Simon Gibson CBE & Mike Doyle

Interviewed by

Richard Sharpe

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Via Zoom

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Welcome to the Archives of Information Technology where we capture the past and inspire the future. And I think you're going to be inspired particularly in the future by our two contributors today. It is Wednesday, 19th January 2022 and we're on Zoom. I'm Richard Sharpe and I've been in and covering and researching about the IT industry since the early 1970s. Our particular focus today is on two things: networking and communications on the one hand, and also inter-rights culture within IT, and there are some very interesting questions and some great answers I'm sure to be asked today and answered today by our two participants. The first is Professor Simon Gibson, CBE, whose long and varied history he will give you, and the second is Michael Doyle, and both of them worked together for a period in a very important company they want to tell you about, and they want to particularly focus on the lessons to be learnt from this company, called Ubiquity. And today also, the two are acting with a very special mandate to build entrepreneurship and to find entrepreneurship and to take through many stages of development entrepreneurship, not just throwing money at young entrepreneurs, but actually guiding them and developing them so that they become – hopefully – successful companies. Welcome gentlemen, welcome Simon, welcome Michael.

Thank you.

Simon, let's start with you, you were born in 1958, Simon, what were your parents doing?

SG: My father was, he ran a factory that was part of Thorn EMI's empire, and you remember in those days, televisions, radiograms were all in wooden cabinets with fine marquetry and all sorts of other things, you can't imagine it today, can you, that all those domestic devices were in wooden cabinets. Well, my father ran the factory that built those wooden cabinets.

Where was it?

SG: Rayleigh in Essex.

And your mother? What was her background?

SG: My mother was, she, when we were young she looked after us and stayed at home and she was a legal secretary when she, she ended up working in an estate agency as well in the later part of her career.

Had either, had they been to university?

SG: Sorry?

Had either been to university?

SG: No, neither.

Did you have siblings?

SG: Yes.

Who were they?

SG: I had an elder brother who was in the intelligence community in the military, he had an illustrious military career, he was involved in the embassy siege, the Iranian Embassy siege, etc. Sadly, he died young, he died at thirty-four years old. I have two brothers who still live in Essex. One…

Was there much rivalry between you?

SG: Of course. [laughs] Of course. Four boys in a household, my poor mother. Yeah, you can imagine.

What was the rivalry on?

SG: Everything.

Were you sportive?

SG: Yes, yes.

What games did you play?

SG: Well, my interests were, at school I was, I ran for the school in athletics, played various sports. But the real sport that I suppose I excelled at was actually our school had a sailing team and we were in the top three sailing teams in the UK. And some from my school went on to Olympic glory. So that, you know, how was that the case? Because I wasn't at a private school, I was at the comprehensive. It's always about the person who inspires, it's that leadership, and we had a physics teacher, Mr Neill, who was devoted to, you know, not only sailing, I remember at lunchtime, he had a Ford Popular, and he allowed us to learn the mechanics of that car and drive it around the playing field and introduced us to driving. Can you imagine today, you know? A Ford… You know, what an individual, you know, great coach, not only in physics, but in sailing and in car mechanics. And, you know, as a result of his leadership and his coaching, you know, the school excelled in that one particular sport.

Did you enjoy school?

SG: At times. You know, depends on the quality of the teaching, doesn't it? Every time. Yeah. So in some subjects you learn to love, mainly not because necessarily you had a natural affinity to that subject, but you had a wonderful teacher.

[00:05:08]
So physics was one of your great subjects?

SG: Yes, obviously it's a subject I really enjoyed, yeah.

And the others were what, that you enjoyed?

SG: Oh, all the sciences, maths, art, English, really enjoyed history too, geography. So, you know, it was just… but each year you had a new teacher and there was your relationship with the subject… quality of the teaching. I left school and had an

apprenticeship with what was the Post Office telephones. You remember, before it was BT?

Yeah.

SG: Absolutely fabulous programme. You know, you spent about twenty-eight weeks in fulltime education and the rest of the time you were rotated through every department of the phone network. You were exposed to everything from being up a pole to down a hole, to building a telephone exchange, fibreoptics networks, you know, planning, it was a superb programme. And my business partner, Sir Terry Matthews, was also apprenticed through that programme as well.

[00:06:18]
Mike, you were born in 1965.

MD: Yes.

And where was that?

MD: That was in Clifton in Bedfordshire.

What were your parents doing?

MD: My father was an electronic engineer, a civil servant in the Ministry of Defence, and my mother was a language teacher originally and then brought us up as children, and then moved on to office administration.

Had they gone to university?

MD: No.

Neither?

MD: Neither. Gone to technical college, but not to a university.

And your father was working on what?

MD: Well, specifically he was, for a long time he worked in the island of Malta, that's where my mother originated and he was moved to after the war. He worked in electronics and engineering, so the dockyards there used to have an electronics department that would work on the ships and so forth, and then he, when he came back to the UK he joined the civil service and moved into the Ministry of Defence and stayed there until he retired.

You went to Bedford Modern School.

MD: That's right.

Ten O/A levels and four A levels. What were your subjects?

MD: A mixture of the usual ones you'd get: English, maths, physics, chemistry, biology, I also studied German as well, and French. It was a private school. I originally went to a comprehensive school just round the corner from where I lived, and at the time there was an entrance exam with the opportunity to join the school with a bursary. We couldn't have afforded to go there without the bursary so they- and I managed to pass the entrance exam and there was an interview and they offered me a place and I stayed at the school till I moved into college.

Right. What do you think you got from your parents?

MD: Certainly a level of intellect and curiosity. My mother was very good at languages, she spoke four languages, and my father's technical background and willingness to engage with us on homework and projects, he's very mechanically minded as well, you know, can fix anything. I haven't inherited that gene, unfortunately. Have to pay people to do that. But on the electronics and technical side, I've inherited that, and a willingness to query things and be enquiring.

They supported you going to university?

MD: Absolutely, yes. I was very fortunate enough to get what used to be called a thick sandwich sponsorship course, they tend not to do them nowadays. I applied to a company that used to be called GEC Telecoms and the process there, for people less familiar with it, was you did one year with the company, then you did your three years or four years at college, and then you promised to come back for at least one more year to the company and in that process they paid you a stipend throughout the year. It wasn't that much, but it was enough, and whilst at college you also got a small bursary fee and then afterwards you got a reasonable starting salary with the company. So that sustained me through college without the need to take huge loans or to ask too much of my parents.

And you studied at University College London?

MD: That's correct, yes.

[00:09:52]
SG: Richard, I was going to say, isn't it interesting, you're interviewing two people who were both funded to be educated professionally.

Yes.

SG: And, you know, we left both of our courses without debt and we had sustained ourselves. Now, compare that to the sad state of affairs today where the average undergrad is leaving with, what, £53,000 of debt. Very different world in terms of, you know, when we interview people, graduates today, what we often find is, you know, I ask them to rank these four things in terms of importance to them: reward, recognition, creativity and security. Now, I can tell you when I asked that interview question ten years ago, security was always number four. When you're in your twenties, what have you got to worry about. And you would hope that if you're going to hire a salesperson, you know, obviously reward is at the top, if it's a marketeer you want creativity, you know, if someone's in an academic community of course recognition is key, because that's how they progress, with peer review. I can tell you

today, invariably security is either number one or number two, in a twenty-one year old. And it's the result of they're burdened with so much overhead.

They're old before they're young.

SG: Correct.

Now, you, Simon, were in the old GPO.

SG: Yes.

And it had its cohort of suppliers?

SG: Yes.

GEC.

SG: Marconi.

Marconi, Ferranti. Not so much…

SG: Yeah, STC.

Oh, STC of course.

SG: Yeah.

The mighty STC. Tell me about the culture of the GPO when you were in it and starting.

SG: Well, it was very much you were a government employee and the culture was heavily unionised. I'll give you an anecdotal story, I'd been on, I'd been to Bletchley, you know, which is where you got more vocational training than theoretical, you were obviously at college to get the theoretical and polytechnics to get the technical

element of it. But Bletchley you went and it was hands-on. And I remember, I came back and I wired up just a portion of, a block on a distribution frame, probably 500 pairs or something like that. Did it beautifully, laced it beautifully, it was textbook stuff. Went and got the technical officer, showed him my finished work, he said it's really good, came back with a pair of bolt cutters and cut it. And said, 'You do it again and this time you take two days to do it. Because that's the union negotiated time'. And I remember years later I was with Dr Troughton, who at the time, he had been head of BT now for the London region and he was on the board, he was responsible for Project Sovereign, and Project Sovereign in the early days of BT was to shed 30,000 jobs through voluntary redundancy. I said to him, you'll be operationally more efficient as a result of Project Sovereign. And actually the following year it was another 40,000 people reduced. It was very inefficient, there were, you know, an installer was, everyone would have a quota, and it was, many people had, I noticed many people had two jobs, not one. It was ripe for reform.

[00:13:43]
Okay. Mike? Mike, you were then, you were seen through your university days by GEC Telecommunications and you joined after your university for a year, '87 to '88, and were a System X developer. Where were you based, Mike?

MD: I was based in Coventry.

And what were you actually doing? Writing software?

MD: Yeah. I was, because I came from a software – I did computer science at college – I went straight into the software division. So that was analysing existing code that was written in Fortan or C and then making it better or making it faster, and then modifying things to, for the telecoms side of it, the System X modules. So I was part of a large team, you know, there was probably twenty, thirty of us when I first started and it went up from there, and it was all based around, you know, a team dynamic of being allocated small tasks to do and then you get more and more responsibility as you're able to show you write decent code. So it went from there.

And was that part of GPT?

MD: It became GPT, that's right. It was originally GEC Telecoms and then of course the merger with Plessey occurred and I was there at the time of the merger.

[00:15:02]
What was that like?

MD: Chaotic, if I'm honest. Because you've got two companies, they're doing similar sort of things, so there was quite a lot of infighting as to, you know, which bits would be kept and which would be thrown away. So yeah, there was chaos, I would say.

And also they were run radically differently? Because Arnold Weinstock, the quintessential accountant, shouting at people down the phone because their margin is down, and we've got the Clark brothers saying oh yeah, go and build it, why don't you build it, can you do that? Okay, here's the budget. I over-characterise it, but that was somewhat like it, wasn't it?

MD: Yeah, indeed. There were, I mean there are some similarities with some of the other mergers that I've seen, with Avira in more recent days, but yeah, it was chaotic because there was a lot of people who had no control over where that future was going to lie and they just chose, from our perspective, they seemed to choose things at random, but clearly it wasn't at random, but that's why I use the word chaotic.

[00:16:10]
Simon, when you left GPO, you went with Ericsson, did you not?

SG: Yes.

And this was in 1981-83. You were based in the City of London.

SG: You can age this, Richard, by deregulation. My father was leader of a council and he was, obviously, it was a Conservative-led council, and he took me to a dinner and I happened to sit next to Michael Heseltine. And Michael Heseltine asked me

what I did and I said I was in telecoms but, you know, I had an interest in computing as well. And he said, get back into telecoms because we're going to deregulate it. And I took his advice and I switched from an engineering base to a sales and marketing one, and I got a job in Ericsson and I sold systems in and around the City of London. And they were everything from, do you remember Central Electricity Generating Board networks, to things like Rothschilds, the bank, the Stock Exchange was a customer. Ericsson at the time had the only distributed switch architecture that was digital, called the MD110. I sold that. I actually believe at the smaller end I was the first person in the UK ever to sell a deregulated switch. Which was about ten past nine in the morning that they took off the restrictions. Because of course, enterprise telecoms equipment could only be supplied by BT. But there was another company in the marketplace called Telephone Rentals. Telephone Rentals, instrumental in lobbying for deregulation. You had this ludicrous situation where, if you wanted to make an outside call, you had a phone on your desk for the, you pressed '9', get dial tone and then dial out, but you'd also have another phone on your desk for the intercom. Obviously deregulation eradicated that kind of, that lunacy on the desktop.

What was the culture of Ericsson, Simon, during that period?

SG: Well, it was a joint venture, because it was a combination of Thorn EMI and LM Ericsson of Stockholm, Ericsson, you know. So culturally it was very Scandinavian in terms of the technology, but it was run as part of the Thorn empire, so… And eventually of course, Ericsson went, they went solo with the business.

Ericsson survives, Thorn EMI does not. GEC does not, Plessey does not, Ferranti does not. Why?

SG: Well, when we, when we were putting Alacrity together I had a meeting in the House of Lords and someone called me the most persistent prick they'd ever met, because I was trying to get this money raised. And he said to me, 'Why are you so damn persistent?' And my response I think was bang on the money. I said to him, 'I'll answer your question with two questions back'. So the first question was name a British telecommunication network equipment supplier.

Why don't we have a Thorn, why don't we have a Plessey, why don't we have a GEC, etc? What's the reason?

SG: Well, I think each of them has their own story, but I think Marconi was absolutely the case study. I remember driving up the M4 with Sir Terry Matthews and we took a call from Mike Parton, and he told us that they had just lost the contract to BT. You know, for years GEC and Marconi had been the predominant supplier, you know, they provided System X, and they came out with this 21CN tender, put it out, it was awarded to Huawei in China, despite all of the concerns that there were around security, and the government didn't bat an eyelid and were more than happy for that to go ahead. And on that, Marconi obviously was finished. What I don't think people realised was, you know, the CTO at the time of BT, shortly after, quite shortly after that period, emerged as the vice chairman of Huawei, you know. And there were, many of the people involved in that decision ultimately ended up, you know, at a senior level and involved on boards, etc, of Huawei. I think questions should have been asked all over the shop regarding that demise, but nothing was said because historically I don't think the government with its free market dogma had any interest in defending British companies. It would never have happened in Germany, it would never have happened in France, would never have happened in most countries, including the USA. But in this country it was, right, anything's for sale to the highest bidder, regardless of where they're from. I have to say, very, very encouraged by the new Act that's come into play on 1st January, the National Security and Investment Act, which now requires anyone who's acquiring more than 25% of a company in a category of seventeen, you know, technologies, to register that intent, which gives the government thirty days to call it in to look at it. I think a lot of British tech companies have just disappeared off the map, the latest one, Newport Wafer Fab, you know, the only independent wafer fab left in the UK, and I genuinely believe the first thing the government knew about it was when they read it on the front page of a newspaper.

Yeah.

SG: So, yeah, that complete obsession with an open market works in some ways and is highly destructive in terms of national ownership on the other.

[00:22:32]

And you then move to Mitel.

SG: Yes.

Did you find them or did they find you?

SG: They found me. And Mitel, of course, started out, most people considered them around PBXs, you know, enterprise switches. The first product Mitel ever made was a tone to pulse converter, a tenth of the size, a tenth of the cost of Western Electric's product, and that funded the development of the world's first software-controlled PBX, which was the SX200, which obviously BT distributed as the Regents, and the SX20 was distributed by BT in this country as the Kinsman. But that had a 40% market share within just a few years. So remarkable growth. And at that point I transitioned into marketing and then from there of course when Newbridge was sold to BT, we then started Newbridge, which was the dominant data networking supplier of the 1990s in the world.

What was it like exporting and getting sales into different countries?

SG: It's a really insightful question, Richard, and I'll tell you why. Because when we set up the company, it was set up, both Mitel and Newbridge networks were set up simultaneously in three jurisdictions: Canada, Ottawa; the UK; and in the US down around Washington. Mitel and Newbridge looked like domestic entities in those countries. The headquarters was ultimately Ottawa, but there was high degrees of autonomy in those three regions. And that was the challenge for me as the head of marketing, because I had to try and maintain one brand instead of having three brands going off in rogue directions. But if you took Europe, for instance, we found in the early days of Newbridge, and you wouldn't be surprised at this, that there are some countries in Europe who are very easy to trade with and there are some that were quite challenging to trade with. And I think it's a cultural thing. So, if you go to Holland, very, you know, it's a trading nation, they're used to trading internationally. Scandinavia, international trading traditions. Italy, international traders. Portugal, international traders. Much more difficult to get to establish a beachhead in fortress

economies like France and Germany. We got there in the end, but you know, I wouldn't suggest that was someone's first attempt to create a beachhead if they're exporting.

Partly because they have their own national champions in Siemens and in Alcatel.

SG: Yeah, yeah. In those days, of course those companies are now no longer in the business. We can get to that later on in the conversation.

[00:25:43]
You spent three years there, you spent one year in EFI Corporation, who I haven't actually heard of. What does EFI Corporation do?

SG: Well, what happened was, when Mitel was acquired by BT, well, we had decided to set up Newbridge. But we were, you know, there were restrictive covenants which I now understand are illegal in employment practice, but you weren't allowed to work within the industry for a year. Do you remember those clauses that were in contracts?

Sure.

SG: So we all had to go and do a sabbatical for a year before we could get back in the industry again. So I had the opportunity to go to EFI, they were in the telecoms business, they were, their focus was power conditioning. But what interested me about going to EFI was they were going to list on the Nasdaq stock exchange and I thought it would be a really good thing to understand and learn what that listing process is all about. So I did that for a year, it was always to be a year, it was a year contract, which then allowed me to be cleansed and fit to go, you know, without any legal problems to then join Newbridge and help build that company, and I ran marketing worldwide for Newbridge in its early days.

Okay, okay. Now, Mike, after you…

SG: By the way, just as an aside, because the viewers might be interested, because not all the young will have remembered Newbridge, but we started Newbridge over

the top of a drycleaners in Chepstow and over the top of a furniture store in Ottawa and ten years later it had revenue of three billion, was the biggest provider of data networks to telephone companies and was sold for 10.8 billion dollars.

[00:27:35]

Indeed it was. We're not going to get there yet, because I just want to fill in some of the background of Mike's work after he left GEC Telecoms. You only stayed a year there, why was that, Mike?

MD: So after I graduated and came back I was given the sort of pep talk on entry back into GEC and they talked strongly about being able to progress in the company based on your performance, and it was credit based and a meritocracy. Unfortunately I found that wasn't the case and after sort of three or four months of producing what I thought was outstanding work, I was basically told it was a dead man's shoes type of environment and I was disappointed with that, so I made some overtures saying, you know, I'd maybe like to move round in different departments, and that also wasn't possible. So by the end of the year I said, you know, I really don't think this is going to work for me because there are quite a lot of people around me who have no intention of moving on. So I submitted my resignation and went into consultancy just contracting.

And what sort of companies did you work for?

MD: After that actually I worked for STC, at the time, as a contractor and I worked for a whole range of financial, video and telecoms companies all over the place. I travelled up and down the UK extensively over sort of three or four years.

You say you worked for STC?

MD: Mm-hm.

They were based in Harlow, at least I think their research was.

MD: That's right. Indeed, I travelled from Bedford, where I lived with my parents, for about six months, back and forth to Harlow, yeah.

And they were doing quite good work on fibreoptics at the time?

MD: Yes.

And they also had a view of trying to combine computing and telecommunications and for a while took over ICL, did they not?

MD: Yes, they did, yeah.

That was a bit of a mistake, do you think?

MD: Difficult to say, at the time that I was working I was quite compartmentalised. Contractors were typically given the, not the least, but certainly the less interesting portions of the work to do, but the ones that were pivotal on technical capability of the contractor rather than interest. So I didn't get the great combination type work, I got some of the sort of more, not mundane, but the more prosaic work that was involved to try to migrate to data and combine databases and use some of my modern techniques to bring some stability to some of the code.

[00:30:18]
Okey doke. Now, we're just going to deal for some time with Simon's experiences at Newbridge before we bring you both together in Ubiquity. Simon, Newbridge Networks Corporation, '87-93. Tell us about the founding of that corporation.

SG: We all met in The George pub one night in Chepstow and Terry, you know, shared with us an idea that he had for a data, well, a data and voice company, you know. In those days the business was multiplexes. But, all the multiplex vendors to date had produced things that looked very comfortable in the enterprise environment, they were not standardised at all. And obviously we came from a telco background and realised that the opportunity perhaps was to build…

This is Terry, this is Terry Matthews.

SG: It is.

Where had you met him before?

SG: Well, he was at Mitel.

Oh yes, that's right.

SG: Yeah, he was the CEO of Mitel. And I was quite surprised, I mean I was in my house one day in Chepstow and a white Rolls-Royce pulls up in my driveway, knocks at the door, and the door opens and it's Terry and he says, 'Do you want to come up the pub?' Now, I'd hardly known Terry, you know, I had a regional marketing job. And we went to the pub and there were sort of eight of us in there. I suppose that was the origins of Newbridge in Europe. I ran marketing in the early days, established a brand. Terry's quite extraordinary, you know, he kind of asked me what I needed to get the company to be the number one supplier in the UK from a – sorry, in the world – from a marketing expense perspective. I gave him a number and he said, 'Do it'. And, you know, three years later we had become the leading data supplier in the world. But very much part of that proposition was creating a standards-based product. Our product sat in nineteen-inch racking. Everything in a telephone exchange was in nineteen-inch racking. It had dual redundancy in power, it had dual redundancy in its control planes and its, you know, CPU. The other thing it was, that we had done, is created a network managing system that allowed a carrier to take a network of our devices and slice them up into VPNs and sell their corporate customers a VPN which they controlled and managed, but the window that the customer saw was their own network. And at the time it was quite unique and that opened up a massive revenue opportunity for carriers. And of course Newbridge ended up with pretty much every carrier in the world as a customer. And during that time it was really exciting, I mean the first year sales was seventeen million, second year sales sixty-seven million, 121, it was just extraordinary growth to be involved in. But, during that time, something else was happening on the other side of the wall, which was the internet. This is pre-web and early internet days, and eighteen of us, who were all around thirty years old,

had different ideas at how Newbridge could incorporate, you know, the internet into its thinking and its product direction. Newbridge had become, however, slightly bigoted around the technology that they had transitioned into, which was very elegant, called ATM – you remember Asynchronous Transfer Mode – very small cells as opposed to variable packets, was very good for real time communication but not so good for load balancing on the network, which of course the internet was much better at doing. And so a number of us took our ideas to Terry and by that time I'd come back to the UK, I'd met Mike, and we were persuaded that the telephone network would collapse onto the IP infrastructure. And in the event that that happens, obviously circuit switching is dead, telephone exchanges would decompose, everything would end up on the internet protocol. So in the event that that was to happen, we thought the world would need a new signalling protocol and it would be absolutely…

Okay. Let's take a pause there. I don't want you to go that far yet.

SG: Okay.

[00:35:00]

I want you to talk for a moment about your joint venture with Radio and Telecommunication Ministry of the Soviet Union.

SG: Okay. This is around the time of the publication of Perestroika and Glasnost, this is Gorbachev. We had been, it had been suggested to us by the government that we got ourselves into Russia early to ensure that we captured that, but we were still dealing with the old Soviet system. So I won't – I've got so many anecdotal stories I could tell you about that period in Russia, but for the sake of time I won't be able to do that – but after lots of toing and froing we managed to establish a joint venture with the Radio Ministry and the Ministry of Telecommunications. And we did an exchange, we were able to access Russian mathematicians who were particularly talented in creating voice compression algorithms and suchlike, and in return for that we gave manufacturing of a lot of the metalwork and technologies that we were allowed to share with the Soviet Union then, because there were still CoCom restrictions which restricted us to be able to, you know, do certain things with the

Soviets, particularly around silicone. So, you know, you can imagine how complex a set of negotiations that were, it was very, very complex.

I'm sure.

SG: We got there in the end and I think we were one of the first Western companies to ever set up a joint venture there. Then the Soviet Union collapsed and things were fine for a while, but then corruption set in and we eventually decided to withdraw.

What is the management style – you may wish to pass this question – what is the management style of Sir Terry Matthews?

SG: No, I'll answer that, willingly. Terry has got, he's got the senses of a bloodhound in his ability to identify talent. He's very much at the forefront, never happier than when he's in with customers, you know, finding out what they need, what their current trends are. And he's very good at that sort of translational piece between the customer demand and the technology. He's an absolute consummate engineer to this day, but he has this sixth sense to, you know, see what's coming down the line. Some people would call it foresight, you know? He doesn't operate in hindsight, or even in insight, he spends his whole world looking at foresight. So if you were to say what was, if Terry had a weakness what would it be, he's not an operations guy. You know, but there's plenty of people who can do that stuff.

And what is the management style of Simon J Gibson?

SG: I'll let Mike answer that. [laughs] Well, I would hope, Richard, that I took many of the lessons I learnt from watching one of the world's most successful telecom entrepreneurs and putting a slightly different spin on it. Mike?

MD: So I would say Simon operates very differently to Terry, which is, you know, a testament to that learning phase and trying to polish the elements that he found that would work differently for his capabilities. But the bit that Simon does that is very noticeable, he surrounds himself with people who are better than him at things that he needs to get done. So, he doesn't pretend to be a technical expert, and I don't pretend

to be a graphics or marketing expert. He employs *the* best people to get the job done around him, and collectively that has borne fruit in what we did. So it's trying to understand that, you know, you're not, you don't have all of the eggs in your own basket, it's make sure that other people have those capabilities around you. And if that- and for some people that can be a threat. For the way that Simon operates, it's not, it's definitely one plus one is greater than two. And that's been noticeable all the way through his process at Newbridge, and then when we got together at Ubiquity and at Alacrity, it's making sure you've got the best people around you to make the situation much more fruitful and productive.

[00:40:09]
Simon, are you a good butcher, Simon?

SG: No.

Okay.

SG: I mean, one thing I would say is that I did, I think I inherited a considerable amount of Terry's foresight – would you agree, Mike?

MD: Oh, we picked some winners!

SG: Yeah. And the other thing is, one thing I'm probably better – and I think Terry would say this as well – my translational skills are very good. So I can take really complex scenarios and distil them down into concepts that mere mortals can understand.

So 1993, 1994 you had a view that the more traditional telecoms approach was probably going to collapse into the technology of the internet and therefore '93/94 you jointly set up Ubiquity Software Corporation based in Newport, south Wales. Now, this is, south Wales has been cropping up again in this story. And tell me, both of you in turn, why is south Wales so important as a centre? We don't rate it up there with Silicon Valley or Cambridge.

SG: Well, Mike and I met in south Wales, because Mike was on, we were both working on a contract. I'd come back from Canada, Mike was a contractor, we had that serendipity moment in Chepstow. And it's a good question, Richard, because we had the opportunity, didn't we, Mike, so we could have gone to, a lot of people advised us to go to Basingstoke, Maidenhead, you know, all the centres of tech at the time, but we, you know, we had spent a little time here – and by the way, my mother's family are from Monmouthshire. I didn't realise that at the time, but as I've done the genealogy, I'm like a salmon, I've swum back to the spawning grounds - but one thing that we did notice is there were very few employers here in technology and yet there were seven universities. And it was our hunch that worked well, because we didn't have to worry about competing new companies stealing our employees, we got the lion's share of anyone who was talented in Wales who wanted to stay in Wales, they could get a job with Ubiquity, you know. Ubiquity ended up, as you know, it did the largest venture capital round in software ever to be done in the UK in its time, it was listed on the stock market. It became Wales's first technology publicly listed company. We had no problems recruiting people. And, do you remember Mike, I think in ten years' history, out of the 200-odd people that worked in the facility in Wales, I can only recall two people ever leaving.

MD: I was going to say, one of the key things we noticed in getting to the point of starting the company was, there was a huge drain of people. They would get a year or so's experience and then either go to the US or go to London or something or other, and that's a real problem for retaining talent and capability in an area. But what we did note is that graduates out of Bristol and certainly out of the Welsh universities liked to stay in that area, they didn't necessarily all gravitate to London. And if you're developing products like software products, what really hurts a company is technical staff turnover. I mean you do expect to have turnover of sales staff, that is a, just a, that's what happens, but when you spend six, nine, twelve, eighteen months immersed in a technical product and then you leave, the gap that you create, the hole that you create is very hard to fill quickly. So we, and we found that people wanted to stay in the area, be it, I mean the area's fantastic from an ecological and demographic perspective, it's an enormously beneficial area to live and to work. And we found that, we could have chosen any of them and we looked at Bristol and we looked at Cardiff and we looked in the surrounding areas, but we firmly rejected the advice to

head towards London, because we felt that the turnover, (a) would be crippling, but (b) the costs, the cost of actually locating any form in that area were two times what was available to us in the Newport and the Cardiff area.

[00:44:57]

SG: So what we'd typically do in the recruiting is, if it was a single person, we would put them up in Clifton in Bristol or a Cardiff base so they could experience, you know, a really youthful place, and if they were married people we encouraged them to do an overnight in Monmouthshire and just to see how beautiful that county was and then point out how excellent the schooling was, there's no commuting delays, it's affordable housing, and it happens to be, in my opinion, one of the most beautiful counties in the UK. Not a difficult sell, to be honest with you, to get people to move down here. But the other thing we did which gave us employee stickiness – and it's a really important point – is we distributed 20% of the company shares to all the employees, and I mean every employee was a shareholder. And there were times when things got tough, and it's that employee ownership that kept everybody in the game. And we, at Newbridge I think, Newbridge created more than 500 millionaires in the payroll. We were a much smaller operation, but do you remember, Mike, we kind of said what would be a virtuous outcome for most of the people who are in their twenties and, you know, if you were thirty-five years old at Ubiquity you were old, wouldn't it be lovely if we could all afford to buy a house at the end of this experience. And, you know, and we delivered that in Ubiquity. Pretty much every member of staff – obviously some did walk away with seven-figure sums – but pretty much everyone could clear their mortgage. And that, for a young twenty-something, that's a really good start in life, isn't it?

Now Mike, you were CTO and co-founder of Ubiquity and the pioneer development that you did there was Session Initiation Protocol. Can you explain that to a general audience please?

MD: Yes. So before all of this came about, the Session Initiation Protocol, people used phones, were using circuit switched. And that's basically on a piece of wire, forgetting mobile for the moment, it's just a piece of wire and when you speak there's a microphone that translates what you're speaking into vibrations on a wire and then

it's picked up at the other end. Using the Session Initiation Protocol means taking your information and putting it over the internet. So that's in packets, in little blocks. And the reason that was so important was, to lay a piece of wire in the ground or to reuse that piece of wire is very, very expensive, and you can't normally put more than one conversation on the same piece of wire, it's hard to do that. There are ways to do it, but it's hard to do it. So, using the internet protocol we were reusing the capabilities of what was already established, that is the internet itself, or pipes are able, and you could put information in chunks down that wire far more efficiently than you could with circuit switched. In addition to voice you could then put video and you could put screen sharing and you could put a whole host of other things that were, from the business perspective, very attractive. It was the way of combining or coalescing those capabilities. But none of that existed at the time, so we worked together with a number of people, in particular Professor Henning Schulzrinne who was also the inventor of RTP, which is the Real Time Protocol that allows packets to actually transfer across the internet together with the session initiation. So there's a difference between session, which is the setting up of the call itself, that's when you pick up the phone and start dialling, and the information that occurs once you've got a connection. So those two together allowed us to create a whole host of capabilities, products and services that were just not possible before.

SG: And what the session, the protocol would do was in setting up the call, it would establish the capabilities of the device that it was communicating with. So it would, the session would establish, are you a phone, are you a video call, are you data, are you messaging. And it would introduce new concepts that we're quite familiar with now, like presence. You know, when you use social media or on this call now, you can see everybody that's there and what their state is, whether they're available, whether they're not available, whether they've got the camera switched on, and other such things. So that whole protocol meant that you'd have one signalling session that was agnostic, it didn't really care what the device was, it could mediate between them all. So now SIP is, it's used for call set-up on mobile phones, Zoom, Teams, most trunk calls on the network are now traversing the internet and controlled by this protocol.

Okay.

[00:50:11]

MD: The only one that really didn't was Skype. Skype had its own protocol, but everything else was SIP.

SG: But they ended up using SIP.

MD: Eventually. When they were translated out of Microsoft to Linux, yes.

SG: But I think it is worth talking about the process of putting that protocol into place, because when we started that, the people involved in this idea of a session protocol for the internet, you could count on one hand. And it was Professor Henning Schulzrinne, Jonathan Rosenberg, his research assistant, a company called Dynamicsoft and Mike and a guy called Mike Pachynski
at Ubiquity. And from there we had to work together and that community slowly grew as we got more and more people to understand the benefits of this stuff, and you have to do that through kind of proselytising and promoting, under the support of the internet engineering taskforce. So you start out with a very small group and it continues to grow. But here's the secret. You have to establish right up front that so long as there's a common objective, there's no competition in building community. And what was fascinating at the outset of that whole process was the large incumbents didn't understand what that meant. They were always competitive. We took SIP to Nortel in the early days and kind of explained the ramifications of what SIP and what the decomposition of the phone network onto IP might look like. Do you remember what they said to us, Mike? Two words?

MD: The second one was 'off'.

SG: Yeah, exactly. They literally told us to… off, and we left. Ironically, we then went to Sun on that same trip. Do you remember who was in the meeting, Mike? There were some pretty heavyweights in that meeting.   It was McNealy…

MD: Lots, yeah.

SG: … Albert, Bill Joy. Anyway, it was like the who's who of Silicon Valley. We explained SIP, we explained the vision, and that meeting ended up with them, because they beat Mike up for about twenty minutes to begin with, because they could, but when Mike had the opportunity to respond, he engendered immediate respect, because of his capabilities. And Mike's being humble, at the time he was considered one of the top 100 internet minds in the world. So the end of that meeting, not only did Sun want a piece of the action, they also offered us early access to a new project they were working on that we were the only entity in Europe who had access to that technology, and it was Java. And in fact, do you remember, Mike, I spoke at the launch of Java.

So this was the old style telecommunications companies, and presumably also their customers, such as BT and so on…

SG: Yeah.

… who just could not understand how a standard could be open and people could collaborate on it, and yet at the same time build a different business around it, is that right?

SG: Yeah, I mean we…

MD: This was all ITU based stuff, they still wanted to stick with H 323 and binary protocols and a whole range of things that were really, really awkward to use and extend, but they had a bit of a monopoly on the whole process, and it was breaking away from that monopoly and providing the capabilities and services and opportunities that led in a non-competitive environment. Because there were people from all these other companies which were competitors eventually, so as Ubiquity we were a competitor of Dynamicsoft, but when we're in the room in the ITF there's no competition, you've basically just got a goal which is to improve the protocol and make it do what it could do.

SG: Yeah, there's no competition in building community. It has to be, you know, you have to keep saying that. We held a series of – and this is before the TV programme – bake-offs around the world. There was one in Los Angeles – sorry –

one in Las Vegas, Atlanta, Beijing, we held one in Cardiff. And the idea of this was-
and we held it in the City Hall because that was the only place in Cardiff that had the
required bandwidth connectivity because it was the start point for the RAC rally, so
there was decent pipes going in there. And we were all gathered and everyone
brought their kit or their software together for a week, and you simply, it was like a
huge living lab, everyone just plugged their stuff in and if it worked, great, if it didn't
work, why didn't it work, what could we do to improve it. What I thought was
fascinating in that building community effort was that no one was allowed in there if
they were from a sales, marketing or commercial background. Because they don't get
the sense of building communities, always competitive. But, you know, when you
consider, you know, what might have happened if some of those larger incumbents
had got this vision quicker, how things might have been different. Where's Nortel
today?

Nowhere.

SG: They were the world's largest supplier. Where's Alcatel in the business? You
know, where's Siemens, where's Fujitsu? Every one of them slipped off the map
because they never, could never make a timely transition between the old switch
world and the packet world.

[00:56:11]
Well Simon, you left in 2001, why?

SG: Well, the company had gone public, I'd taken the company, you know, I'd done
the funding round, taken the company public, and at that time I was crossing the
Atlantic every ten days, and to be quite honest with you, Richard, it was causing me to
be quite ill. And I had medical advice which is, you might want to stop this.

And you did?

SG: Yeah. Well, actually what I did was, I had, I think I had the – it's not an easy
decision to make – I met with the board and I said, look, for the prosperity and future
of the company the CEO needs to be in North America. I am not going to emigrate a

fourth time to America, I'm just not going to do that, and do you mind if I find a replacement? I'll stay on the board, do whatever I can to support the company, but this can't continue.

Okay.

SG: It took about nine months, Mike, to find the guy. And as it happened, you know, we'd spent a fortune on headhunters and they produced nothing but junk. And then Terry says to me, did you know so-and-so? I said, yeah, I met him once. And he said, well – and he was running Systemhouse, which was Canada's – MCI Systemhouse – Canada's biggest software house. And he said, I think he'd be a great CEO.   And I said, well, yeah, but he's got this job. Is there any chance I could talk to him? And Terry said, I'll have him in your office tomorrow morning. Well, how are you going to do that? I'm going to put him on my jet. And this chap came in, his name was Ian McLaren, and you know when you're interviewing people, sometimes you just know, and it, you don't need an hour, you know. I was two minutes into the conversation and it was like, hallelujah, we've got our guy, you know. And by the way, by the way, a very, very good…

Mike, you stayed.

MD: I did. And I ended up on the plane going back and forth. [laughs] So I went from, you know these tiers you get in loyalty, from bronze, silver, gold. There's one above it, which is black. And I went black on all of the bloody airlines, it was, it was debilitating. Simon's right, it destroys you when you go back and forth, because you never really get out of the lag, you're just constantly lagged. And in the end I said I can't do this, it'll kill me, so I went and lived there for nine months, and that was a lot easier. Because I was going to California, typically, so it's a heck of a shift.

[00:59:05]
So Avaya Corporation came round with 144 million dollar offer, which was accepted.

MD: They did.

And again, Mike, you stayed on, for another two years. Why?

[both laughing]

MD: Handcuffs!

Oh right. That's fine, okay.

MD: It was, they were scared that if I left I would take all the engineers with me, because I have a very good personal relationship with all the engineering staff and they were worried about that, because typically acquisitions are predicated around the engineering force, which is fair enough. So they said, well, if you stay for a couple of years we'll give you x, y and z, but you can't go off and nick the engineers and they can't apply to companies that you go with. It's a standard non-compete, but it was quite restrictive. But it was very beneficial, I've got no complaints.

SG: D'you remember, Mike, me saying to you at the time, do your time, be a good prisoner. Because actually, all joking aside, they did give Mike quite a decent golden handcuff package and it was just like, do your time, be a good prisoner. And as it happens, you did feel like a prisoner at the end.

MD: It was. It wasn't a very pleasant second year. The first year wasn't so bad, but I could not have done the third year, we had to call it quits after two years. But I still honoured the agreements and didn't take any engineers or any staff. If they left and then went to another company and then approached us, that's something different, but I made no overtures to nick staff, and they were fair about that. So I stayed on the board…

Before we move on to Alacrity, which we must do, I want the same question to both of you, let's start with Simon, what's the biggest mistake you've made in business and what did you learn from it?

SG: Oh. The biggest mistake I've learnt in business is do not under-capitalise an opportunity.

Explain.

SG: Bootstrapping everything with minimal funding can be done, but it's extremely painful. And as the years and decades have gone on, I'm more convinced that if you're going to succeed you need to capitalise your company with sufficient funding, that you don't have to take your foot off the gas. Somewhere in the world there's someone with the same idea doing, pursuing the same market and if you, you know, you might have a lead to begin with, but if, particularly in the UK context, if you've got to take your foot off the gas, which you have to do to raise money, because it's a lengthy process, and you've got someone who's better financed somewhere else who's got their foot full down on the accelerator, they're likely to beat you up. So, I mean wouldn't you agree, Mike? We started with very meagre resources at Ubiquity, you can tell we learnt our lesson, Richard, because we went from, you know, very small funding rounds to the biggest venture capital round that had ever been done in a software company in the UK. Only Autonomy later on beat us. It was a 25.8 million pound venture round, which back then was a whopper. And then you suddenly realise the philosophy that you might have achieved if you'd done that earlier.

MD: Yeah, it was a fairly hard grind, the organic growth was difficult, because it was almost month to month, and that's not possible to achieve some of the increases in productivity and software advances if you're going to do it over twelve months when you could actually do it over three.

Mike, was that your biggest mistake or are you going to point to a different one?

MD: I've made plenty of mistakes, Richard. Lots and lots and lots of them. [laughs] Well, I think the biggest mistake I made earlier on, not, from a non-technical perspective, was not leveraging the capacity of other companies to do the selling for you. When you're a small company you have, you know, total belief in yourself and approaching in [unclear] and you end up either in the labs and you never progress out of the labs, but you're achieving technical prowess and capability, but you're not targeting the right people who actually sign the cheques. So, and certainly we suffered a bit from that with BT, and with some others, and not leveraging people

already selling effectively into BT and using, and basically giving up margin to allow that to happen.

SG: We did have a slightly unusual business, because of course for the first two years we were promoting a product and a technology that we were having to give away. And this is before the trend of freeware, you know. If you're going to establish a protocol that's open and available to all, you can't sell it. It's a bit like Tim Berners-Lee with HTML and the browser. You've just got to give it away. But we did have a longer-term strategy which the investors bought into, which was once the protocol's established the world would need service platforms that operated with that protocol to deliver services to the various customers. Now, you know, ironically, as we said to you, we first approached the big incumbents. We spoke to the carriers, but who took the most advantage of SIP, was the guys who developed the over the top services, the social media guys, the Facebooks, the WhatsApps, these guys just came in and just blew the world away with new thinking. But when you consider that the funding, the manpower, the market penetration that the carriers had, it's almost unforgiveable that they let those over the top guys demote them to just being plumbers and suppliers of bits on a network.

MD: They literally spent years bleating about RCS. RCS, RCS. And we kept on telling them, that is just something in the fringe you should just not be concerned about, and they were ravaged. So each of them are ravaged by over the top services now, and there's really nothing they can do about it.

[01:05:51]
Now let's talk about Alacrity. This is where you come back together again, correct?

SG: Yes.

MD: Yeah.

Founded in 2011.

Yes.

Simon, the idea is not just that you are a normal, vanilla vendor – I'm sorry – normal vanilla source of funds, venture capitalists, is that you have a particular method and approach to the development of those clients that you invest in. What is that approach?

SG: Okay. So Alacrity's background wasn't necessarily driven by venture capital, it was driven by a goal to create a new generation of entrepreneurs amongst our graduate population. So it very much had its birth around the time of the post-banking collapse, prospects for young people were pretty poor, and we looked at a lot of incubators, and there's plenty of them, and they just seemed to do a half-arsed job. And so we thought what these young people need is a formal curriculum of education, not that's done over three weeks or six weeks, it's equivalent to an applied MBA. So it's a fifteen-month programme where they don't learn by other people's experience or case studies, they, their business is their case study, effectively. And one other thing that I would point out is kind of unique, well, it's two things kind of fairly unique about Alacrity. One is it's a charity, it's an educational foundation, and the second thing is, no one's expected to come to the foundation with an idea. They can bring their ideas. What we tend to do is work with the private and public sector and we go out to them and say, what's killing you, what do you need? And I'll tell you what, Richard, that's really quite an insightful exercise. I was in one of the world's largest companies and I met with their C-level board and I said to them, what do you need, what's killing you? And you know what the response was? D'you know what, nobody ever asks us that question. Everybody's always selling us something that they presume we need, no one ever asks us what do we want, what's killing us. And in that case they actually couldn't give me an immediate answer, they said we need to go away and think about that. And, you know, I learnt a long time ago, and again, very much this lesson came from my association with Sir Terry, was always build what the customer needs. Always focus on that customer. You're much better off with a demand driven business than a supply one. You're much better off starting a company you know someone wants to buy the product, versus starting a company where you hope someone wants to buy the product. And sadly, there's graveyards full of companies where people were beguiled by their idea, never listened to the

customer and then when they launched it, and sometimes have raised quite large amounts of money around that launch, suddenly discovered nobody wants this thing.

[01:09:19]

Mike, what's your role?

MD: So I was [laughs], I was just leaving the two-year handcuff situation and there was an opportunity to work with Simon on this emerging process he'd described. He'd gone out to Canada to make it happen over there and he needed someone to basically run it in the UK. So I started with a colleague in the UK and interviewed the first sets of graduates to come on board, and then ran it out of the office space that we're still located in in Newport.

If you can use the analogy, if I can use the analogy of a beach, we have an awful lot of sand in the IT industry in the UK, we've got quite a lot of shingle, we don't have very many big rocks, why?

SG: Er, that's… I think there's two principal reasons, one's private, one's public. In the public, sorry, in the private space there's still difficulty in venture capital access. It's improving no end, but historically it's been very, very difficult. In the case of Ubiquity we had to find our money in North America. We couldn't find a single UK venture capitalist or finance house that could even understand what we were talking about. I mean, d'you remember, Mike, we'd go up to London, talk to these guys and they looked at us and we would, you know, we'd even animated our presentation and Disneyfied it so that we would hope that people could understand what we were talking about. Bear in mind, when we're having these discussions, it's pre-web, worldwide web, but it was the internet and if you don't understand the internet the chances of you understanding SIP are pretty remote. So, venture capital has improved but people can say, well you can raise money, but it's not a one-off event, it's having access to capital from soup to nuts, it's, you know, and that includes access to the public markets, etc, and not getting taken out by foreign companies on the journey. So that's in the private space, in the public space, I'll share with you an observation that I think is legitimate. If you list your company on the stock market in London, the liquidity around your stock is driven by people in the financial markets called

analysts. They look at your company, they write reports and they publish those reports. And those reports very much excite investors, they provide the investors with an education, because to invest you have to have confidence in a stock, to get confidence in a stock you need to be educated about the market and about what the company does. And I've worked in London and I've worked in the New York markets. Trust me, in the New York markets the analysts are meaningful, they're specific, they're super-well honed into their subject matter, and when you read a report from one of these analysts - who, by the way, are analysts focussed on one area: compound semi-conductors, quantum computing, mobile, 5G, Internet of Things, they're not doing them all - and so you read it and they're insightful, they're educational, it instils confidence, which creates transactions, which creates liquidity and creates value in the marketplace. In London, the poor old analyst is expected to do everything from quantum to 5G, and they're not particularly good at it, they don't instil that same confidence, they don't have the same skills to educate the market and accordingly, everyone says if you really want your company to succeed you need to list it on a North American stock market. There is a direct association between that analytical amplification and advocacy that they create and the success of a company.

You've been going nine years, tell me about your successes.

SG: We've got companies who are, well we've had some exits already. We've got, I think the company with the highest valuation is about 400 million, it's one of the ones in Victoria. In the UK we've got companies now who we could sell if we wanted to, but the idea of what we're trying to achieve is to create British companies that stay British, if we can do that. And because they're graduates it takes them a while, a little bit longer to get up and firing on all four cylinders. But we've got a company doing, that's growing 40% a quarter in the contact centre space, got a couple of good cybersecurity companies, we've got one in the hospitality space that's doing rather well. Where we kick out now, what Mike, about four companies a year?

MD: Yeah.

SG: In the UK. But bear in mind, Richard, there are Alacrity centres now in the UK, there's one in Lille in France; there's one in Istanbul; one in Pune, India; one in

Santiago, Chile; there's one in Mexico City; there's obviously, you know, the one that I set up originally with the UK in Victoria in British Columbia. They've had four exits, they started two years ahead of us because it took the government here two years to make up their mind as to whether to support it, whereas in Victoria I gave a presentation to the British Columbia Innovation Councils and the Premier's team and within twelve weeks it was funded and up and running. Here it took me two years and three months to get the funding to get it going.

[01:15:43]

What ownership do the entrepreneurs get?

SG: They get, on graduation they have access to a designated venture capital fund, separate from the foundation, but its only purpose is to fund these graduating companies. They don't have to take the money, obviously, but if they choose to take it, the offer is they get £250,000 of cash and for that they get 40% of the company with a 20% stock option scheme on top of that, and the funders and the foundation. So the foundation gets 10%, because it's spinning the IP that it's created in the fifteen months with the teams into the new code, and obviously the idea there is the charity itself might evergreen in the future as companies exit. And the investors putting in the cash, which is a combination of private and public money, you get the remaining equity in the company. So when they graduate they've got a post-round valuation of half a million pounds.

Right. Do you recycle your graduates? Do they train other people coming on underneath them?

SG: Yes. And we also have, we have a mentoring programme with more than a hundred mentors in it. So, you know, I'd go and see people who are top of their game, and I'd say to them, you know, I'm from the Alacrity Foundation. And the general reaction is, hands on wallets, you know, he wants money. As soon as you say 'foundation' it's like, oh no, you know, he's after a donation. So a good disarming process is to say I'm not here for any money and I don't need any donations. Oh. Everyone relaxes. Talk about the programme, and then I say to them, you know, I'd like your support, what would that look like? I'd like you to donate a day a year to

helping these young people, that's all I want, just a day a year. And that day's not a whole day, it's typically a couple of hours, a morning or an afternoon. I've had people that are leading lights in the industry come down, one guy was chairman of a very large telecom company and he said, I'm actually a bit nervous because I've never done such a thing before. And yet this is the guy who I'd be most scared of having to face in a boardroom because I think he'd bite my head off and insert it where the sun doesn't shine, but he's actually quite nervous. After they've spent the time with these young people, they come running out and in many cases say to me, when can I do it again? That's fantastic. Because it's such a virtuous experience, isn't it, you're helping young people, you're sharing your wisdom with them and your skills and it's a good feeling.

It must be a very good feel. Must be a very good feel for them as well.

SG: Yeah. The answer is always the same, next year, thank you very much. Because you never want to burden them with more than the commitment that you asked for, which is a day a year. And some people, you know, religiously come back year after year and it's one of, you know, one of the things that they really enjoy doing.

MD: And you're right, we do ask some of the cohort that leave and then start their own companies to come back and give their experiences to the new people coming through the door. Because it's all well and good the older brigade telling the new people how wonderful it is and what they're going to experience, but nothing beats someone who says, well I was here exactly one year ago and this is what it's going to be like, and these are the highs, these are the lows, this is what you can expect. There's a lot more expectation and trust brought out from that interaction than there is from when we stand up and say it. Because we clearly want to sell the programme hard to them, but there's nothing better than having someone who's actually just been through it one year ago.

[01:20:04]
SG: We're fairly flexible about who we hire and where they're from, a mixture of everything you can imagine in terms of higher education. I think, would you say, Mike, it's fair to say that the attrition rate's reasonably high?

MD: In the early stages it is, because it's pretty hard going, and we try to make sure they understand it's not a nine to five, this is a be-all, end-all, you know. This is your company and you've got to understand, if you want a nine to five type job, then you need to find something else. Because, although we give them a stipend, we're unusual in that context, each of the students that join us for the period are paid to join the programme, so they're not on their own. But we expect them to really give everything to it, because in the end, if they're going to receive funding, they're responsible to shareholders and, you know, that's a significant commitment by a shareholder to give them £250,000 when they usually haven't got really a revenue stream and they've got a product in sort of its infancy.

SG: The attrition rate's about 30%. That's…

Okay. That shows it's a stiff bit of training, which is good. What's the gender split?

SG: It varies from year to year. It's still the majority male, although, I mean what's this year's cohort, Mike? About 60-40?

MD: Yearly… we don't make any specific selections based on gender, as you might imagine. We try to focus, to encourage women to apply, and we have a specific programme to do that, that, I think you know, it's Women in STEM. And our HR person that deals with that, you know, has specific webinars to encourage people to come, but we don't, we don't select on that. It's just, it's meritocracy. If you can pass the process and impress people, that's all that matters. You've got to work as a team.

And what is the ethnicity? Ethnic background?

SG: Oh, very diverse. Very diverse, as you could imagine.

MD: We accept international students as well, Richard, so it's not just UK natives, residents, we accept people with visas and we have a process to allow them to engage with us and continue with a visa as well.

Well, I did say at the beginning that the Archive is there not only to capture the past, but to inspire the future, and Michael Doyle and Professor Simon Gibson CBE, that was a very inspiring contribution you made to the Archive, and particularly the latter half of it when you were discussing this really vital work with young graduates. Thank you very much for your contributions.

[both together]
You're welcome.

SG: Richard, before we close, I have to share with you one anecdotal story about Terry. When I stepped down from Ubiquity, within nanoseconds, Terry's on the phone. 'Let's do something.' I said, 'Terry, look, you know, I'm really quite tired. I've done three things on the trot, I wouldn't mind just a few months off'. 'No! You don't have time off, you want to get back in the saddle'. And it's like, no, no, no, no, no. And he just would not give up. He said, 'We'll start a fund, we'll call it Wesley Clover' – Wesley, by the way, it derives its name from Terry as a young kid bunking off of Sunday school used to go to a Wesleyan chapel in the valleys and on one Sunday he found a four-leaf clover – this is true because I've seen the four-leaf clover, it's pressed in his old family bible – and so hence Wesley Clover. 'So we'll start this company, we'll call it Wesley Clover, and, you know, we'll fuel it up with enough cash, you know, I'll put 300 million into it and we can go and do some really interesting stuff.' And I was like, 'Terry, it sounds really great, but I really need some time out. I'm not going to make a decision'. And he wouldn't give up, I almost end up, bye Terry, I'm off, and I hang up. D'you remember, Mike? A few days later, flippin' phone's ringing off the hook and it's early in the morning, I answer the phone. 'What's up?' 'You're on the front page of the *FT*.' 'What?' I'm thinking, what's the hell's gone wrong, you know, front page of the *FT*, this article, and of course it's Terry announcing the fund and naming me as the CEO.

[RS laughs]

SG: Oh, flippin' heck. He's quite a character.

[1:24:59 recording ends]