

David Cleevely

Born 1953

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The contents of this life story were archived in 2021, with acknowledgement and thanks, from Wikipedia and from interviews with Peter Cowley published in 2019 on the Invested Investor website at www.investedinvestor.com.

1. Profile



The following profile of David Cleevely was archived from Wikipedia, with acknowledgement and thanks, in January 2021.

David Douglas Cleevely, CBE, FREng, FIET (born September 1953) is a British entrepreneur and international telecoms expert who has built and advised many companies, principally in Cambridge, UK.

Telecommunications

In 1985 Cleevely founded the telecommunications consultancy Analysys which became Analysys Mason, when it was acquired by Datatec in 2004. Whilst at Analysys he made a significant contribution to the theory and practice of calculating Universal Service Obligation costs and was involved with a report to the European Commission on VoIP creating the framework for VoIP within the EU and the identification of The Broadband Gap – where the cost of supply would exceed the price consumers were willing to pay which prompted UK Government policy intervention in 2001–2005 to force increased broadband infrastructure in the UK.

Entrepreneurship

Cleevely's entrepreneurial activities have been focused on the Cambridge area, with Business Weekly describing him as, "Intellectual heavyweight and passionate evangelist for the cluster" and was reported in the Financial Times which noted his

role in founding Cambridge Network, Cambridge Angels and other contributions. He has worked tirelessly to get government to understand what makes Cambridge academia and business tick.

In 1997 Cleevely co-founded Cambridge Network with Hermann Hauser, Alec Broers, Nigel Brown, Fred Hallsworth and Anthony Ross.

In 1998 he co-founded biotech company Abcam plc and was chairman until November 2009.

In 2001 he co-founded and became chairman of Cambridge Wireless (originally Cambridge 3G) with Edward Astle. He later said of the mobile industry, "This is an industry undergoing a revolution. The competitive edge is moving from handsets to platforms, from voice to data, from services to apps. The move of the big internet players into mobile is just the beginning. The future of the industry hinges on how this will play out."

In the same year Cleevely co-founded Cambridge Angels, a group of angel investors who have now invested over £20m into 40 companies in the Cambridge area.

In late 2004 he co-founded the 3g pico base station company, 3WayNetworks, which was sold to Airvana in April 2007. Between 2005 and 2008 he was Chairman of the Communications Research Network at University of Cambridge, part of the Cambridge–MIT Institute.

In 2007 he co-founded and became the Chairman of the spectrum monitoring company CRFS, which has subsequently carried out the first ever UK-wide spectrum monitoring. In 2008 he also became the Chairman of the scanning ion-conductance microscopy company Ionscope.

He funded and became chairman of the Bocca di Lupo restaurant in Soho, London in 2008, and of its subsidiary, Gelupo, in 2011. Bocca di Lupo came top in Time Out London's 50 best restaurants for 2009, was a runner-up in the Observer Food Monthly Awards 2010 and was named by Restaurant Magazine as the 23rd best restaurant in the UK at the National Restaurant Awards 2010. In 2013 he also invested in Cambridge restaurant The Pint Shop.

Cleevely was Chairman of LabTech company OpenIOLabs, and became Non-Executive Director when they were acquired by DeepMatter (formerly Cronin Group) in 2017 and stepped down in May 2019.

Public Policy and Government

Cleevely is an authority on telecommunication policy and has advised numerous governments on policy and innovation frameworks. He advised the Prime Minister and UK Government on the ecommerce@its.best.uk report, and was one of the 8

industry experts that compiled the Communications White Paper which became the Communications Act 2003.

In 2001 he was appointed by the UK government to the Spectrum Management Advisory Group, which became the Ofcom Spectrum Advisory Board, and the IET Communications Policy Panel and was also appointed Advisor to Main Board of DCSA (later the DES ISS) until 2009. He has also appeared before Select committees in both Parliament and in the House of Lords.

In 2009 David Cleevely became the founding chairman for the new Centre for Science and Policy and subsequently Chair of the Advisory Council, stepping down from the role in 2018. January 2015 saw him also join the Digital Economy Council (where he was a member until 2017) and was also on the advisory board for the Oxford Internet Institute from 2012 to 2018.

In 2015, his contribution to the UK Government-backed report Visions of Cambridge 2065 saw him predict dramatic changes in the city over the coming 50 years, such as having more than 1 million residents, two \$100 billion companies and a regional underground system.

In 2017 he wrote the initial terms of reference for the Cambridge and Peterborough Independent Economic Review funded by Cambridge Ahead and the Combined Authority and agreed at the meeting of the Council Authority 28 June 2017. He was Vice Chair and Commissioner for the Cambridge and Peterborough Independent Economic Review until September 2018.

In 2018 he gave the Founding Director's lecture at the University of Cambridge on getting academics and policy makers to work together.

In 2018 he became an advisor to the National Engineering Policy Centre at the Royal Academy of Engineering and subsequently became chair of the Policy Fellowship Working Group.

He was Chair of the Digital Sector Strategy Commission for the Greater Cambridgeshire Greater Peterborough Combined Authority which reported in March 2019.

In September 2019 he became Chair of the Cambridge Autonomous Metro Technical Advisory Committee (CAM TAC) Sep 2019 and in June 2020 co-authored a report for the CAM TAC with Professor John Miles setting out the technical and costing options for the CAM which James Palmer, the Mayor of the Combined Authority, described as "a game changer an exceptional piece of work which gives a clear way forward".

In November 2019 he took over from Ian Shott as Chair of the Royal Academy of Engineering Enterprise Committee.

In March 2020 he was appointed Chair of the Royal Academy of Engineering COVID-19 Triage Group and which issued a report in August 2020 setting out how the RAE made a major contribution to addressing the crisis.

Charitable Work

In 2012 Cleevely joined forces with Hermann Hauser and Jonathan Milner – described as the "three musketeers of the Cambridge technology cluster" - to provide funding to create a Science Centre in Cambridge. He has been Chairman and substantial donor since 2013 and the Cambridge Science Centre reported over 300,000 cumulative visitors in 2019.

In 2013 he joined the board of Raspberry Pi (Trading) Ltd. and in 2014 he became Chairman (unremunerated) of the Raspberry Pi Foundation and of Raspberry Pi Trading. He stepped down as Chair of Raspberry Pi Trading in February 2019.

Education

After gaining a BSc in Cybernetics and Instrument Physics with Mathematics from the University of Reading, Cleevely gained a PhD in Telecommunications and Economic Development from Cambridge University.

Awards and honours

David Cleevely was appointed Commander of the Order of the British Empire (CBE) in the 2013 New Year Honours for services to technology and innovation.

He is a Fellow of the Royal Academy of Engineering, and has held an Industrial Fellowship at the University of Cambridge Computer Laboratory. He is also a Fellow of the Institute of Engineering and Technology, where he gave the IEE Pinkerton Lecture, 'Seizing the Moment: The Far Reaching Effects of Broadband on Economy and Society' in November 2002, and the 41st IEE Appleton Lecture 'Is there a future for research in telecommunications?' in January 2006 and the 46th IET Appleton Lecture 'What is the future for communications? What does it mean for the UK?' in January 2011.

In June 2013, Cleevely became a Fellow Commoner of Queens' College, Cambridge. and in October 2015 became an Honorary Fellow of Trinity Hall, Cambridge.

In November 2018 Cleevely won Barclays "Entrepreneurs' Icon of the Year".

2. Peter Cowley Interviews 2019



The following sections of David Cleevely's life story were archived in 2021, with acknowledgement and thanks, from interviews with Peter Cowley published in 2019 on the Invested Investor website at www.investedinvestor.com.

Peter Cowley: Welcome again to another Invested Investor podcast. Today we have David Cleevely in his garden here. It's awesome and beautiful and the birds are singing in the background. So David, tell us a bit about your background.

David Cleevely: Well, I was originally born in Germany where my parents were over on the RAF base. Came back to England when I was about two or so. Grew up in southwest London, Went to the local grammar school. Did a whole load of peculiar things like setting off rockets and stuff that you can't do these days.

3. Post Office Telecommunications

I was sponsored at university, by what was then called Post Office Telecommunications. Learnt an awful lot about how telecoms networks work by actually doing some soldering and putting on wellies and climbing down into manholes, and all of that kind of stuff. Did a degree in Cybernetics Instrument Physics and Mathematics at Reading. Went to work for the Long Range Studies Division at Post Office Telecoms in Cambridge.

Peter Cowley: That long range as in distance within mast distance?

David Cleevely: No, long range as in what was going to happen over the next 20, 30 years.

Peter Cowley: Oh. Really interesting.

David Cleevely: Sadly, all of which is now in the past. So the stuff I worked on at the Long Range Studies Division was, what happens if you had these computers that can sit on your desk and you could actually type things with them and communicate with them and do calculations.

Peter Cowley: So, this was the mid, late seventies?

David Cleevely: Yeah, this is kind of, yeah, '76, '78. There were these things called Citizens Band radios, and I did a report saying there's this pent up demand for the idea that people could carry around devices that will enable them to talk to anybody without having to be connected to wires. It had the security classification, "The existence of this report is not to be acknowledged to anybody." I think in retrospect that was because somebody senior in Post Office Telecoms wanted to claim the credit for it. But, there we go. That's it.

So I cut my teeth on that stuff. It was looking ahead, it was a monopoly, telecommunications were a monopoly. So we looked at models of what would happen when competition was introduced. That was under a Labour government before Thatcher came in and began all that process. So, it taught me how to think ahead.

There was just one thing, if we've got time for me to tell you. I was asked to look at the prices of semiconductors and memory devices and to try and forecast how we are going to move forward. It was part of a thing called a Delphi panel. Delphi panel is where you get a group of experts together and they all put their views in and then they take the average and then they go back to the outliers and say, "Well, this is what we and other experts think. What do you think? Would you move your estimates?"

Moore had just come out with his book at that point. So I read Moore's book and I did a bit of investigation and I got some 5-Cycle log paper. So, it's five decades of, five orders of magnitude and I drew some lines on it and submitted it.

And the guy came up from London. First of all, he was a bit surprised because I think I must have been 23 at the time, I was definitely in short trousers. And he

came to see me after he got over the fact that I looked like I was too young to be doing this kind of stuff. He said, "Look, all the experts think that these prices will move by three to 8% per year. And you have these prices going down at 30, 40, 50, 60% a year. Not just one year, they go on and on and on." He said, "It's incredible. Do you realise you could store a whole A4 page ..." And over that he meant 10k bytes for one 10th of a penny. It's incredible. "So, explain the Delphi panel thing. So you're now going to have to move your estimate." And I said, "No." He said, "Well, I'm going to have to ask you to leave the Delphi panel." So I was booted off. So, the whole of the digital switching architecture of the United Kingdom was based on a bunch of experts who thought that electronics and memory devices would decrease in price around about 3% to 8% per year.

Peter Cowley: Rather than doubling or whatever it is every 18 months.

David Cleevely: And it taught me a very good lesson. One was, I was coming at this with no preconceptions, being in my early twenties. And so, trust people in their early twenties because they've got no preconceptions. They've seen what is going on. They can extrapolate from it.

Peter Cowley: Yeah.

David Cleevely: They may not have the business savvy. I mean, I didn't have any of the economics business savvy as you can tell. I mean, telling somebody much more senior than me that they were wrong and I wasn't going to cooperate.

Peter Cowley: Yes, exactly.

David Cleevely: And I left and went and did a PhD at Cambridge after that. But that was okay, that really taught me a lesson about how the older you get, the more hidebound you become about what you think is realistic or how the future is going to work out.

Do you want to know how the future is going to work out, don't ask somebody in their 50s. You can't ask somebody in their twenties, they might come up with some crack pot things. But if you're in your 50s and they're in their 20s you can probably interpret it better as long as you've got an open mind.

4. Telecommunications for Development

Peter Cowley: And then you moved on to your PhD. So you left the Post Office, came here to Cambridge.

David Cleevely: Yeah, I was interested in developing countries particularly. Again, this is incredible to think, at that point most aid was focused on big irrigation systems and dams. That kind of stuff. Nobody thought telecommunications was important and everybody thought that phones were a luxury. So, if you're a developing country, you shouldn't have phones, you should have sprinkler systems.

Peter Cowley: Water and food.

David Cleevely: Yeah, yeah. Blah, blah, blah. Right. Well I mean it is incredible to think now that that's what the attitude was. So my PhD was part of changing that attitude. It was called Regional Structure and Telecommunications Demand: A case study of Kenya.

So I did a lot of fieldwork in Kenya. I did some spatial mapping. I develop some theories about regional structure and how it worked and changed World Bank policy. Because I did some stuff for World Bank as an economist on a couple of missions, one to Kenyan and one to Algeria.

And shifted World Bank policy away from just investing in capital cities and also thinking of telecommunications as something that, if you had access to it then actually the economy could function better. And that meant also residential people having access to telecoms.

Peter Cowley: But this was copper and fixed line, wasn't it? Not mobile.

David Cleevely: Oh yeah. I mean, that's way back. Yeah, it was all copper stuff. So this is early eighties. I mean, mobile stuff had just started. I got very excited at the end when I was at Long Range Studies Division about that mobile telecommunications.

And I'd actually been in touch with Marty Cooper at the time, because he was the guy who started to talk about cells and how they were going to actually make mobile communications the architecture of the network, actually make it happen.

And I kicked off a project on that in fact, did some work on it. But the full scale of what that revolution was going to happen, it was kind of in the air. You knew two things. You knew this data stuff was going to make a big difference, and you knew that the mobile stuff is going to make it a big difference.

Because I was doing this thing on semiconductors and I knew which way they were going, I was pulled down to London, I think it must have been '77, '78, early '78 probably to get a presentation from a mad professor at UCL who wanted some money from us and from this very strange American agency associated with defence, to do this weird thing called packet switching, which they were going to do by satellite across the Atlantic.

And then we were going to play with it. And they wanted to try and do voice and video and various other things and experiment. And my head of division turned to me, and gave him good credit for this because " he's an interesting chap. And he said to me, David, should we fund this?" And I said, "Jim, we should fund this because someday all communications will be by packet."

And the reason why I said it was, and having done the study about where the electronics and memory costs were going, it just seemed to me that the economies of scope and scale that you got when you went down that digital route, and the ability that they then had.

I had seen the architecture, this is the first time I'd ever actually seen the internet and it wasn't really quite pure TCP IP at that point, but it was getting close. And then I went, "Okay, yeah, I've got this. This just unlocks everything. You can just churn this stuff out and plug and play." That's going to be any circuit switched system by a country mile, which is why I said it.

Peter Cowley: Yeah, but you're obviously involved with mobile telecoms AMPS now in developing worlds. So what happened straight after Uni then? Did you go into a corporate role?

David Cleevely: Yeah, well I'd left Long Range Studies Division to do my PhD. So, I then went down to work at the Economist Intelligence Unit, or as one American client I talked to said, "The communist what?"

5. Economist Intelligence Unit

David Cleevely: The Economist Intelligence Unit is part of the Economist Newspaper Group. And they were set up because people were asking economists for lots of data. So they started to do a little bit of consultancy and they publish things. And they had a little consultancy doing information communication technology, and I joined them. Then I got promoted to be the divisional director for telecoms, which was a bit of a massive set of responsibility given how little experience I had.

I made some money for them, I made lots some money, I acquired clients. And I, basically after a couple of years, I realised that I could probably do this myself. I wanted to do my own thing and because The Cambridge Phenomenon book had been published and got a lot of press, I thought, "Well, I'm fed up with the community. I'm going to set up my thing in Cambridge and I'm going to do it on the science part because that's the way in which we'll have queued offs and cache."

6. Analysys

So I shared some premises with a chap called Mike Gardner, now sadly passed away, who had a company called Out Communications, and kicked off my consultancy company, Analysys, in '85.

Peter Cowley: All right, okay.

David Cleevely: First of all, most of it had got off the ground by doing contracts for the beloved European Commission, that was because at the Economist Intelligence Unit, I'd done a bit of work for the European Commission and there were people there who liked what I did. So when I went somewhere else, they started to give me some bits of work.

But we built up commercial stuff with BT and various others. And at the end of the 1980s, beginning of the 1990s, we got a big breakthrough doing some modelling work about the future of telecoms investment in Europe, which was for 1990 to 2010. So it was playing on a lot of my modelling skills, a lot of the stuff I'd done at Long Range Studies Division.

And that turned out to be quite an important piece of work, not only because of the ground-breaking nature of it, but also because it got us in front of all the telecom operators in Europe, who at that point were all struggling with the notion of, what happens with competition.

And then began a long run during the 1990s, Analysys was becoming the place to go to if you wanted to understand about the interaction between technology, economics and business in telecommunications. And as one M&A person said, there wasn't a deal in Europe going on at the end of the 1990s that Analysys wasn't involved in on one side or the other.

Peter Cowley: So, were you competing with, KPMG specialist department?

David Cleevely: Yeah, we could just knock them out the way. I mean, the thing is that there were specialists departments, but really, they had nothing like the depth of knowledge that we had.

And one of the things that I did at Analysys, and probably I could have made far more money than I ever made even with Abcam or anything else if I'd really taken this one seriously, is I built a whole series of web based knowledge systems to underpin the consultancy.

So before anybody else was doing this, we had a CRM system that we built ourselves. We were managing documents and working papers. And so where anybody was in the world for Analysys, and we were operating in loads of countries. We had offices in Washington and Kuala Lumpur and Paris and Munich, and so on. Wherever they were in the world, we could access all the central database and this was way ahead of anything anybody else could do. And all projects that we'd ever done, we're always available to all the consultants and all the contacts and everything else.

So we were significantly more efficient and had greater depth of knowledge about telecoms than anybody else. What I didn't understand was, towards the end of the 1990s, as this first internet bubble took off, how many charlatans would then pile in and how the valuations will go up through the roof. How everything would basically be set fair for falling apart. I really, I just didn't get it.

Peter Cowley: How did that affect you within Analysys and your consultancy?

David Cleevely: Yeah, well, first of all, I should have accepted the offer.

Peter Cowley: Probably sell out at some point.

David Cleevely: Probably sell out for at least 70% more than I sold out for in 2004. I should have absolutely done that because I would've got four years of my life back and they turned out of course, after a collapse like that, turns out to be three or four years, where your life is pretty, stressful. Got to get the company through those things.

Basically it affected us by people doing crazy things, investors putting a lot of pressure on us to drive up valuations, which we were not prepared to do.

Peter Cowley: Did you have any external investors at that point?

David Cleevely: No, no, no. We were doing this, so, somebody who was bidding for a telecoms licence in India for example

Peter Cowley: A higher number, right. Okay, yeah.

David Cleevely: And you go, "Well, actually that's how much it's worth." And then they lost it and then they come back and blame you because you didn't put a high enough valuation on it. And we'd say to them, "Look, if we put a high enough valuation on it for you to have won that, you'd be bankrupt."

Peter Cowley: Yes.

David Cleevely: "You know, we saved you. So, we were the rational people in the game, but when everybody's mad, the rational person suffers.

Anyway, what happened was, we were the last people standing effectively cause everybody else got swept away, which enabled us to survive and enabled me then to actually finally sell up to the company who had offered a lot more money in 2000, and sell it to them in 2004.

Peter Cowley: Excellent. And how big were you at this point, say people or revenue or something?

David Cleevely: Oh, 13, 14 million pounds. About 130 people.

Peter Cowley: You were still based in Cambridge and all over the world, yeah?

David Cleevely: Cambridge, London, Glasgow, Milan, Madrid, Munich. Those are all the ones that begin with M.

Peter Cowley: And obviously, entrepreneurs and to some extent the people who listen to this podcast, like the concept of being able to exit, as we all know. Let's talk through that.

David Cleevely: Well, let's talk about the exit. The point about that was, that in 2000 I hadn't really prepared for exit. It was dependent on me. I managed to do some sales of some big consultancy projects after that collapse, as everybody else was going out of business. But that really made me very concerned because if it was dependent on me doing the sales and we had a problem.

We had these systems in place which enabled everybody to operate things. So, basically I began a programme of three years of devolving stuff and making myself entirely replaceable. So by 2004, when it was time to step away, I actually could leave the company with cash in my pocket. Which is something that you very rarely do, if ever, with a consultancy company.

Peter Cowley: There were 130 people. So, I can imagine you had a set of lieutenants that could step up, presumably.

David Cleevely: Sure, yeah. Well, which I did. Of course lieutenants is one way to put it. You know when you go around and ask people how much percentage of the company they would want and you end up with a number that's about 350 or 400% of the company when you add everybody share up excluding your own, you can see the tensions arise in that second.

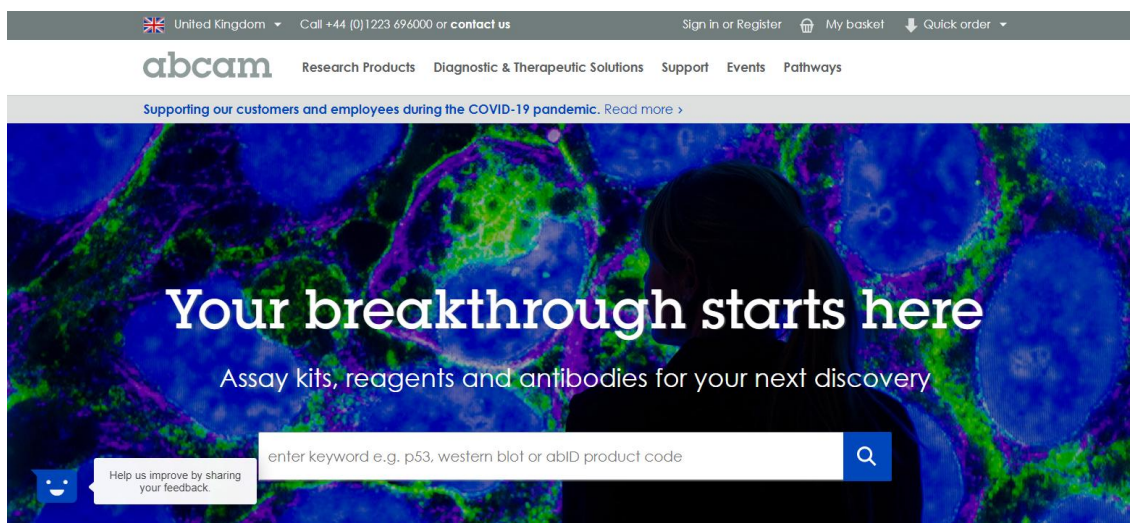
Peter Cowley: Did you proactively sell or reactively? I know there's when you did the exit, did they come back, did you keep in touch with them?

David Cleevely: No, we did ... It was basically the core strategy of the company, after the 2001 stuff, I'm going to set this up for sale, right? I know I'm going to get the team, so they're all incentivised to do that, which meant giving them some equity. I'm going to get the thing making profit. I'm going to make sure the turnover goes up. We will be set fair. That's how we're going to do it. And I will step away. So my promise was to do that.

Peter Cowley: Okay, fine. And you handed over completely in 04'?

David Cleevely: Yeah.

7. Abcam



Front page of the Abcam website in 2021.

Peter Cowley: And you went on to a very interesting part of the rest of your life with huge amounts of different directions. Let's just talk a bit about the other company helped set up of course, Abcam. That is your other major company that you've built, isn't it?

David Cleevely: Yes.

Peter Cowley: So, we've talked to Jonathan Milner, so we've got some of the story, but can we just spend three or four minutes on how that went for you?

David Cleevely: Yeah. Well, I have an interesting saying, as Pasteur says, "Chance favours the prepared mind." Jonathan and I had that conversation over dinner, which was as a result of our wives knowing each other because they were working together.

And the conversation was between somebody who had developed a whole load of web technology and run a business, and somebody who was a researcher in antibodies and was fed up with the quality of antibodies. He knew how antibodies got produced, I didn't. I understood from talking to him what the economics of antibodies were, and I couldn't believe the 20 Pound note.

Peter Cowley: Margin, exactly.

David Cleevely: A 20 Pound note was left on the pavement. I mean, I remember saying to him, "There must be something wrong here. You can't ship these out of the laboratory." And he said, "Oh no, you can seal it in an envelope and they'll survive two, three, four days in the post." I went, "Bloody hell, we've got a business."

Peter Cowley: Right. So, you were a co-founder.

David Cleevely: Yeah.

Peter Cowley: You put money in, some money in.

David Cleevely: Oh, quite a lot, yeah. I mean, Abcam hadn't had a trouble-free history. When Abcam nearly went bust in 2001 again, when all this crisis was developing. No 2000, I predated some of these other bits and pieces.

I put £420,000 of my pension fund into Abcam, which was the majority of my pension fund. So I bet the majority of my pension on that one company.

Peter Cowley: Did you have an executive role? Probably not because still running Analysys at this point, you haven't handed over?

David Cleevely: You can see from where we're sitting, listeners, you won't be able to see it, but just through there, there's a gazebo which will be forever known as the Abcam mentoring gazebo. And every Saturday for three or four hours, I would sit with Jonathan, well, certainly in the summer when the weather was like this, we'd sit there on a Saturday morning and I'll talk him through how the company was going and what to do. So, I was dedicating, even when I was doing Analysys, I was dedicating several hours a week to doing it. So yeah, quite a lot.

Peter Cowley: And you stayed on the board through the flotation?

David Cleevely: Yeah, I was chairman. I took it through flotation and then for about three years through flotation after that, I stepped down. I mean, the company was changing. There's need for growth, there's all sorts of stuff needed to happen and I think you need to recognise how that change has happened.

I mean, Jonathan himself stepped down as chief exec a little while later and a new chairman, new chief exec in there, and you know, companies change.

Peter Cowley: It's market cap is over two billion at the, moment?

David Cleevely: Yeah, that's right.



Abcam's £46m headquarters building in Cambridge.

Peter Cowley: Are these your two main entrepreneurial journeys, do you think? Or have you got any others to talk about now before we move onto investing?

David Cleevly: Entrepreneurial journey as well. I mean, I think really the focus that I've got at the moment where I've got a number of companies and I'm nurturing through, I'm very, very closely involved. I mean, I've taken the view a bit like you Peter, with the Invested Investor.

It's all very well having a punt through EIS and getting some tax relief. Chances of anything good happening with that are pretty remote. Unless you know the other investors and you know other people are taking an interest.

Now the only stuff I'm doing now is where I would describe myself as having an almost half executive role and stuff where I'm coaching, mentoring, I'm deeply involved to the extent that, one of our mutual companies' controllers, I was up in Thetford couple of days ago walking through the product plan with Simon for a new product. And literally going through line by line what the features were, what the BOM cost was and what we could price it at and how that pricing would then be placed in the market. That's fairly detailed stuff but strong mentoring.

8. Ministry of Defence

Peter Cowley: And you worked for the MOD in quite a senior role, didn't you? While you were still at Analysys?

David Cleevely: My name had got around a little bit in a very oddly ... People from the MOD started turning up at conferences I was speaking at and then quietly having words with me over coffee, trying to persuade me to join the board that was responsible for all of the IT and communications for defence. I had no idea what they were on about really. It was surreal, I think is the way to describe it.



An entrance to the Corsham tunnels.



An interior view of the Corsham tunnels.

It included a trip down through the Box Tunnel works. There's two and a half million square-

Peter Cowley: Corsham, is that? Yeah, in Wiltshire.

David Cleevely: Corsham. It's two and a half million square feet of tunnels under there-

Peter Cowley: Storage?

David Cleevely: I got a guided tour. Well, in the Second World War, it was used for storing ammunitions. It had enough ammunitions down there to supply the war for all the allies for 40 days. So, it gives you some idea about how big an area this was and the railway marshalling yards under the tunnel and all this kind of stuff.

Anyway, they pulled out all the stops to persuade me to join this board. And in the end I did. I thought, "I can't stand it. I don't want any more brigadiers turning up at my speeches and trying to persuade me."

Anyway, it was a very interesting experience and I stayed on that board for its existence. And by the end of it, me and another chap Will Roger, were the longest serving members of that board and we're kind of its memory and experience and expertise.

Peter Cowley: What was the remit?

David Cleevely: Well, we were just looking at what their plans were and how they were thinking about investing in projects. The budget was 1.7 billion, something like that. It's a fairly, sizeable budget and we were just there to make comments and make suggestions.

I'll give you an example again. It goes back to the Long Range Studies Division, that really was a formative experience. If you're thinking about defence, you are thinking of 15, 20, 25, 30 years and you've got to think about that kind of long-term way. So, when you're then engaging with contractors who were supplying the USA with telecommunication services, they're not thinking in those terms, but you need to sign contracts that might go out that distance. You have to frame the conversation in a particular way. And my contribution to that was to suggest to them that they went back to their contractors and said, "What happens if our demand for bandwidth is 100 times what we say it is?" Just imagine that we've told you this is our future demand for communications. Now just multiply it by a hundred and let's have a discussion about what that will be, right.

And the result was that we changed all the contractual arrangements because one of the things that you get with the public sector is you do a contract with somebody, it's not the cost of the contract that is important, it's what's the marginal cost of change. And so what we did was we then changed the marginal cost to change. I did a few other bits and pieces but, getting to do a price list of actually what were the services and bits of kit that we were offering and could you actually get more of a market internally in the MOD for doing these kinds of things. That was interesting time, I learned an awful lot.

Peter Cowley: Frustrating at times?

David Cleevely: Oh yeah, unbelievably frustrating. Unbelievably frustrating. You could say things and you'd no idea whether they ever have any impact or not. But it was, for me, I don't know whether I made a difference to defence and I did make things a bit better. But for me, I learned an awful lot about how government works and how in particular, large contracts and large organisations work.

We oversaw the reduction in size of that part of MOD from a head count of about 5,400 to a headcount of 1,800 ,with a huge increase in the services and equipment that was deployed. So that was over an eight year period. I'd never been part of a programme like that and seeing how that operated. And the rebuilding of Corsham, which we had to do as well, complete rebuilding of the site.

And that for me was a great learning experience about how large entities, organisations, can't say corporations, how large organisations need to deal with things. And the difference in dynamic between that and when you've got a new start-up and you've just got four people.

Peter Cowley: Yes, yes.

9. Investing

Peter Cowley: So, let's just move onto investing. So, you and Robert Sansom, who lives across the road here.

David Cleevely: Yep.

Peter Cowley: Set up the Cambridge Angels in 2001. I'm now Chair of that and I've been a member for about 10 years, but of course it goes back about 17 years. So tell me about why you did that? I mean, it's a crazy thing to do.

David Cleevely: Well, Robert arrived across the road. Literally, I walk out of my drive and walk into his. So he arrived and he said, "Is there an angel network, I haven't found one?" And I said, "No, there isn't." He said, "Let's have lunch." So we had lunch in Galleria on Bridge Street, sadly no longer with us I think, and we had a chat about it and I just thought, well, I'd already set up Cambridge Network by that point and that was an interesting piece of social infrastructure. The older I get the more interested I get in those sorts of things and I thought, "Well, this sounds like a good idea. There's a load of people around who are going to be making money and doing things, I've got this exit from Analysis, let's".

Peter Cowley: But you hadn't exited at that point?

David Cleevely: "Well, I will have an exit from Analysis. I will have enough money to do this. I'm already making a bit of money out of Analysis." So, I could afford, yes, pin money I could afford to play around with. So let's try and do this. Abcam at that point was three years old I suppose. "It's an interesting space, let's see what we can do." And then we quickly assembled a few people.

Peter Cowley: I've seen the original email. There were 15 actually.

David Cleevely: Yeah, yeah, it was very quick. And one of the most important things about that, Peter, was that it was a bit like what I'd done with Cambridge Network and when I mentioned Cambridge Network, is it put people in touch with each other who really ought to be in touch with each other, but for various reasons weren't necessarily going to meet.

Peter Cowley: Yes.

David Cleevely: So, the way that Cambridge Angels does things, you know with the dinners and so on, forms a great piece of social engineering about forming a group and then provides the ability to learn, because I'd learned, in the first five years at Cambridge Angels I'd learnt so much, so much.

Peter Cowley: In fact, Robert Sansom, who we will interview at some point, had been angel investing in Pittsburgh for some years before that, so he brought knowledge into the group.

David Cleevely: Yeah, Robert knew more about this and that's why he came to me and he said, "Well, where's the angel investing?"

Peter Cowley: Because he knew you do the networks here?

David Cleevely: Because he knew all that this stuff was like.

Peter Cowley: Yeah.

David Cleevely: And so, it's a great illustration of how you need people coming in from other environments in places in order to stimulate you to do things.

Peter Cowley: He'd been at Uni here, but he'd disappeared for twenty odd years.

David Cleevely: Yeah, yeah. He still has this slightly American accent.

Peter Cowley: Right, and so you started angel investing. And do you know how many angel investments you've made?

David Cleevely: Probably about 50 or 60, I would guess.

Peter Cowley: Okay. And what have you learnt from those?

David Cleevely: That the really rubbish ones are the ones where you don't do the due diligence, where you do it on emotion and you just stick a little bit of money in and then it starts to get rather more because you have to follow on and you don't want to admit to yourself that it's going to end in tears.

Peter Cowley: But there will be some that were successful where you did that, I would think as well?

David Cleevely: Well, I liken this to, if I can get a bit mathematical for a moment ... to a Markovian process. So, Markovian process is one where each step of the process is basically you roll the dice, but you can decide which direction you're going to go. If you roll the dice, you roll a six-sided dice, you can choose one of six directions to go and then you just watch where the point is moving. So, it'll cover the entire surface at some point but it may cover some bits of the surface more than others.

Let's take a better example of that. So, Markovian process where you've got a company that's growing. So every step of the way and every month it's either going to go up or it's going to go down. The bias is that it's going to go up, but occasionally you might throw three ones in row, in which case the company goes bust.

Peter Cowley: Yes.

David Cleevely: Now, the company might have a really good idea, it might be actually on a trajectory that would go up through the ceiling, but because it threw those three ones in a row - and it's recognising that that was just bad luck versus there is something systematically wrong with what you're doing - that really is the big dividing line about investments and investments.

Peter Cowley: And have you worked that out yet?

David Cleevely: Well, I've learned to listen to the little voice inside rather more than I used to and that's steered me away from some things and steered me into the right decisions on others. I've also learnt that sometimes you need to double up. So Newell is a good example of doubling up. Newell was not going to work and was

not going to work big time unless it changed tack and got a new owner - and it certainly wasn't going to work if we put VC money in, and for the original investors who put VC money in we would have been completely wiped out. But in order to get it to that exit, we had to pony up a significant amount of money at a fairly high risk and spin the wheel to see whether it was going to work or not.

Peter Cowley: And as it turns out replaced the founder with a new CEO.

David Cleevely: And do all sorts of stuff like that. Now, I wouldn't have been able to do that. I mean, they wanted me to be Chairman, I was too busy so I was a Director, but I still had quite a lot of responsibility for all of that. We would not have been able to do that, I think, if it weren't for a couple of things.

Firstly, I had learnt so much from Cambridge Angels and previous experience. How to read the rooms, understand what was going on. And the other one was, the people on the Board, I'd already worked with most of them. I already knew them. So, I could read stuff better, and we knew how to work together, that turned out to be fine. Of course, in a parallel universe, quite close to ours, it didn't.

Peter Cowley: Yes.

David Cleevely: But there you go.

Peter Cowley: Yes, okay. So do you think you're cash on cash up yet?

David Cleevely: Excluding Abcam, clearly. You know, the amount you've invested now is actually replaced, and you've got a portfolio of companies which will go onto great things.

Peter Cowley: Oh no, that's because I've now piled in with an embarrassingly large amount of money invested.

David Cleevely: In one particular company?

Peter Cowley: In those angel investments.

David Cleevely: I don't know how much I made from those things. I mean, if I just do a quick tot up of three-way networks which was a flip, a very lucky flip but we did it, I've got more than half of the cash that, If x is the amount that I've currently got invested, I've probably got about $1/2 x$ so far out.

Peter Cowley: Okay, yeah. So you're not there yet? Cash on cash, not yet, but you've got hopefully some great opportunities.

David Cleevely: Oh, I've got one that will just dwarf Abcam.

Peter Cowley: Oh, really? Okay.

David Cleevely: Yeah.

Peter Cowley: Oh, right. And why am I not in that?

David Cleevely: Don't tell me you ... cough.

Peter Cowley: That cough was on purpose and will be left in.

David Cleevely: The thing about investing, you know, the number of times I've told people I've got this wonderful slam dunk...

Peter Cowley: Yeah, I know, I've followed you into some things and they haven't worked.

David Cleevely: and it just doesn't turn out. I mean, the thing here is that if you've got the experience. If we take Einscope for example, which you know about-

Peter Cowley: Yeah.

David Cleevely: ... we made a number of slips on the engineering on Einscope which made it go backwards rather than forwards and it was absorbing so much money and it was one of those where I just wanted to get the investors' money back and I was head down, not thinking too broadly, and then brought in a new team and the new team went, "Actually, you know what? We're about connecting things in the lab." Having done that, we were able to exit to DeepMatter.

Peter Cowley: Well, first, of all you swapped from hardware to software, hardware to software, that was a major.

David Cleevely: There's a bit of hardware in labs. You need to be able to connect to bits of kit so you need hardware as well as software. We're still selling the Einscope stuff and the Einscope stuff actually still makes the most profit actually. It's a nice business. But the issue was that with new management, fresh perspective, did something different, made a transition. We were then bought by what was then Cronan plc, now it's called DeepMatter and I'm on the Board of that. That's a great company on AIM and I did a deal in which as long as the share price crosses a certain threshold, the investors who invested in the original company will at least get their money back.

Peter Cowley: Yeah.

David Cleevely: So, you know, it might not be a spectacular multiple, but as far as I'm concerned when I had a very poor hand, I basically am going to deliver people their money back which is. as far as I'm concerned, I feel a strong obligation to do that if I possibly can.

Peter Cowley: Yeah, so if you're on the Board or Chair specifically?

David Cleevely: Yeah, yeah, you know you feel the weight of that responsibility. You really do.

10. Restaurants

Peter Cowley: So, let's move on to some other areas. So you're more over-committed I think that I am!

David Cleevely: Are you going to move into the restaurant business, yeah?

Peter Cowley: Oh, yeah, The Pint Shop and the other one, the one in London.

David Cleevely: Bocca di Lupo.

Peter Cowley: So, you, like me, because of Cambridge are mainly B2B, but you do a bit of B2C, like the one your son runs, Camuta's obviously a B2C is that right? And let's talk about restaurants. The Pint Shop, was that the first one?



David Cleevely: No, Bocca di Lupo was the first. And that was back in 2006-ish, my nephew started to talk to me about setting up a restaurant doing various things. We looked at different models, including a chain of Mexican restaurants, we did the business model on that. It's far too risky, far too risky. But we set up Bocca di Lupo, and I invested in that on the basis of the menu that he gave me. And the menu was revolutionary at the time. It was broken up, different regions, different kinds of food and small plates and large plates, which is now quite common in a lot of restaurants. Then absolutely, nobody was doing it. And I looked at this, and I thought, "Well, I would very much like to eat some of this food! Look at that - I could pick from there, pick from there, pick from there." It's proper Italian, not three courses, you know, the standard thing we have to eat everything on the plate. No, just put the plates in the middle and everybody share and take what they like.

It turned out into a rip-roaring success and then we opened the gelateria across the way, which is Gelupo, which in 2012 for the Olympics, Time compiled a list of a thousand things you should do in London and going to Gelupo was No.1. It is the best gelato in the United Kingdom.

And that took a bit of money, absorbed a bit of money out of Bocca, but we were still kind of a bit heady with all of this stuff because restaurants don't usually make

money and so you don't really know what to do at this point, and then of course we did an absolutely catastrophic thing, which was to rent the huge premises on Cambridge Circus.



Gelupo.

Peter Cowley: On Cambridge Circus. I went to that restaurant. I really enjoyed it and was really disappointed.

David Cleevely: Of course, you would.

Peter Cowley:... it failed.

David Cleevely: Oh, no, no, no. I mean, the food was fantastic. It was absolutely brilliant but in the restaurant business it's about passing trade, it's about reputation, it's about your place in the market, it's about the number of covers that you've got in the place, how efficient you are, what your overheads are and all those other bits and pieces and the last straw when we were just kind of plodding on trying to make the whole thing work, then the business rates nearly doubled. And you know, just forget it. You're just out of there. The promised point of actually crossing the line to be able to start to make some money out of it just moved so far into the future it just wasn't worth it. We closed it.

Peter Cowley: So, you're down to two?

David Cleevely: Yeah, that's right. And I can safely say that Bocca di Lupo is doing very well indeed thank you very much.

Peter Cowley: And then of course you get a knock on the door and some guys from Cambridge.

David Cleevely: Yeah. I was maybe recommended because I'd been involved in Bocca and so the due diligence there was, okay, if you're interested in this stuff come round and bring some food and booze and talk us through how it's going to work, because I'd learned from Jacob, you know, the thing about it is the concept is about the food and how you present it and how you spin the story, the narrative and so on.

Peter Cowley: And?

David Cleevely: The Pint Shop has been fantastically successful in Cambridge, but less so in Oxford. The premises weren't really the ideal ones to choose. We've got the third one just opened in Birmingham. We will now see the roll of the dice, and you've got to hope that you get at least a three or a four.



The Pint Shop.

11. Networks

Peter Cowley: Yes, okay. So let's just go back to networks. So you set up Cambridge Angels, which is a small network, but much bigger is Cambridge Network, Cambridge Wireless, Cambridge Ahead.

David Cleevely: Yes.

Peter Cowley: You have a soft spot do you for setting up institutions which are going to help ecosystems. Would that be fair to say?

David Cleevely: Well, yeah. The whole of my life has been dominated by serendipity. I remember doing a project before university. And I actually put a little paragraph in the project about serendipity, and how it just has made my entire life. The reason why I started on all of this stuff was I was walking down the school corridor in a break, and they were short of somebody to go in and hear a pitch by somebody from Post Office Telecommunications about sponsorship at university.

Peter Cowley: So, you got dragged into it?

David Cleevely: Dragged into it, and my entire career has followed from what was a 30-second conversation with the careers master. And you think back on that and my great conversation with Jonathan. Had I not been sitting with Jonathan at that dinner, and interested in him, finding out what he wanted to do, and then understanding how the business model worked, Abcam wouldn't have been formed. Well, it might have been, but that's another set of parallel universes that I don't know about.

It's always occurred to me. I worked with people at Analysis, and then they came back to me and went through a network which we sold to an American company that wanted to be floating on NASDAQ. All, of those things resulted in these chance encounters.

Peter Cowley: Yes.

David Cleevely: In fact, I suggested to the impulse programme, the Maxwell Centre, that chance encounters make great ideas possible, or something I've read about. I suggested that to Alexander.

Peter Cowley: Talk to, you give.

David Cleevely: Well, as their slogan. As their by-line. Because that, for me, summarises this stuff. Just go meet people. I've got 11-12,000 people on this phone and I can't keep in contact with everybody. But it's the links that then just enable you to do things.

Peter Cowley: But you've got to make your own luck. You've got to make your own connections.

David Cleevely: There's a wonderful passage, which I quoted someone recently. It's in *Pride & Prejudice*, and it's where Elizabeth Bennett and Darcy have a conversation, and Darcy says, "Well, I'm basically a very shy person. I'm not very

good at conversation." And Elizabeth says, "Well, I regard myself as not a good piano player. But I always put that down to the fact that I don't practise enough."

Peter Cowley: Haha. Clever.

David Cleevely: I paraphrased. Austen does it much more elegantly than that.

12. Centre for Science and Policy



Front page of Centre for Science and Policy website, 2021.

Peter Cowley: Good, okay. And of course, Centre for Science and Policy, that's a fatefully connecting government and academia, isn't it?

David Cleevely: That is kind of the distillation of everything I've learned about networking. Being encapsulated in a single organisation. So, they've been trying to set up this thing, which was a success, thing called the Cambridge University Government Programme. So, they've not found the right person. And they've been having grand ideas about setting up institutes and so on. And so, they phoned me up, and I had a chat with them. I got an email where I said "I'm not sure I'm the right guy for this". And they insisted. And I went ahead, with what was quite a different approach.

I had 1.6 million pounds given to me from donors and various other people. So I was sitting on this money, and of course the academics wanted me to spend this on doing research. And then the research would produce reports which you could then use to beat up policy-makers with. It didn't strike me as very good for two reasons. One, I looked around this university. There's hundreds of millions of pounds of research being done. My stuff isn't going to make any difference. And secondly, if I were a policy maker, some academic coming to me with a report just goes down like a lead balloon, really. So, I thought about it. I spent a year, not exactly spinning wheels but I did things. I went to Harvard and MIT. I experimented. I did loads of business plans. I talked, talked, and talked and talked. Sessions, various colleges with academics. Some of those sessions brought beads of sweat to my forehead. Because I was right out of my environment.

Peter Cowley: Yes.

David Cleevely: Trying to learn how this stuff worked. Listening for the clues that they were going to tell me how to make it work, even though they didn't know how to do it. And it was a conversation with a chap who was the head of the Judge Business School at the time, that just, going back to my favourite quote Pasteur quote again, Chance Favours the Prepared Mind. I had done all this work.

It was December after a long period, when I was been thinking about it. And I went to see him, just before Christmas. And he talked about the way in which he had the Belgian Minister of Health, who was a personal friend of his, come to the Judge so that she could have that as a base and go to White Hall. And he said, "Look, the reason they're doing it like that, is you can send researchers into industry, and they come back with a better idea about industry. But actually, they just go back and do more research. You send people from industry into research, they get their eyes open to a whole series of things that they didn't know about. They go back with a network that they can use then to further their career." And I just went, "Got it."

Peter Cowley: Yes.

David Cleevely: And I said, "Right, I'm going to call them policy fellows". And he said, "What are you going to have them in for, three months? like my friend from Belgium?" I said, "No, no, five days. Five days. They see 30 people, they do it in five days. This is going to be absolutely compressed." And what we have with the Sanford Sons & Policy now is one and a half thousand researchers and experts. I think you've been one of them.

Peter Cowley: I haven't, no.

David Cleevely: You haven't? Oh, we should get you on the list.

Peter Cowley: Thank you.

David Cleevely: And then there's about 350 policy fellows. Each of whom sees about 30 of these people. We've had over 9,000 meetings between them. The result is that the networking now between the University of Cambridge and policy-makers in government and, slightly more generally, is everybody's in contact with each other. And those bits that are useful will stick.

Peter Cowley: And have you seen any outcomes which you are proud of?

David Cleevely: Oh, look, it doesn't go down terribly well if government wants to claim policy breakthroughs and changes in policy. And you go and say, "Well actually, that was my idea." does it? So, I'm not going to do that, okay? But I will tell you, there are several things where government policy has shifted as a result of those meetings. And there's been a lot of change as a result.

13. Raspberry Pi



Peter Cowley: Now let's turn to Raspberry Pi, the social enterprise producing ultra-cheap computers in huge quantities. I actually invested a little bit of money in that very first amount of money that was needed. Just as a donation.

David Cleevely: Thank you very much. Thank you.

Peter Cowley: Not very much, but I feel like I'm part of the journey.

David Cleevely: No, those early things really counted.

Peter Cowley: So, tell us about your involvement.

David Cleevely: On the periphery, when you were doing that, I was somewhat on the periphery of the thing. I talked to people, get a bit of advice, and so on. But when they'd actually got this stuff back into Jack's garage, and it started to fly out and get ordered, they realised they were going to actually have to have a training board. So they had the training entity. And they asked me to join the training board. So, I think I joined there in 2013. Something like that.

Peter Cowley: So that's independent from the charity?

David Cleevely: It's independent from the charity. So, these bunch of trustees I knew nothing about, and they did their trustee stuff with the charity. And I was on the training board. And so, trolled along doing that for a year or two. Increasingly frustrated, I had conversations mostly with Sherry, to say, "Not really sure what's going on here." And I started to get a little bit more, chatty with David in particular. But Ebon as well. And just talking about things. And then David took me out for lunch at Japas, the Japanese restaurant which I like very much. And said, "We'd like you to be chairman of the training company and of the foundation." These things are always a bit of a surprise to me. So I thought about it, and I kind of went back and talked to Roz and said, "If you're asked to do this kind of thing, you really can't refuse." So I took him up on that, and started. I'm trying to remember, was it 2015 I think? Must be 2015.

Peter Cowley: Was it? That was doing hundreds of thousands of units? Or even millions of units?

David Cleevely: Yeah, hundreds of thousands of units.

Peter Cowley: Yeah.

David Cleevely: It was obviously going to hit a million units. From the training point of view, that was going on. The other thing, which you need to understand, is on the charity side of things. Money was now coming into the charity. And the charity was beginning to give money away to people who wanted money. Now, in my book, you need to be very careful with a charity. You need to understand, is your money really making any difference or not? So, I did do quite a major shakeup at the charity after I arrived as chairman. We rewrote the article of association. We changed the management. We did a whole series of bits and pieces, and recruited a chap called Calligan, who has turned out to be possibly the best recruitment I've ever made. And he's a CEO of the charity.

I then spent, I suppose, two or three years just helping get the whole thing so it can scale up.

Peter Cowley: Yes.

David Cleevely: And to give you some idea, Phillip was the seventh or eighth employee into the foundation. Now I've got 130. It's about 30 or 40 in training, so 90 or 100 or so in foundation.

Peter Cowley: Is it in the public domain how much money is the charity distributing?

David Cleevely: Oh, charities need to declare everything. You've got to be transparent. We're doing, spending about 7 million a year or something like that. A large chunk of that is with Code Club and Dojo. Originally, when we started the charity, Code Club was the biggest single recipient of our money. We did a lot of other things too.

Peter Cowley: That's computing, education and schools.

David Cleevely: Yeah, it's for kids up to about the age of 11 or 12. And it's staffed mostly by volunteers, I mean, on the ground. And we provide all the curriculum development, all the projects, and all the assistants and so on. And that means that through Code Club, we're educating about 200,000 children a week.

Peter Cowley: In the UK mainly?

David Cleevely: No, less than 100,000 probably in the UK, but it's maybe a bit more. But, throughout the whole world. Places like Australia are particularly strong. And because of the system, the way we have done it, was we set it up. It costs us about 35 to 40 pence per child.

Peter Cowley: Per week, yes.

David Cleevely: Yes. So, I like things that scale like that. And I get the costs down. It's a bit like Abcam. Whole point is get the thing so it scales. So each unit costs you

less and less. So, the foundation side, going back to how that actually works. So the foundation then, with Phillip, shifted its emphasis away from giving any money. We stopped giving money away. Instead of which, we said, as Phillip says, "We've got a plan. It's a great plan. Get with the plan." So, Point Foundation is pretty, close to being 50% other people giving us money, because we've got competence.

Peter Cowley: Yes.

David Cleevely: To be able to do projects and execute on things that they feel are valuable. It's a bit like, a fool who has himself for an investor, that old adage. It's very good for a charity.

Peter Cowley: Discipline will be quite different.

David Cleevely: Discipline is utterly different. If, what you need to do, you don't do anything unless some third party, at arms, length thinks it's also a good idea.

Peter Cowley: Yes.

David Cleevely: And you've convinced them. But all of that has happened, and the whole thing has grown, usually. And on the technology side of course, which is another matter. We've just released three plus. Obviously, it wouldn't take a MENSA genius to work out that if you've got one in a pie, two in a pie, three.

Peter Cowley: Four's on the way.

David Cleevely: Who knows. Who knows what might be next.

Peter Cowley: Yes.

David Cleevely: So, there are a lot of technology challenges. And making sure the ecosystem that is built around pie is supported. People talk about pies being educational, because of course in the charity side, it is. But most pies are not used for education.

Peter Cowley: Industrial electronics, aren't they?

David Cleevely: Go down the escalators in the underground, all those video screens are powered by Raspberry Pi's. They're just absolutely, everywhere.

Peter Cowley: And they all generate a bit of profit, which then goes into the charity?

David Cleevely: Exactly.

Peter Cowley: The model is phenomenal, yeah.

David Cleevely: Yeah.

14. The Economy of Cambridge

Peter Cowley: So, David, you've been at Cambridge much longer than me. You support it strongly, promote it, you try and put it on the map in a great way, Cambridge Network originally. You've got to get through other institutions you've said. Cambridge you've had, and also this report you've done recently.

David Cleevely: Yeah.

Peter Cowley: Can we talk through that?

David Cleevely: Yeah, at Cambridge Ahead, I was quite sceptical how I felt about it, but it's turned out to be, really, quite an impressive organisation, to be honest. Its remit is to get the business community together to think ahead 20 or 30 years. So it then addresses things like transport and housing and skills, education.

Peter Cowley: Communications?

David Cleevely: Communications. Yeah, now, brand has been a real bug bear for me about Cambridge because we don't market Cambridge effectively, really. There's no joined up marketing of Cambridge. There's a project currently going on with the university, which I hope will finally solve that.

Though I've peeled off from three failed attempts to try and get Cambridge marketing as an entity going ... And I thought to myself, well, actually, what Cambridge is really suffering from is not the marketing per se. What we really need is the infrastructure.

So what we need is a project that will demonstrate why Cambridge is important to the U.K., European, and world economy. And will, therefore, draw to the policymakers' attention what actually needs to be done in terms of infrastructure, and how infrastructure is defined very broadly.

Part of that is informed by work I've done for government, and some of the stuff that I've done for the Centre for Science and Policy. So I then wrote the terms of reference for this, and was originally thinking about it in terms of just the greater Cambridge area.

But when we got the elected mayor coming along, I went off to have a chat with them, and persuaded them to part with some money. Cambridge Ahead funded quite a lot of it. We produced this report, which is a Cambridgeshire and Peterborough independent economic review, which basically gives you the economic, and a lot of demographic baseline for what's happening in Cambridgeshire and Peterborough.

Then it lays out how the area is going to, or could unfold. It talks about different ways in which you can work, and then talks about some of the infrastructure deficits that we've got. Most importantly, I think, to draw from that report, firstly, Cambridgeshire and South Cambridgeshire is two-thirds of all of that. It's far less in terms of population. In terms of economic activity, it's two-thirds. The mayor has a target of doubling GVA. If he's going to double GVA, he has to make sure that that engine keeps on delivering

Number two is the growth in this area; it is enormous. It is the fastest growing city that the United Kingdom has ever seen, and that includes the whole of the 19th Century in Barnsley and other places that I thought were faster growing. When I went back and looked at the stats, Cambridge is outpacing them.

Now, Cambridge is enjoying the same kind of rate of growth that Silicon Valley saw in the 1960s and 1970s, when it went from the apple orchards in the '30s, through the beginnings of the foundations. Then in the '60s and '70s the Silicon Valley that we know was actually laid down, and it was that growth rate. We are at the same point on that curve.

Peter Cowley: Except we're tiny compared to Silicon Valley, which is probably, what, about 90 miles?

David Cleevely: Oh, okay, so Peter, a lily doubles in size every day, and on the 28th day it covers the pond. At what point was the lily only a centimetre across?

Peter Cowley: Oh, I can't do it. It's actually the 28th root of two. I can't do that in my head!

David Cleevely: Well, the 28th root of two, you couldn't see the lily. Even after a fortnight you can't see the lily with the naked eye. By about day 22, if you looked very carefully, you might be able to see the lily. By day 28 it covers the pond right?

Exponential growth is counterintuitive. Cambridge is growing at over 7% a year. It's doubling every 10 years. That means that over the next 20 years we will be four times the size we are now; 130,000 people becomes ... getting on for over half a million, 600,000 people.

And actually, some of the employment and revenue growth, if you go back slightly over 12 months to look at the previous year, the growth rates were in double figures, right? Now, you can't have an antiquated transport system. You can't have the education system, we're near the bottom of the league for spending per pupil, partly because when you have fast growth rate, you have more people.

Peter Cowley: Yes, you can't keep up.

David Cleevely: And you've not got a big enough budget. What's happening to the health system? What's happening to all those bits and pieces? That's what this report is about, saying, look, if you want this engine of growth, as Greg Winter, who got the Nobel Prize earlier this week said, the biggest single blockbuster drug that has even been in the history of the world came out of Cambridge, right? He got the Nobel Prize for the precursor to the work.

Peter Cowley: That's Humira, was it?

David Cleevely: Yeah, Humira, they produced all of that. Okay, if you want this massive goose continuing to lay golden eggs in an ever-increasing rate, you better feed it and you better make sure that it's got a decent nesting box.

Peter Cowley: So where will this go to? Do you think this report will actually lead to change.

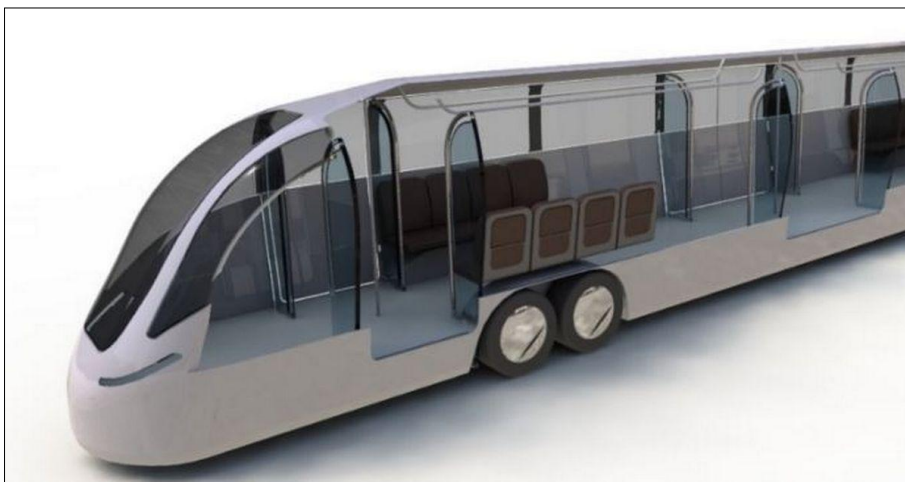
David Cleevly: I suspect so. The mayor is tasked with, and he's publicly stated he wants to see this area successful. We take a balanced view Peterborough, Huntingdon and The Fens, as well as Cambridgeshire and South Cambridgeshire. I think about the whole thing.

So I think, largely, we've got things aligned. It's going to be a repeat, in effect, of what we did with Cambridge Network and all the other things with the networking, getting people working together. We don't under rate it in Cambridge. The rest of the world, actually, there's quite a lot of competition out there.

People don't generally have these chats and mentoring sessions, and do these other bits and pieces. I think we need to spread that culture a bit because it's been part of what has enabled us to grow so successfully; so spreading that a little bit, getting people to exchange ideas. Understanding how you can improve productivity. Learning what's important, why people need to raise their eyes from the dull and mundane to aspire to better things.

All of that stuff we can do. We just need to make sure that the local authorities, and the political will is there, that everybody's then working together. I've got great faith in human beings. Just let human beings have sight of a vision, and they will do fantastic things. You don't need to do everything for them. They will do that stuff.

That's part of what this report is about, saying, right, here it is. Now let's get on with it. We can actually achieve great things here, and not just for the few within Cambridge, but for the whole of the region; that's really important.



In 2020 David Cleevly and John Miles of the Cambridge University Engineering Department co-authored a paper for the Mayor of the Cambridgeshire & Peterborough Combined Authority. It showed that by using smaller vehicles (such as the one shown above) the cost of a Cambridge metro project could be reduced from £4 billion to £2 billion. The saving arose mainly because the use of smaller vehicles would enable the diameter of the tunnels to be reduced.

15. Diversity

Peter Cowley: So, David, we all know that diversity in entrepreneurs and Asian investors is poor. What's your view?

David Cleevely: Oh well, yeah, diversity is hugely important. It makes companies, organisations, much more effective and much more efficient. I remember somebody from the Foreign Office, bring one of the Greek Prime Ministers some places to see the analysis.

I was very proud on the way out, and I stopped at the reception desk, and I said, "Look, you've met seven people here. As far as I'm aware, only two of them were born in the United Kingdom". I didn't say at the time about either ethnic background or whether they were male or female, but there was quite a variety of that as well.

I was very proud of that analysis, in particular. We had people from all over the world, and we had a good split of male and female. Looking back on it now, I would've done some of the things a bit differently, but you learn. You learn.

When Bob Driver took over as head of Cambridge Wireless, and I sat, actually, in this very garden at this very table. I said to him, "Bob, you only have one strategic objective for Cambridge Wireless, and that's diversity". The reason is that as organisations, and take something like Cambridge Wireless, which is a membership organisation. If it's middle class white male, stale; it might feel nice and comfortable, but it's not going to get anywhere, certainly not in the modern age.

Peter Cowley: Well, if he does, he's going to go in the wrong direction. He's taking the wrong direction.

David Cleevely: Actually, we made a huge effort after that. We diversified the board. As far as diversity, I remember we got some really interesting women on the board. We have a decent ethnic mix on the board. The board meetings are orders of magnitude better than they were.

It's much more lively, much more interesting. I just feel this isn't political correctness. This is simply if you want organisations to function properly and be effective and efficient, you'd better look after diversity. In order to do that, you actually have to make a bit of an effort. I feel about this stuff very strongly.

Peter Cowley: Yeah, I was on stage in Toronto last week, exactly addressing this issue that, the actual investors, women are probably only about 10% or less. Entrepreneurs are probably up about the 20% mark.

David Cleevely: Yeah, the trouble is it's a long pipeline. If you're going to be a founder, and then do an exit and start to do angel investing and so on, you've a couple of decades, probably. So it's going to take a few cycles before we can correct this.

Peter Cowley: Well, cycles ... It's even longer, but yes, it's certainly going to take at least 10 years before we get anywhere near.

David Cleevely: Oh, yeah, we're beginning to see some of the fruits of stuff that was done more than 10 years ago. It's beginning to come through, but you're not going to be able to just change this stuff overnight. On the other hand, that should not stop you doing it. You do need to push and push and push on this.

Peter Cowley: Yes exactly, yeah. Quotas?

David Cleevely: Yes, well, quotas are useful. I've used them at Raspberry Pi. We have members at Raspberry Pi who help us select trustees, and they're ambassadors for us. When I redid the articles for Raspberry Pi, when I first became chairman, one of my first acts was to put in some minimum quotas.

Those minimum quotas were about female participation in membership, about ages, about diversity of backgrounds, about diversity of industry sector they came from. Because, of course, with Raspberry Pi the tendency would be to select people in computer science. Since a lot of women have been discouraged from going into computer science, you then inevitably end up with males, right?

So you actually had to set up a framework in the first place that said, if you violate these percentages you've got to stop. You've got to not select anybody whose male anymore. You've got to go and get somebody else. I think that kind of positive discrimination in that sense is really, important. You don't have it forever, with any luck. You use it to engineer change.

I'm particularly pleased with Code Club. For example, Code Club, is younger kids, but we're getting over 40% girls at Code Club. So there's hope for doing these things, I think. I think it makes for a better environment.

Peter Cowley: Yeah, no excellent, David. So, just to apologise to the listeners who probably heard that small aircraft flying overhead occasionally during this. Great to have it outside. We're in the sun. It's autumn. It's a lovely day.

David, again, as always, every time I spend time with you I learn from these conversations, and thank you very much indeed.

David Cleevely: Thank you Peter. It's been a great pleasure, thank you.

Peter Cowley: Thank you.
