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Inevitable and investable: five long-term growth drivers

January 2025

From smarter robots to intelligently designed drugs, Baillie Gifford partner Stuart Dunbar discusses some of the transformations that will define the years ahead.

Leo Kelion (LK): Cheryl Mehrka has an adventurous spirit. The New Yorker's been a karate instructor, a scuba dive master, and a charity bungee jumper. But her latest achievement tops the lot. In November, Cheryl became the world's first recipient of a fully robotic double lung transplant. Medics used a state-of-the-art da Vinci system to remove her COVID-damaged organs, prepare her heart and sew in the donated lungs. The robot's incisions were about a quarter the size surgeons normally make. And the 57-year-old healed quickly. A typical hospital stay after such an op would be up to 12 weeks. Cheryl was back home and breathing freely in just four.

Hello, I'm Leo Kelion, and in this episode of *Short Briefings on Long Term Thinking*, I'm joined by Baillie Gifford partner, Stuart Dunbar. Stuart will discuss some of the big growth opportunities of the years ahead, including the potential for robots and automation. But first, a reminder, your capital's at risk and your income is not guaranteed. Stuart, welcome to the podcast.

Stuart Dunbar (SD): Thank you, Leo. It's great to be back.

LK: You are indeed back. You were last on *Short Briefings* about 18 months ago. But for those who don't know you, can you tell us how you first got involved in finance?

SD: Gosh, yes. So I trained to be an accountant and after leaving university, quite quickly worked out that accountancy wasn't going to be for me. I took myself off to Hong Kong, which you could do back then. It was British. That's how old I am. I decided I wanted to work in finance for all the wrong reasons. As far as I could see this was the 1980s and it looked like finance was the place to be if you wanted to earn lots of money and attract the girls. So I would honestly say I did it for all the wrong reasons but here we are 30 years later and I've learned a lot since then about the role that we actually can play, and which I think is really important to clients and customers and actually to the world in terms of capital allocation. But I think it's hilarious when people talk about, you're 23, you don't know what you're going to do. I didn't know the difference between a broker or an asset

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manager. So I sort of fell into it as I think so many do. And then it's been an interesting ride ever since.

LK: And then what were you to Baillie Gifford specifically?

SD: Well, unusually for Baillie Gifford, I've worked in a couple of other asset management companies. And part of it was just personal. I had an opportunity to come back to Scotland. And at that time, there was really only a couple of firms in Edinburgh that I might have wanted to work for. And the opportunity came up. So I've joined now 20-something years ago, joined Baillie Gifford. I mean, there is an interesting lesson in there. As you get older you realise that who you work for really matters. We're not the perfect company, there's no perfect company, but working for someone who actually does try and put client interests first and tries to do the right thing to the best of our ability makes it a very comfortable place to work.

I'm not surprised that people stick around in our firm for long periods of time, but again I didn't, I know that now, I'm not sure I knew it then.

LK: And a focus on our clients' interests is one of the characteristics of Baillie Gifford. Another is optimism. You yourself have written about the need to put an emphasis on what might go right rather than wrong. So how does that translate into the decision-making that our investment teams actually make?

SD: Yeah, so this concept of thinking about optimism is so important. We work in an industry where I think there's disproportionately too much focus on what might go wrong. Generally, when you're making investments, you don't want to have to explain to your clients that some huge mistake has happened. And I think that leads people to be overly averse. They don't embrace uncertainty. Uncertainty is not risk. Uncertainty is you just don't know what's going to happen, and you can't measure that. That leads people to seek things that are readily predictable or just to extrapolate what's already happening into the future. I think for us, what we try to do is to embrace that level of uncertainty but to think about risk as a positive thing as well as a negative thing. What might happen for this company if it all goes right? That's disproportionately not considered by a lot of investors.

LK: So, Stuart, I know before coming on to this podcast, you've set yourself the challenge of coming up with some transformational changes that are both inevitable and investable. Which ones have you struck upon?

SD: Yeah, there's a number of them. And you're right, just to emphasize that point, is we're trying to think on 10 years, what is it that looks like it has to change? These things don't depend on the government of the day or the short-term economic policies or interest rates. These are things that we've identified that we just think inevitably will happen in the next 10 years.

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So we'll go through some of them. And the ones that are probably most interesting for us, at the moment, are **robotics**, **innovation in healthcare**, **energy transition** – that's hardly novel but we're really still at the beginning of it – **finance and payment systems** – there's room for lots of companies to do new things there – and then **autonomous transport** or forms of different forms of transport might be another way of putting it. So we guide that to help us to research areas where we think we might find these companies on a 10-year view that are, you know, almost certainly be in the middle of the new ways that people behave and the new ways that we consume in coming years.

LK: Okay, I want to delve into all of those. Let's start with the robotics. And I suppose it's one thing to create a chatbot, but another to build a robot that moves about in the physical world and can make sense of its environment. So what forces do you think are making such machines a necessity?

SD: Demographics is probably the starting point on this. Now, you have to parse demographics into different countries and regions, but fundamentally in developed economies, we are seeing a decline, sometimes an outright decline, in the number of working-age people. So that drives a lot. I was in Japan recently. And just being there prompts you to think about ageing societies because they're probably, I think, the most ageing society at the moment. When you have a shortage of labour, it becomes more and more expensive. You have to find ways to automate everything you can. And so, surprise, surprise, the Japanese and actually the South Koreans, interestingly, who have a similar demographic profile, they are finding ways to automate everything they can in order to free up people to be occupied in things that maybe need a bit more artistic or creativity or judgment. So that's the starting point. I think it just has to happen.

LK: And these aren't just robots totally replacing people in factories and elsewhere. It's working alongside them, isn't it?

SD: Yeah, we're moving from our era when robots are basically attached to the ground, turning in circles, doing repetitive tasks in a very precise way in which their movements are precise. That's been incredibly powerful, but we're coming to a whole new approach now, effectively, when robots can see and understand their surroundings. And that's an enormous change. That then means you can have robots moving freely around. For example, in distribution warehouses, so Amazon and Coupang in South Korea are far down the road of automating how their warehouses work when they're putting packages together that then go out to customers. And the difference there is that they're actually autonomous. They move around the warehouse on their own. They have safety mechanisms built into these various different robots. that makes it safe for them to work alongside human beings in a way that we really haven't been able to do until quite recently. If you think, what does it mean when a robot can see? It's a total game-changer. It then means that they can do unstructured tasks that no longer need to be attached to the ground. They no longer have to be so precise in terms of pre-programmed movements, they can actually make adjustments depending on their environment. I mean, that's fantastic. And again, I think we're in the relatively early stages of that.

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One thing that's interesting is, how do you invest in that? It's not just the robots, maybe that's not even the most important. But ultimately it's where are the links in the value chain that allow this technology to happen. So I'm thinking here about companies like Keyence, for example, a Japanese company, or Renishaw, which is one of the few great British companies.

LK: What do they do exactly?

SD: So Renishaw basically makes sensors of all different types. They either build their own machinery with sensors in it, or more often their sensors are attached to someone else's machinery. But this is how the real world translates to the digital world so that robots can be aware of their surroundings. Or even just on a simpler level, things like precision-engineering requires sensors to make sure that these incredibly fine tolerances that we have to work to now. So Renishaw are part of that, but the important point here, I think, is they are the enablers. The applications of robots depend on the technology that allows them to be aware of the surroundings like that. So we are quite interested in investing not just in people who make robots, but in all the supply chain that goes into that. And in some cases, we think that's almost more predictable. We know what components are going to be required for these things, even if it's not that clear how robots themselves might end up being used. And there will be a million different ways in which robots are used in the next 10 years that are different to how they're being used now.

LK: So that's interesting. This is the idea that it's these components that are going to be able to make these robots more intelligent over time. And I guess that ties into the theme of the intuitive surgical da Vinci systems that I was talking about at the start. In the example I gave of the double lung transplant, actually, it's the surgeon who's controlling the robot. But I know the latest Da Vinci systems are specifically designed so that in the future that they can incorporate more artificial intelligence and be more automated as a consequence. Is the lesson there that we may take years for this technology to reach its full potential, but that there's money making opportunities today?

SD: Oh, there absolutely is. And there's lots of money being made today. Intuitive Surgical is very interesting. I mean, they've been hugely successful in terms of the number of operations that are robot assisted. There's the art of the practical here. Are we really moving into a world in which some robot trundles into an operating theatre and just does its thing? I mean, I don't know how you're going to get people to accept that. Maybe sometime in the future. But what you do have at the moment is a huge aid, but it's still being overseen by surgeons.

But think about, for example, the need for a global expert in a particular type of surgery who can't be everywhere at once. And we do see, you know, now a very small number of people might be treated by that individual and they'll fly to see him or her. But what if, you know, through the use of robots that person can actually just be in one place and do operations all over the world? That's not outlandish. So I think that's maybe how we'll see some of this playing out before we get to wholly independent.

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Why don't I give you a different example, one that interests me greatly in an entirely different field, literally, is Deere and company, where they are employing seeing robots, if you want to call that, or AI, if you want to call it that, that can actually understand.

LK: This is farming equipment.

SD: Yes, yes. So you have autonomous vehicles that can trundle around in fields with machinery attached to them, which can see where the weeds are, sort the weeds from the crops, and only use pesticide on the weeds. I mean, that's completely game-changing, both from an environmental point of view, a cost point of view. And I think the cost thing is interesting, because back to this point about who might make a lot of money out of this, If you're a farmer and you can reduce your cost of pesticides by 90% by paying for a software licence for a bit of equipment that Deere and company supply to you, you're going to do that. And Deere & Co can charge quite a lot of money for that up to the point where it's no longer cheaper for the farmer. So these are real game-changing opportunities.

LK: So Stuart, you've discussed robotics. Let's move on to innovative healthcare. Historically, medical advances have typically come about via a mix of trial, error and chance. But is that changing?

SD: Yes, I think it is. Here we are, just finished 2024, and the big story of the last 12 months has been the creation of the GLP-1s, the Wegovy-type drugs that are now becoming wildly popular amongst those who need to lose some weight. That wasn't what they were trying to do. When these drugs were discovered by Novo Nordisk and Eli Lilly, they were actually looking at applications for improving treatments for diabetes and this just happened to be a side effect. Now it's probably not fair on them to say it's a total accident. These things are related to each other. But this wasn't the plan for how this drug becomes the next blockbuster. So fortuitous accidents have happened many times in the past.

The way that we treat medical conditions now is incredibly more advanced than it was 20 or 30 years ago. However, we're now moving to a place where we can actually start to understand the interactions of molecules and genetics in a way that just wasn't practical historically. And that has come about, so a quick history lesson, companies like Illumina came along, reduced the cost of gene-sequencing from $100m to a couple of hundred dollars in the last 15 years. That's created data sets which are almost unfathomably huge. But along comes AI to start to mine that data for meaningful relationships. And that should mean that we can now multiply the process of drug discovery literally a thousand-fold as we try and home in on things that look interesting and then automate the process of trial and experimentation.

So a good example here might be the company called Recursion Pharmaceuticals, which has actually not been a great investment in share price terms. And we'll come back to that. The usual short-termism prevails. But they're fascinating. If you look at how they describe themselves, they

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are doing millions and millions of tests to try and identify new types of drugs to possibly treat conditions that haven't even been treatable up to now. One of the interesting things is, as yet, they haven't met with a lot of commercial success and their share price has been challenged in the last few years. But I think that's because, in some ways, the regulatory environment hasn't yet caught up with this new approach to drug discovery. It still takes huge amounts of money to go through trials and bring drugs to market. And that's as it should be. We shouldn't be thoughtlessly experimenting on people, obviously.

But if you look back to the way that – to shift to a different company – the way that Moderna rolled out its vaccine. Everyone knows about Moderna now. We invested in it before this happened, and kind of like the rules went out the window and the vaccine was created in two days and then took 10 months to actually become available.

LK: This is for Covid, isn't it?

SD: Yeah, sorry, for Covid, yeah. I think it's an interesting question. We've now gone back to business as normal where it takes ages to go through the normal trial process for drugs. I wonder if one of the problems that these new innovative companies have is that the regulatory system just hasn't really caught up with the speed of evolution now and I think that's making, well I hesitate to say holding back, I wouldn't want to give the impression that we should be cavalier about this stuff, but I think it maybe is holding back some of the ability of these companies to come to market. And in a rising interest rate environment people start to question if they've got enough funding to get to profitability. In the last two or three years, that's what we've seen is rising funding costs have created uncertainty over a lot of firms who are trying to do really good things but just might run out of money before they get there.

LK: So with these companies, the advantage is that we get medical breakthroughs quicker. But it's not just about speed, is it? It's also about bringing down costs.

SD: Yeah, so that almost goes back to the demographic thing that we started with. Any reasonable assessment of the ever-rising share of healthcare in economies around the world dictates that at some point it just becomes unaffordable. You don't have enough people creating wealth to treat all the old people. You know, so it's almost not more complicated than that. That very strongly drives progress to less expensive, more effective healthcare treatments. One of the challenges you have there, of course, is health systems are so under pressure from a cost point of view that they actually find it difficult to make investments in things that might not pay off for five or ten years.

So that, I would argue, that needs a bit of rethinking as well. When we talk to some people who work in health, they talk about government procurement and risk sharing. to try and create critical mass, to try and create breakthroughs that can then be applied. But it's really hard because funding pressures are so hard on companies. But it's got to happen somehow or other. Otherwise, you

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know, at some point there's a tipping point and treatments just become unavailable because they're too expensive.

LK: And you've mentioned recursion and Moderna, but how broadly exposed is Baillie Gifford to this sector?

SD: Well, we've got a lot of money invested in our various global strategies in different types of biotech companies. And we don't, of course, invest in all that many companies. We have to challenge ourselves as whether the right way to invest in health care is to rifle shoot. And we think there's one that we think has a decent chance of being a winner or whether actually it's difficult to do that. Buying a basket of innovative healthcare stocks might be the way to go.

Big Pharma have actually been quite good at innovation, perhaps more so than we expected them to be. You always think that innovators' dilemma, when you've got a tremendous book of business, you don't want to disrupt it. Big Pharma, maybe, are more in the process of disrupting themselves than we had initially thought they would be. We have actually invested in, for example, Novo Nordisk for quite a long time. Maybe that's actually becoming a more rather than less attractive investment as they start to demonstrate that they can innovate.

LK: OK, that's innovative healthcare. If we move on to energy, we're recording this shortly before Donald Trump's inauguration. Does his second presidency and some of the other developments that we're seeing in politics change the way that you think about the opportunity for renewables and electrification?

SD: Yes and no. Well, nobody knows what President Trump's going to do, in my opinion. I'm not even sure if he does. But it goes back to this inevitability thing. I think our energy transition is going to happen. We've probably now largely got sufficient momentum that it doesn't need to be politically pushed anymore. It's just cheaper to create electricity through solar and wind in particular. The real problem is we don't have any ability to store it. So you've got this intermittent source of energy which actually can't stand on its own and hence all this discussion about how long do we keep going with fossil or even create nuclear. But the momentum is there, the electricity generation part is cheaper and we need to work on the storage part. There are companies out there doing amazing things to advance our ability to store power. So CATL is a Chinese company that's probably the most advanced battery manufacturer and has the best technology in the world. And they continue to iterate. Someone put it to me recently, they just work their way through the periodic table trying to find better ways of doing this. And I thought that was a lovely way of putting it.

There are challenges about raw materials around batteries that you'll hear, but there are other companies, Redwood Materials in the US is one where they are working very hard to create batteries out of recycled or reclaimed raw materials. So there's lots of things going on. So that's a long answer to a simple question. I'm sure that politics will happen and it might cause our energy

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transition to go faster or slower, but I think the economics stand on their own. So the politicians don't really need to, they just need to not get in the way of it and it will happen.

LK: So that's the inevitability. I just want to bring you back to what we were talking about earlier, though. What role does optimism have to play in this when we're looking at the sector?

SD: I think you've got to be slightly bloody-minded and relentless in looking at what is going to happen, and I think it is going to happen, rather than focusing on what could blow it off course. There's a concept that I'm interested in called stubborn optimism. I think it came from Christiana Figueres, who was one of the leading lights in the original Paris Climate Agreement. Stubborn optimism is not naive optimism. It's not, oh, everything will be fine and we'll just keep investing. it's a realism about how do we think progress is actually going to happen, how is it being made. The underlying point here is that progress is caused by scientists and entrepreneurs who do not get sidetracked into things that they have no control over. So this day-to-day-to-day progress just happens. You know, there's never a headline about incremental change happened yesterday in the energy transition, but it amounts to huge change in the very long run. So I think the optimism bit is focused on the progress that is being made and where we might get to and the steps that might need to happen to get there and you have to really make yourself do that otherwise you get caught in this sort of negative news spiral and before you know it you're just investing in dull companies that you know will survive come what may.

LK: Of course, some of the companies that we do invest in might seem dull to people who don't really know them, but still have incredibly exciting growth prospects. Cable manufacturers, for instance.

SD: Yeah, cable manufacturers. So there's a couple of companies really that dominate, Prysmian and Nexans. They both manufacture and install subsea cabling, amongst other things, which is incredibly high value. If we're going to solve part of the climate crisis by sticking offshore wind turbines all over the place, which incidentally looks likely to happen because nobody wants a wind turbine in their backyard, do they? Well, how do you bring that energy onshore? You do it in great big cables. And the last thing in the world you want to do is to have to bring those cables up because they're unreliable, there's something wrong with them. So, you've got a couple of companies with a huge, long runway and it's a not very competitive industry, so they're likely to be able to have some pricing power to do very well out of that.

LK: And by pricing power you just mean the ability to raise its prices without losing a lot of sales?

SD: Yeah. That's it. There's other things. I think you had my colleague Mike Taylor on. So go and listen to him. He loves talking about telegraph poles. I'll not rehearse all of that again. But there is lots of adjacencies in the energy transition where maybe we can make... Actually, here's a final one. Enphase. Enphase is a favourite of ours. Basically, it's a solar inverters and solar installation company. I think that probably sounds quite boring. But they have a tremendously strong position in

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the rollout of solar, particularly in the US. And their tech is better, and they have a great network of installers. It's a very local business, obviously. They can start to do tremendously well out of this. And particularly as battery technology improves and it becomes wholly practical to power your house. Depends where you live to some extent, not that wonderful here in Scotland, but you can meet your energy needs properly with a combination of batteries and solar panels in a way that just creates this distributed grid which couldn't have existed 10 years ago.

LK: From complex infrastructure of one kind to another, you also point to the potential for the companies providing the digital plumbing behind some of our payment systems. Tell me about the opportunity there.

SD: So the one I have in mind here to begin with is Adyen, which is a Dutch payments company.

If you look very carefully, sometimes when you're flashing your card in a shop to buy something, look on the terminal and you'll see Adyen quite often at the bottom of that. What that means is they are providing the plumbing in the background of some name that you do know. And so these names are Uber, Spotify, H&M, Booking.com, Netflix, McDonald's. All rely, or at least in part rely, on the financial infrastructure that Adyen provides them. And in a nutshell, that is the ability to, without any fuss at all, to take payments in different parts of the world in multiple currencies to translate that back to where it needs to be. And it's completely seamless, and it just exists in the background, and nobody really stops to think how important that is. If you take the example of Netflix, how do you roll out in dozens of countries in no time at all in a fully digital format in a way where payment isn't a barrier? And Adyen just come along and take care of all of that. So that's very interesting.

Maybe a couple of other ones. Nubank, a wholly digital bank that started in Brazil is now growing further into Latin America. Very straightforward. The banking sector in Brazil is sort of pretty hopeless, basically. The traditional banking sector, you still have to go and stand in a queue to pay your electricity bill. An hour later, you haven't had any success, and you have to go back to work. So Nubank has come along and offered much cheaper, much more accessible digital banking. They've gained 100 million customers in about 10 years or something. So they've been incredibly successful.

And then maybe the final one to talk about that we invest in is Wise. There's also a somewhat similar company called Remitly. They're all about affordably exchanging currency, or in the case of remittance, specifically aimed at remitting currency. When people work in developed economies and send it back to less advanced economies, how can they do that affordably? There's huge, huge international flows. which the banks, historically, has been a wonderful business for them. I always think it's funny when you get these offers that pop up on your phone or something and it says, commission-free foreign exchange. And it's just, that's laughable. There's a 10 per cent spread, but you don't have to pay commission. So the banks have been taking advantage of the fact that

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people don't understand that for a long time. And that's all now up for grabs. You can change currency in the blink of an eye on your phone.

LK: So that all brings us to the last of your themes, autonomous transport. You talked earlier about the way that Deere is making progress in this area on farms. But if I can play devil's advocate, we've recently seen General Motors cancel its robotaxi project after spending billions of dollars on it. And for most of us, we still can't get our home deliveries brought to us by drone. So what gives you confidence that we're going to see tangible progress in this area over the near to medium term?

SD: Well, the first thing I would say, Leo, is you're not that far away from getting your groceries delivered to you by a drone. There's a company called Zipline that we invest in. I'll give you the very brief history of that. They started with long-distance drones in Africa where the infrastructure is poor, delivering time-critical medical supplies, and very quickly became a very attractive proposition for governments in those countries. They have since expanded to making different kinds of drones and moved into developed economies, notably the US, where they are now actually, they have drones that can pick up your groceries and literally drop them on the picnic table in your back garden. Now, you know, that's not mainstream yet. You need a huge amount of density to make that a sort of sensible commercial proposition. But these things are not far away at all.

People think of autonomous transport as driverless cars. And there are a couple of use cases which are almost near-return businesses. So one of them would be a company called Aurora. They make kit which can be installed in trucks which basically makes the trucks able to self-drive. Now, it's easier if you think of long-distance trucking. It's certainly not easy, but it's a lesser challenge than an autonomous vehicle which can go anywhere and deal with any circumstance. So Aurora are pretty well advanced in developing the software and sensors and everything else that they need to make this a realistic possibility. And I think we might see driverless trucks in the next couple of years if not fully autonomous. cars.

LK: So Stuart, that's robots, medical treatments, energy, payments infrastructure, and autonomous transport. And that list of growth opportunities of things that are both inevitable and investable is far from exhaustive. Can you leave us with a final thought about this?

SD: We're well aware that wars are going on, government debt is huge and growing. There are all these things to worry about. I would not for a minute want to suggest that this is not important. But just put that to the side and think about what are the opportunities for investment. Focus on the possibilities. Focus on what's changing. Focus on the great entrepreneurs out there who are trying to provide solutions to problems or just find better ways of doing things. And then have a bit of patience because you don't know exactly how things will unfold. We're in a fantastic environment for trying to find these areas where things are properly changing. Applied technology in the real world is changing faster than we've seen for a very long time. So we're quite excited about all of that.

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LK: Well, Stuart, that's a great place to leave it. But before I let you go, one of the things we like to do on this show is ask our guests what books they're reading. So what's recently found its way onto your bookshelves?

SD: I'm consciously trying to understand the world of cryptocurrency better. I'm trying to get my head around the idea that crypto is a valid means of exchange and currency. So anyway, I first read *Going Infinite*, which is the tale of Sam Bankman-Fried and FTX collapsing. It was interesting, but I didn't feel I got a huge amount out of it. It's not really about crypto.

LK: That's by Michael Lewis, isn't it?

SD: Yeah, Michael Lewis. He's the guy who wrote *Liar's Poker* and then many things between then and now, but a great writer. He just happened to be on the ground when the whole FTX thing was unfolding.-Depending on your purposes, the more educational book, perhaps, is one called *Number Go Up* by a Bloomberg journalist called Zeke Faux. And he kind of goes the other way. He's definitely a crypto sceptic. There are many examples of where crypto is just a total Ponzi scheme. He takes an in-depth look at what is crypto for. And he doesn't come up with a convincing answer, it has to be said. But I think we should not be closed-minded. But if you want to go and try and better understand how the whole world of crypto unfolded in recent years, then that's a tremendous read.

LK: And there are, of course, people who've made a lot of money as well as lost a lot of money on crypto. But it's a very different type of investing, isn't it, to what we do at Baillie Gifford?

SD: Yeah, it couldn’t be more opposite, I think. If you look at crypto itself, rather than the ecosystem around it, it's not yet, anyway, about capital deployment and wealth creation. It's people trading an asset against each other. No, it couldn't be more different. We don't directly invest in crypto, at least at the moment. Although, as I said, we need to never be totally closed-minded.

LK: Fascinating as ever to talk to you, Stuart. Thank you so much for coming on to the podcast. Hopefully, we can get you back on again soon.

SD: Thank you very much, Leo. Delighted to come back whenever you want me to.

LK: And I hope you enjoyed listening to this conversation. If you'd like to know more about Stuart's thoughts on inevitable and investable opportunities, you can read a spin-off article to this podcast on our website at bailliegifford.com/podcasts. We've also linked to some of Stewart's other recent writings as well as his last podcast appearance in our show notes. And if you haven't already done so, please do subscribe to this show via Spotify or any other podcast app to be first to know when the next episode drops. But for now, listeners, I look forward to briefing you again next time.

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Show notes

Summary:
One way to find great investment opportunities is to ask yourself what must change over the years ahead. In this episode, Baillie Gifford partner Stuart Dunbar explores the increased use of robotics to fill gaps in the workforce and medical advances that help keep healthcare affordable, among other transformational themes.

Background:
Stuart Dunbar is a client relationship director and coordinates Baillie Gifford's global marketing and product development activity, which includes responsibility for the firm's Actual investors campaign.

For this *Short Briefings…* episode, he challenged himself to identify five transformational growth drivers that are both inevitable and investable. His picks cover:

- the rise of robotic systems that can make sense of their immediate environment and act autonomously
- the intelligent design of drugs and other efforts to deliver less costly, more effective healthcare
- the energy transition to renewables and electrification of transport
- greater dependence on the infrastructure underpinning digital payment systems
- the dawn of automated transport, including driverless trucks and delivery drones

Dunbar explains the factors making these forces of change necessary, including the ageing populations of many developed countries, the resulting labour shortages and rising medical budgets.

He also names some of the companies we have backed that could benefit, either by pioneering new or better ways of doing things or by playing critical roles in the involved supply chains. These range from John Deere & Co, whose self-driving tractors and precision-applied pesticide technologies help farmers increase yields and cut costs, to Nexans and Prysmian, whose extra-high-voltage cables connect offshore wind turbines to onshore energy grids.

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Resources:

Actual investing: why thinking differently matters

Christiana Figueres: stubborn optimism

Eureka Alert: Cheryl Mehrkar's robotic surgery

Michael Lewis: *Going Infinite*

Stuart Dunbar on growth investing (video)

Zeke Faux: *Number Go Up*

Past *Short Briefings…* episodes

Companies mentioned include:

Adyen
Amazon
Aurora Innovation
CATL
Coupang
Deere & Company
Enphase
Intuitive Surgical
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Moderna
Netflix
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