic. I would say being academic was, in that sense, remained its great strength. It had a research group in Cambridge who were amazing, world-class in voice recognition; they developed one of the world's first relational database systems, etc. I think the failure was to take that still ongoing, high technology, almost discovery in the company, and convert it into satisfactory products to be sold in the marketplace. Logica, throughout that period, failed really to create, despite the fact it had the technology at its fingertips… We had the precursor of what's now become Photoshop. When I look back and think, and look around me, and think, my God, you know, we were there almost first, [laughs] and yet failed at every stage, knowing that we, that we ought to do it, and trying, but failing because we weren't good at doing that. We were very good at developing. It's not being academic as such, it's not being, I think, sufficiently product-oriented, product, successful in developing products.

[1:20:09]
OK. In one interview with you I read you claim to be burned out in computers around 1990.

Me personally?

You personally. [laughs]

Oh God. All right, well perhaps I was. Yes, probably was.

Were you?

[pause] I don't know. I might… I might have been. I, probably I was. I didn't want to carry on, certainly. So yes, I, I suppose I was. But… Yup, I suppose I was.

Do you still follow the industry?

I, I follow with interest developments in the technology, for example I mentioned cloud computing. It intrigues me that the old ideas have come back. I follow the idea in a way the development of the Net. So I follow, in other words, to some degree, some of the technological things, but I don't follow the industry, no.

[1:21:10]
OK. Fine. What would you think, or what do you think was your greatest achievement at Logica, or indeed in your career, in computing?

[pause] Aye aye aye aye aye. Are you asking for one specific thing, or a general…?

Perhaps more general. It may be difficult, picking on one thing.

I think we genuinely did create a company that was a real high technology company in this area, working on a wide range of applications and in a wide range of environments. And, I think that was an extraordinarily successful operation, and perhaps inspired others to do it, perhaps inspired the industry to take the underlying technology seriously and to try and push it. I think it may have helped in that way. I think in terms of applications, I think we really showed how high reliability networks could be built very early on, even when the telecoms were not particularly reliable. We built them, we installed them, they worked, their successors work to this very day, I think, and we did make a major contribution. I think one other area that we made a major contribution in that we haven't mentioned at all is in space and satellite control. I mean, we were, together with SESA, the pre-eminent suppliers of systems to the European Space Agency, and I believe even now, still are, one of them at least. And so I think we had a significant impact on the space programme, European space programme.

[1:23:30]

And, what do you think might have been your biggest mistake?

[pause] Well the biggest failure, I have indicated before, was the ability to develop successful products coming out of this melange of high technological discoveries, applications. That was a general failure. I think there was a general failure in getting established in the States. But in the retrospect, I don't, perhaps, perhaps we shouldn't have tried really even. [pause] The thing that impacted the most and the worst was the word processing venture, which drained the company of management resource and money at a time where, I mean we were desperately trying to sell it, to just, well, to get rid of it. I can remember endless discussions with Olivetti for example. And, that had a big impact I think and wore us out, both financially and managerially, at a time, it took so much time and energy. The product, I repeat, was extremely successful, but that's really not very relevant historically.

[1:25:05]
Indeed. What advice would you have for somebody setting out, perhaps in the same position as you were in at Shell?

God knows. I mean look, the market, the situation is so different. First of all there's an extremely developed venture capital market in this country, which we didn't have, so there was nowhere that we could go like that. But, I would recommend… Yah, I would have some suggestions. One is, come what may, guard your equity. That's what you have at that stage. Don't sell yourself out in advance as it were. Even if it's, you have to pinch and scrape and the like, you know, regard your equity. Point one. Point two, spread it widely amongst your staff. Point three, do something new. Don't try and do what other people are doing. Have new ideas and a new approach. And point four, do it with a style and panache, make yourself look different as well as being different. I think that is really, those would be my recommendations. [laughs] Sounds simple doesn't it.

Indeed.

Oh I think, five. I think it's correct to be ambitious internationally right from the start. Yup.

[1:26:46]
OK. OK. Well we've covered a pretty broad range of subjects. I wonder, are there points you would like to make that perhaps we haven't covered in the discussion so far?

I would just like to summarise if you like.

Mm.

Firstly, I was inspired by Martin Beale. I mean, Martin was the most remarkable applied mathematician. He sort of taught me more or less anything I really knew about programming, computing, modelling. He is now recognised, there's a Martin Beale memorial medal in the Operational Research Society. Secondly, when it came to this communications and computing, I was inspired by Donald Davies and Derek Barber and Roger Scantlebury, that team of three at NPL who effectively invented packet switching, without which the Net wouldn't work. I mean they were inspiring, to have those people. Two of them subsequently worked for Logica, not Donald but the other two did. [pause] I was inspired I think in managerial capability by Len. I was inspired by Pat Coen, by Charles Reid[sp?]. I mean those people I think really inspired me to work with them. I was inspired by Jacques Stern and the way he worked in France. [pause] I think those are the main influences, both managerially and technically, on me. I was inspired also, no I would like to mention, by Dick Evans, who established a company called Time Sharing Ltd, which was a total pioneer in this country, working with a system from BBN in the States. And that got me inspired by the idea of time-sharing, which then got me inspired by the idea of communications and computing, and I think in a chain reaction way led to various other things.

[1:29:00]
Mm. In general, how important has the computing services business been to the economic and social structure of the UK?

[pause] I don't know. I would have thought, the record is mixed. I would have thought that, given all the capability, given the English language and everything else, we probably should have had more international players of real stature. I think if you look around, you will find that most of the large players are foreign owned. I don't know. Alan, you would know better than I. I think that's a disappointment. ARM is a wonderful exception. And I'm told the other exception is, there is a myriad of small companies, areas like computer gaming and things like that that are brilliant, and certainly there are areas like, you know, video transform of pictures and film and things like that. There are sub-areas that are not pure software systems that, in which this country is brilliant. But I would have thought there's also a tinge of, of disappointment at what we've done. I was endlessly, I mean, endlessly these discussions went on with the Government and the press and people like that about, you know, software doesn't really make anything, in that sense it's not really important. Well looking back, having to defend it, yah, I think, Christ, you know, I mean now we're told, you know, what a wonderful thing we are as a service economy. There, we were pioneering the idea, albeit in one particular sector, of a service economy, and, you know, you had to sell and sell and sell the idea. And now all the Government and the politicians are selling it back to us. So, perhaps one's had a small role [laughs] in converting people, I don't know.

[1:31:03]
Oh well just on that theme, I mean, do you think it's disappointing that Logica's been sold to a Canadian company?

Yes I think it's extremely disappointing. I was really upset and sad. I think it's a very good company. I don't know a lot about it, but it has a very good system, for example, of staff participation in their shares, which I strongly approve of. For all I know it's extremely capable, it certainly was a very profitable company, profitable enough to allow it to buy Logica, which was a good deal larger than it, and must have been a wonderful acquisition. It gave it a total European network, you know, just like that. But I was disappointed, disappointed, I suppose, that, I felt a sense of, oh, I don't want to sound arrogant about it, but pride that Logica still existed, when every, nearly everyone else had gone. Where has Digital Equipment gone? Where has Tandem? People I mentioned, you know. Or Honeywell, they don't make computers.

All these people have gone, and Logica had carried on, grown, been successful, had a huge operation in France for example, that, you know, and then the next day it was, the logo was wiped away, the name was wiped away, and this and that. I felt very sad about that. Yah. I think… I think, I've come to terms with it now. Someone told me, well it was chairman, was the then chairman of Logica, I said, 'Why the hell are you selling this? You don't need to, why are you doing it?' He said, 'Logica is, you wouldn't recognise it, it's not the company that you knew.' And the market was not the market that I knew. It was large, what we used to call body shopping, it was putting in large teams, what do they call it nowadays, facilities management or something, putting in large teams of people, which was not really the market that we were ever good at, or really interested us frankly. And that's what the huge international market of those companies had become, and, perhaps, I think its day had passed.

[1:33:20]
Mm. Well I mean, it did grow substantially after you and the other founders left and Martin Read took over.

Yes.

I mean that was a quite dramatic growth then.

Indeed. Indeed. When I left I think it had about 3,000 people, and when it expired it had 40,000 people. So yah. Colossal. I mean that was done almost in, well, extremely largely by acquisition, but, they were successful acquisitions to the extent that they built up an international, big international operation, huge operation in France, Sweden and places. It was unsuccessful in the sense that the company wasn't profitable enough. I mean Martin Read himself was effectively forced, who had built this up, was forced out of the company by the stock market because the company was, was not profitable enough. So, it, it succeeded in expanding, and absorbing, which not easy, these companies, but failed to make a profitable business out of it, and I suppose that was really the ultimate failure of Logica at that stage. We were, in our heyday, as well as being very successful we were an extremely profitable company.

[1:34:43]
Mm, indeed. So, was it, was it equitable in the boardroom? I mean did you and your co-founders ever fight over things?

Well it was usually, it was nearly always, and, it sort of worked all right. I mean there was one occasion where it became pretty nasty and bloody. I'd rather not go into the detail, but when it does, it is very unpleasant. But, you know, perhaps that's business. Gosh, you read the papers, it's happening in all companies all the time more or less. So in a sense, you know, we didn't have much. I think we were also blessed by very helpful and intelligent outside directors, we always had outside directors, to start with from Planning Research Corporation, then when we went public, outside directors. Paul Bosonnet, who became the chairman, he was, used to be, you know, head of British Oxygen Company and he became our chairman. Clive Hollick, who was a wonderful outside director during that period. And they were very very helpful to us.

Some computing services companies have spun off other groups, people have left taking staff.

Yes.

Did you have any problems with that?

Well of course that's how we started, so, you know, we were guilty right from [laughs], guilty from the word go. And, I think, I mean talking of that, and we were sensitive about the number of people from Scicon who applied to join us, and a number did, but we really wanted to limit the numbers. We didn't want to wound them more than we might have done. And, in retrospect, I don't know who was dealing with it at BP, but you know, they never came at us in any way, and I think that was a generous act on their part.

Mm. Mm.

In terms of people leaving us to do that, no, we had none like… There was one tiny example, I think Tim Johnson left with a small, to set up on his own doing forecasting and, and data on the industry, but, we, we mercifully had none.

And what rate of staff turnover did you experience?

Oh. [pause] Honestly, I can't remember. Of course, all of us in the industry had turnover. The main turnover was not going to competitors; I think that… I can't think of an example where that happened. It would be going possibly to join clients where it was, you know, they were joining a different lifestyle with a management, fixed management job. But I suppose it was, less than the industry. I mean we were, I think, a very tight group, faithful to each other, and it was not really a problem. Probably in the latter stages of the company it became, might have become more of a problem, but it certainly wasn't during that main period.

[1:38:22]
OK. You have a CBE. Was that for, were you honoured for services to the computer industry, or for some other reason?

Yes. Yes, yes I, I was hesitant about accepting it for two reasons. One, I'm not sure that I agree with the honours system at all, but I'm being entirely inconsistence that I did. I'm just reading the biography of John le Carré, who ostentatiously didn't accept his CBE and the like, et cetera, and I… But I thought that it… Secondly, I thought, well really it belongs to, it doesn't belong to me, the CBE; if it's an honour at all, it belongs to the company, it belongs to my wife, who was bearing throughout all this, and played in a sense an important part of support. And an individual honour's a wrong thing. An honour to a company is what should have happened. But, I did accept it. I accepted it on that basis really.

Yes, so the honours system doesn't do that.

It doesn't do it. And it would, in a sense, be much better if it did. I mean if you're going to have an honours system, honour. Well, there are the Duke of Edinburgh Awards and things like that, I think, one, one of them, but, I think those sort of

honours are sensible. Honours that go to politicians or civil servants who have just been doing their job, it seems to me is a load of absolute nonsense.

Did Logica ever win a Queen's Award for technology or…?

I think… I…

My memory fails me.

Listen. I'm virtually sure we did.

[1:39:53]
Mhm. If you had your time over again, would you have done anything differently?

Yes, certainly. [pause] A mistake that I made, though I knew at the time almost it was a mistake, was to accept the funding from Planning Research Corporation in the way, the form that it was. It was a very interesting company. It was like a conglomerate of a series of professional companies, consulting engineers, architects, computer people, in separate companies with their own separate brand name, and was an inspired idea. Nice people. [pause] But, the funding that they set off, the agreement, had in it right from day nought, literally before we started, a pre-emption clause whereby it could buy a majority of the company from the staff shareholders at a formula price.

Mm. Certainly.

Well, I absolutely didn't want that. But essentially I had no choice. I had nowhere else to go for money. Now in the event, two things happened. One is, Logica grew, far, far… They had a formula of how much they would pay according to earnings, et cetera. Well the payment was all in PRC stock. Two things happened. PRC stock, it was a very successful company, was destroyed more or less, it was destroyed by a venture of, going into an online hotel reservation system, which was way before its time, was too early. Secondly, we did so much better that the formula was under-valuing in pricing, so we were sort of, hit two ways. So, financially at that stage we

were forced to sell out, partly. We kept, we kept a quarter I think of the company. And, at a miserable price. I mean people who did make money out of Logica shares subsequently only did it by crawling back into the public flotation, and everything else. And so in retrospect, probably, I just should have tried to find money elsewhere and just not accepted that condition. But that's the sort of, on the financial side. Clearly the word processing side was a mistake, but I've dealt with that already, as I wouldn't have done…

You couldn't have anticipated that though, could you?

One aspect… Well two. Yes. One aspect of it I could, and the other I couldn't. The one that I could anticipate was our problem in establishing an international marketplace for this product. We sold all of our… In the UK, we only had one buyer, which was ICL. Now it was the best possible outlet, because they were the biggest show in town. But nevertheless, it's not a very healthy position to be in right from the start. I think, I also could have anticipated that we weren't going to be terribly good at selling this sort of, Europe-wide, because it was not our metier to do that. But I… No, I couldn't have anticipated the way that the market would change.
[1:43:50]
I mean incidentally, in retrospect, it's interesting watching people work now, what we did so long ago with the word processor is still better than what people have now. Because now, we run a word processing package on a general purpose computer, but that computer doesn't have simple keys that even an old electrical typewriter had, where you could do functions like that. Now we then produced a, effectively a personal computer, but we added on special features that could allow you to do, by hardware, those functions. And we, the world, have lost that. I mean it's astonishing what you see the world do. You see the world sending messages to each other on a mobile phone, which is about the most awkward thing you could imagine to actually send text messages on. And so in a sense, aspects of the way we use computers, whilst they have become widespread, cheap, are worse than what they were. And somebody, historian, one day will point out these anomalies that, that we live with. Why is it that managers throughout the world and country are doing their own, operating as if they were typists? Now for Christ's sake. I mean you know, we had people who were specialist typists, we had people once upon a time who were

specialist-ly punching cards. Not a menial job, but they were just better at it than we were. Now we all have to do those functions, and we're not good at it. I mean it's absurd.

[1:45:55]
Well it's been, as always, a great pleasure talking to you.

It's a pleasure talking to you Alan. Great to talk to you again. [laughs]

Yes indeed. And really good to hear your views on the industry at Logica.

I have my views on, on you and the industry, which we talked about before, but, the few, the very very few major journalists in this field had an enormous impact at that stage, I don't know if they have any impact now, but an enormous impact, because, we had to persuade them that we were doing intelligent things, but then, they were intelligent in the questions they asked and the involvement. It was, it helped us to have a highly intelligent press. And that was a contribution to, to the whole development of the industry at that stage.

Mm.

[End of Interview]