



THE ASCENT: A TENZING PODCAST - BILL COLLIS

Title:

Bill Collis talks The Matrix, MBOs and software piracy

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Episode overview:

[Bill Collis](#), former CEO and President of visual effects software behemoth [Foundry](#), one-time Ernst & Young Entrepreneur of the Year, and [Tenzing Entrepreneurs Panel](#) member, tells Guy about unwittingly finding himself creating FX for one of the most iconic films of all time... his passion for using maths and algorithms to solve real world problems... how to take on software pirates and emerge victorious... the value gained from working with multiple private equity backers... and the joys of stepping back from CEO to take up chairperson roles.

Quick-fire Round:

- **Favourite book you use regularly?** [New Scientist](#) and [The Economist](#)
- **Most inspiring person in Bill's career?** [Simon Robinson](#), Co-Founder of Foundry and [Karen Slatford](#), Chair at Foundry.
- **Qualities an entrepreneur needs?** Resilience, belief and trust in other people.

BILL COLLIS TRANSCRIPT

GUY:

Bill, thank you, superstar, let's dive in. I was going to start by asking you, I wonder if you can recall your earliest entrepreneurial adventures, even if as a child.

BILL:

Ha, that is fascinating. If you want to go really, really a long way back, I can remember at prep school, when a bracket for the high jump bar was broken, and at half term, I went home and I went into my dad's shed and I built a new one for them and took it back to school, and I remember the teachers being amazed that I'd done something like that at

half-term... because most people at half-term were playing football, or something like that, which I never quite understood. And then I had a wonderful uncle who, in the early 80s, took time to teach me about microelectronics that were just happening, and we would build circuits together, and then ultimately try to get computers to do things. This was in the very, very early days - BBC Micro days. Other people were writing computer games, but I wanted the computer to do something, and connect it to the outside world in some way.

GUY:

Were you studying maths or applied maths?

BILL:

Electrical engineering was my dream, and I then went on to do a PhD in signal processing. But yeah, I was always interested in the application of maths for solving real world problems

GUY:

Was there anything you did in your PhD that linked to real world problems?

BILL:

Absolutely. So, in signal processing, I did a lot of work there on analysing heart sounds, because a good cardiologist can listen to a heart and work out what's wrong with it, and I felt, if a human being can do that, then surely we can train a neural network and train a computer to do the same thing. So I worked with the pediatric cardiology team at Southampton to try and collect a data set and then train neural networks in order to make the same diagnosis the doctors were making.

GUY:

How did you make the leap from academia into the business world?

BILL:

My PhD supervisor went off to visit a company called Snell and Wilcox that was building algorithms for the broadcast industry. They were based half an hour away from Southampton, in Petersfield, and he said it was really fun, and I said should I apply for a job, so I emailed them and they offered me a job as an algorithms engineer... so I moved from medical algorithms then to image processing algorithms - this was coming up with algorithms for doing a whole range of activities in the broadcast world, for things like standards conversion and archive restoration, so tidying up old and damaged footage, making it better quality and watchable on modern TVs.

I did that very happily for a number of years until, one day, an email landed on my desk which basically said "*we understand that you guys are really, really good at motion estimation*" which was the algorithms that allowed you to make frames up in between other frames. (In Snell and Wilcox we were using this for standards conversion but you

could also use it for slowing down and speeding up sequences). And this person said *"we understand you're the best person in the world at doing this, we've got some really tricky footage, can you see if you can slow it down for us?"* My boss at the time said, well why not, let's look at it, so we said yes, and I think we signed a NDA, and a month later an old disc recorder arrived from the USA with some tapes, and we loaded them onto our Sun workstation and started working on them.

I spent the next six months working on this footage and it turned out to be the bullet time sequence from the first *Matrix* film, and the actor in it was Keanu Reeves. I didn't know anything at the time, during the months I was staring at these few hundred frames, and they went on to be used as the slow motion shots in the first *Matrix* film. And the person who'd been in touch with me was the VFX supervisor on that film - a guy called [Kim Libreri](#), now CTO of Epic Games and doing a whole world of amazing work. And that is actually what got me into the film industry, because he (Kim) introduced me to Simon and Bruno who'd set up The Foundry and said I should go and join them.

GUY:

Describe what the business was like when you turned up.

BILL:

It was small - I think I was employee five or six. It was the late 90s, so what you could do with computer graphics and how you made films was rapidly developing. The whole concept of special effects and software for special effects - there was a lot of custom code, and so Simon and Bruno had been employed by post-production houses and they decided, *let's take some of this code and turn into products*, and so they'd made their first product, called Tinder. Then I came along and said *"I have a whole load of maths, and it would be good to apply maths to a new range of products that would be more like tools, to make it easier for people to make films"*... things like automated wire removal - so if you have actors swinging around on wires, and one example of that at the time was Harry Potter playing Quidditch, up til then you had to hand paint out wires on each frame - so I said I could design an algorithm that would allow you to automate the process, and we went off and we made suite of tools, called Furnace, that we productised and sold to post houses all around the world.

BREAK

BILL:

Simon and Bruno, fairly early on, looked at my coding fairly early on and thought I wasn't a coder, but they wanted me to come up with great ideas and algorithms and product ideas. So I spent my time doing that, and they would spend their time with a lot of other very talented people coding them. That gave me the chance to go off and show the product to customers, and our customers at the time were the world's leading post-production houses - Framestore, Moving Picture Company in London, Industrial Light and Magic in America and Weta in New Zealand who were making the *Lord of*

Rings trilogy. I had this opportunity to go and work with the most talented creative artists and spend time trying to figure out what their problems were and how we could use maths to make tools to make lives better and allow them to be more creative.

GUY:

So your role effectively quickly evolved from maths and algorithms, to almost the lead commercial role?

BILL:

Yeah, exactly, I was doing the deals, but at the same time I was designing the product and asking what we could do next, where are you struggling, how can we modify this, and I would sit down with Simon, he would code it up and I would repeat the process. So our product, which was Furnace, went through a number of iterations, and we got to Furnace 4 before the company had a reboot and we decided that rather than making plug-ins that work with other people's software, we decided we wanted to own the host software and we wanted to have a much bigger pieces of software that we controlled. And that set The Foundry off on a completely new angle, because it involved us - through a set of complicated arrangements, firstly selling the company and then buying it back again... I led a management buy-out to buy it back and buy back some technology at the same time, which was backed by a VC backer, [Advent Venture Partners](#) in the UK. At that point I became CEO and set about building The Foundry.

GUY:

So it started off with six, seven people, and then sold at which stage and why did it get sold to a tradesperson?

BILL:

It's fascinating, slightly complex, I shall try to give you precised version of it. So, Simon and Bruno had been the main shareholders, at that point, for a decade. They were quite keen to realise some money in the company, and we wanted to do this switch from being a plugin company to owning our own big bit of software - what's known as a compositor, rather than just have plugins that plug into other people's compositors. At the time, the industry standard compositor was owned by Apple. And Apple had just decided to leave the market, and discontinue their product, because the Iphone had just come along and they realised there were better ways to make money than in the high-end film world...

And there was an American company, a post-production house, called [Digital Domain](#), that was owned by James Cameron... they had written their own compositor in order to make *Titanic*, and they'd just begun to start selling this as a product in their own right. We saw it and we thought we could turn this into a really successful product, for the world, to replace Apple's product.

The way we went about making that happen was to sell The Foundry to Digital Domain in trade sale. They bought 100% of the company. To the outside world, at the time, it

looked like The Foundry had bought this product - which was called Nuke - from Digital Domain, because we kept The Foundry as a brand and an entity in its own right, and we added the compositor to our own product range.

Then it turned out, 12 months down the line, for various reasons Digital Domain needed to raise money, and the obvious way to do it was to sell The Foundry, and that's when I stepped in and said I'd like to lead a management buy-out to buy the whole lot back. Not only the bit we'd originally sold to them, but also this product, Nuke.

Buying it back wasn't easy. It was 2008, and we had a couple of attempts. The first was the weeks that Lehman's collapsed, and not many management buyouts were happening, and ours didn't, but six months later we did succeed in making it happen. We bought it back and we were masters of our own destiny again at that point, which was very exciting. We had a product we knew could make really successful... we had a whole load of IP and technology... and we had a really supportive backer in Advent Venture Partners. That was really when The Foundry went from being a 20-person company to rapid expansion, when we ultimately grew it to over 300 people over the next decade.

BREAK

I think we were expected to grow quite fast, I can't quite remember the numbers. The reality is, we grew super fast, and we started expanding the product range quite rapidly, so not only did Nuke quickly become the de facto compositor for making films, and within three or four years of the MBO pretty much every major film being made was using Nuke as the compositor and that's still the case today. But on top of that we started growing other products, via working closely with our customers.

A number of them came to us and asked us to help productise our in-house software, so we did deals to licence software, which were like mini acquisitions, and that expanded the number of applications we were developing quite rapidly. Within a couple years of Advent owning us we had gone from being a plugin company with three major applications - Nuke was by far the biggest, but also Mari and Katana as well - and at that point we had grown in those two years from 20 people to over 100, and I suspect the turnover would've been around somewhere like £13/14m at that point and by then making a few million of EBITDA.

GUY:

So that's somewhere between three and five times' growth in the space of two years and you're CEO. That's quite a learning curve from a C-Suite point of view.

BILL:

Yes, at the time you're just doing it so think it's completely normal as you have no option but to get on and make a success of it, but looking back, there were lots of exciting challenges along the way. There was vast amounts we didn't know. It was only just

around the time we were doing the MBO that we got our first CFO. It wasn't many years before that Simon and I were still doing the accounts at the end of the year, sitting down and trying to reconcile the accounts ourselves. Budgeting was something Simon and I would sit down and work out ourselves on a piece of A4. So things like having a CFO, debt - Advent introduced us to the idea of debt, which up to then we thought was an alien concept, but clearly one that we'd used to being backed by private equity now.

Layered on top of that was a vast amount of travel. Over 90% of our software was exported. A lot of it went to the West Coast and Australia, New Zealand, and a growing amount in China. So I was doing a couple of long haul flights a month as well as growing the company, so it was quite an intense period, but a huge amount of fun.

GUY:

So I think Advent only invested for 18 months, two years, what drove the exit there?

BILL:

It was about two years. It had been an amazing period of growth, but they were looking to raise another fund, and it made sense for them to sell the company. We absolutely didn't want to do a trade sale, we felt the business still had a long way to go, so we sat down and said we would do a secondary (not that I knew what it was at the time). That was the first time appointed advisors as bankers to help with the sale, and Carlyle came along and bought the business in a process. I didn't even know what a process was. We were helped by Armour, the advisors, who did a fantastic job, and Advent got a great return, great for all of us. When we did the MBO, we bought the business for about \$12m and the sale from Advent to [Carlyle](#) was about £70m, so a fantastic return for everyone in just under two years.

BREAK

GUY:

So you've gone on a huge growth trajectory. Carlyle - what were the big developments in the business whilst working with them?

BILL:

Just an awful lot of growing up. The best from my point of view was, Carlyle helped us hire a chief sales officer - a guy called Christopher Kenessey, who was my introduction to really good US-based sales people. To this day, I think American sales people are just fantastic. CK basically came along and said, "*I'm in charge of sales and marketing, that's my job, I'm taking this responsibility away from you and I'm running sales.*" I still visited customers with him, it took a bit of time, but ultimately having someone taking the weight of meeting the monthly sales figures off me was amazing.

Carlyle also has a great network around the world and having offices all around the world really helped. At the time I was trying to grow fast in China where our software was used

and pirated a lot, and I needed to have a lot of help building a team there and help with lawyers there... and the local Carlyle team were fantastic, and looked after me, and let me use their office, and taught me how to use the metro to get around Shanghai - all sorts of things I needed to know to build a successful business in China, which turned out to be hugely successful for us and led a lot of our growth over that period.

GUY:

How did you look into piracy? That's the big wild west, software in China, how did you tackle that?

BILL:

Yeah piracy was fascinating for us as an organisation. So, obviously it was rife in China, and I suspect it is still rife in China, but I wanted some data. I wanted to know who was using our software illegally, and how much of it were they using. So the first thing we did was start putting some telemetry into the software and reporting back, so we could really see who was using it, who was using it legally and who was using pirated, and with that data there were lots of things you could do.

You could choose to ignore it if you want - and there are clearly many cases when the right thing to do is ignore it - but, equally, you were able to see that this wasn't just a Chinese problem, it wasn't just an Asian problem, it was a really big problem in Europe and America as well. The great thing was, we were able to solve that problem, with the telemetry, in the USA and Europe, and build a team to fix that. And that contributed a vast amount for a few years to the growth of The Foundry.

The fundamental learning was, get some data. These days, we know how important data is, and back then it wasn't quite so obvious. But the more data and the more knowledge you have about really what's going on with your product, who's using them, which bits are being used, how long they're spending on various bits of it... with that, you can fix piracy, but more importantly you can start building better products, because you can see which bits of the products people are spending time in, and which bits they're struggling with, and that data is just invaluable.

GUY:

So you were with Carlyle for about four years?

BILL:

Yes, four years. We did some acquisitions. We hadn't done any acquisitions 'til that point, we'd done these licensing projects where we'd licence code from our customers which, as I said, were like mini acquisitions, but under Carlyle we did some real acquisitions. One of them was a US, West Coast-based company called Luxology, that made a product called Modo that was used heavily in creating 3D objects. It was used in the film world, but also, really importantly, it was used by designers in the concept design world, and that allowed the company to diversify away purely from film and broadcast

into design work.

Using that, we started some really big projects with companies like Adidas, where we set about moving their designers from designing in very much a 2D way using products like Photoshop and Illustrator, to designing in a 3D world where they could visualise their shoe in real time, in 3D... and that visualisation could be sent off to the factory, so the factory had a much better chance of building, first time, what the designer had envisaged, rather than interpreting from flat drawings what the designer had envisaged.

Similarly, we did really exciting work with Mercedes and Daimler in trying to get 3D images onto their dashboards. So today, many of the cars we drive have LED dashboards with some quite impressive graphics on it, and we were some of the pioneers of putting really high-quality graphics on dashboards.

GUY:

So, extended products and extended verticals, effectively.

BILL:

Exactly. All of that led to really nice growth over those four years, and Carlyle felt the time had come to sell the business, and I guess we were more open at this point to a trade buyer but equally we weren't closed to another private equity deal. We ran another process. By this point we were quite familiar with processes and advisors - again using Armour - and this time [HgCapital](#) came along, and [Nick Humphries](#) came along, and said they would like to buy the business and saw huge opportunities for it to grow and it would make an exciting company for them.

So at this point I'd been backed by three private equity backers, and I felt that I'd been CEO for a decade and the business was over 300 people, and I wasn't in a rush to stop being CEO but I thought if we were doing another private equity sale it was important that the business - sometime during that process - got a new CEO, and someone who'd be happy to take it beyond 300 people through its next phase of growth.

Hg happily agreed to that and did the deal, and so within a year or so, I moved to President and we brought in a new CEO in a lady called Alex Mahon, who then took on running the business.

GUY:

Wow, what was that like, psychologically, stepping away? Were you around to support her?

BILL:

I didn't find it too hard actually, I got on very well with Alex. I saw Alex as a professional CEO, whereas I had accidentally fallen into the role. It was great to see someone come along and say *it's my job now to take this to the next stage*. I'd been there for 15-20

years at that point, and there were a whole load of initiatives and deals and promises that I'd made as a CEO that were really hard to change, but bringing someone new in, Alex could take a blank sheet of paper and say, *this is what we're going to do with the business. This is how we're going forwards with it.*

It was great to see someone do that. At times it was a bit painful to see bits ripped up and strategies changed, but at the end of the day she was very good at what she did, and she absolutely took the business onto another level. And it was great to watch and learn. I took that opportunity to go and start working with some other businesses as chairman, and expand what I was doing beyond The Foundry, because at that point I had only worked for two businesses - Snell and Wilcox and then The Foundry.

BREAK

GUY:

So, when did you fully step away from The Foundry? Was it still fully private equity-owned at that time?

BILL:

So Hg had owned it for two or three years when I decided it was time to step away completely. Hg then went on to do a trade sale to Roper about a year after that, and again had a very successful exit with it. It was about three years ago, now, that I fully stepped away

GUY:

And the revenue was £50m?

BILL:

Yes, up around £50m

GUY:

Wow, so you'd gone from £2m in 2008 to 50m in 2018, in ten years or so, which is phenomenal, well over 20% compound growth year on year. That is really rare to get a business that grows so much and with that compounding consistency. Apart from your own talents as CEO, what were the main beneficial drivers to either the market or how you ran the business?

BILL:

We were lucky in many ways. We had the most amazing talented customers that were continuing to push our technology and push their creativity over that period enormously, and we'd had to run as fast as them, and they kept on wanting more from us. So that absolutely helped from a product point of view. I had an amazing team around me and working out for me how to delegate and get them to be successful and do the work was important. But then private equity helped enormously along the way.

I'm often asked questions about how did you choose your private equity partner, and obviously money has an important part, but in retrospect we got exactly the right partner at the right time, and I look at any one of those partners and think if we'd had them in a different order, it wouldn't be anywhere near as successful

GUY:

You were quite focused on R&D even though PE doesn't necessarily turn to profit that year, how did you balance that within the private equity world?

BILL:

As you can imagine, with my background as an algorithms engineer, I always felt it was important to have a strong research branch to the company. In the very early days I ran that, then Simon, then John Starck, and it was just so fundamental that The Foundry was seen as a thought leader, and the moment we lost that, we've lost our customers. They needed people always pushing boundaries for them. So it was a relatively easy argument with private equity. I always made sure we could find some money from somewhere to make sure we could pay for a bunch of R&D engineers, doing interesting things. And we had a budget, but if Andy or one of the guys came along with an interesting idea and wanted to put someone on it for six months, I made sure I found the money to do that.

We used that R&D team hugely in our marketing and publicity, and it was really important that they could talk to the press and customers and were open about the research we were doing. It all helped people understand that research and trying to be cutting edge underpinned everything at The Foundry.

GUY:

So that's a phenomenal story about The Foundry. I love at the end talking about chair having value and know you've gone on to multiple chairman roles... I wonder what your reflections are on the role and founders and entrepreneurs choosing chairs?

BILL:

It's fascinating, I've chaired four companies since leaving The Foundry. Three have been very successful, one less so. The relationship between the chair and CEO is fundamental. Where it's been for me is where that has worked well. Personally it's worked well for me where I can understand the technology in the company, because I like being hands on as a chair. I'm not an executive in any way, but I need to understand the technology that the company is making and selling, so in places where I understand the technology and have a strong relationship with the CEO, it's worked very well.

Fundamentally it's that relationship. Private equity is also very important in that. It has to work three ways. Also, it's important that the chair isn't seen as the person who sits between CEO and the private equity company. It's a triangle, isn't it - everyone has to

talk to everyone and that's important, and the relationship has got to be strong between all the nodes on the triangle.

GUY:

Do you think it's more important that some people get fixated on having a chairperson from their industry, or their niche? Or the other alternative is to have somebody who just has a lot of experience. Points back to your prep school years of building something, building businesses. Where do you think is the bias, there?

BILL:

I think it very much depends on the company. I think there are cases where it's a really high-tech company, you're doing bleeding edge technology and in that case, having a chair who understands that technology is important. I think, if it's a more generic business from a technology point of view, having people who are good at building things and building product and understanding organisations is important. So in my experience, it depends on the amount of technology involved or not involved.

GUY:

Coming onto tips for a younger Bill Collis. If you were to give key advice to a founder, entrepreneur exploring private equity for the first time..?

BILL:

I have two views about private equity. One bit of me says don't be worried about private equity. So I can remember being really nervous about the concept of private equity - these money people wanted to come along and grab our business - but in general that really isn't the case. For it to be successful, everyone needs to work together, so you need to find some people to work together with and then all be successful together.

One bit of me says, don't worry, it'll all be fine, and it was fine. And another bit says, go and do more referencing than you did. It's really important when you're looking at private equity... or hiring your C team... it's really easy to just go and talk to people, and obviously don't just go and talk to the people they want you to talk to... go and talk to the people they're not telling you about. This takes a bit of effort, and the time to do that isn't the hour that you're trying to sign the deal, but go and talk to as many as you can. You're going to spend the next four years of your life working really closely with these people. It's as important as hiring any C team members and so you should put an awful lot more referencing into it. So, don't worry, it'll all be fine, and also go and do a huge amount of referencing.

BREAK

GUY:

A couple of quick-fire questions to end with. Is there a favourite book of yours you use regularly?

BILL:

No, there isn't. I've enjoyed lots of business books, but I'm going to turn to two magazines - *New Scientist* and *The Economist* - and I think reading those two on a weekly basis has given me vast amounts of advice and knowledge.

GUY:

If you look back over your career, is there anyone who jumps out as being the most inspiring?

BILL:

I'd choose two. One is Simon - we really built The Foundry together, over all those years. The other is Karen Slatford, my chairman, and together they gave me huge amounts of advice, and I couldn't have done without either of them.

GUY:

Qualities for an entrepreneur going through that journey?

BILL:

Resilience! You just need to keep going and plough on and you need a healthy dose of belief in yourself that it will all be fine... Belief and trust in other people, as well, because you can't do it all yourself. There are times when you have to say to your CSO, CTO, head of engineering, "*go and do it, I can't do it - you go and fix it, I know it'll be fine.*"

GUY:

So blind optimism and resilience.

BILL:

Exactly. Just keep going, and know the direction you're heading in. You're not going to know a precise map of where you've got to go, but if you're heading to the moon, know the moon is where you're going. You don't have to know how you're going to get there but you know the direction. Make sure you have that main direction well set, and then you can take a random route if you want to.