Daniel Hilson:

Unleashing AI in Fleet Electrification for Net-Zero Goals

EPISODE #038

Daniel Hilson (00:00:00):

A big vision I guess for me in the long term, and I guess probably a lot of people is how does this all work When the grid can talk automatically to a system that's autonomous and has the ability to respond in very logical ways, that is a very big question. And that moment where a grid is intelligent, the vehicle is intelligent and they can communicate real-time messages about savings and all these things, as a completely rational actor, that's going to be a very interesting future problem that needs to be solved. We have done trials, so in Australia we did a trial with a company called Busways and Endeavour Energy who was a distributor and we actually, we did say send them signals, Hey, this is what the load is right now, and they could respond. It was very R&D and a lot of these are still R&D. But look, there's big vehicle to grid (V2G) trials. There's this is definitely something that's actively happening. Grid companies are very alive to this opportunity now. This is a huge revenue opportunity for them. So they're investing, they're engaged at least from their side.

Jaspal Singh (00:01:09):

Welcome to the Mobility Innovators podcast.

Jaspal Singh (00:01:15):

Hello everyone. Welcome to another episode of Mobility Innovators podcast. I'm your host, Jaspal Singh Mobility. Innovators podcasts invite key innovators in the transportation and logistics sector to share their experience and feature forecast. This episode we'll be discussing electrification and energy transition.

Our today's guest is the founder and CEO of Evenergi and Betterfleet. EV Evenergi is a company that focus on accelerating the adoption of electric vehicle and helping smooth transition to zero emission technology. The company works with utilities, fleet and businesses in implementing EV charging infrastructure and optimizing their energy system. He also launched Betterfleet to plan, optimize and manage the transition to zero emission.

Before co-founding EV Energy, he worked with some key player including Flow System, Veolia Environment and Siemens. He's a lifelong learner and has earned a degree in environmental management and strategy management.

I'm so happy to welcome Daniel Hilsen, founder and CEO of Evenergi. It's time to listen and learn. Hey Daniel, I'm so happy to have you on the podcast. I'm really looking forward to a discussion. Topic of energy transition is on everybody's mind. Everybody's right now talking about electrification, how to move towards zero emission, so it's great to have you on the show.

Daniel Hilson (00:02:36):

Thank you. So good to be here. I'm very big fan of the show, as I said to you when we caught up at the UITP event in Barcelona, so you're very happy, big fan of the show.

Jaspal Singh (00:02:46):

Thank you so much. I mean, really encouraging to hear from you because at the same time I'm a big fan of what you are doing and I love entrepreneur who are building something and trying to solve some big problem.

Why don't we start a discussion with your personal journey because it's very interesting when I did some research and I found your education background, you did bachelor's in music and communication and later on you did double masters in Strategic Management and Environment Management, which is

completely different things. And later you work with some key infrastructure player before creating Evenergi in 2017 as a solo founder, which is again very remarkable. So can you share some key highlight of your professional journey and actually what motivated you to shift your career from executive to founder? Because the transition is not easy. A lot of people do that and then they feel it's hard to be an entrepreneur.

Daniel Hilson (00:03:44):

Yeah, look, great question. I mean, just to be clear, I do have a co-founder and from my perspective, the highlight really started when I found that nexus between my passions for business and climate technology really sort of took off for me. Obviously I was very passionate about music. I did play jazz and classical and all sorts of things, which was amazing experience and privilege. But really for me, my career kicked off at that point and I like really big heart problems. I like real world problems. It's very inspiring and obviously very motivated by the challenges of climate change. And so highlights for me, I guess big infrastructure projects like airports were early on. For me looking at precinct infrastructure was a theme that I went into. And then the most exciting first point was working for Siemens and getting a career start in sustainable cities, thinking about really large precinct scale problems around energy and waste transport and working with universities, campuses, those were really exciting problems.

Daniel Hilson (00:05:00):

How to optimize at that scale for sustainability was great, fun, very rewarding, felt like it had great impact. I worked at Veolia in a very similar role looking at that kind of precinct and city scale, district healing and cooling systems and how would mobility play out. And then my last role was very inspiring. It was a company called Flow Systems that was part owned by Brookfield Infrastructure, which really took that to the next level was looking at new communities and how do you build new communities for decentralized water, energy and transport, which really led me to the nexus of my current startup that I founded, which was we were building a big science park and I was doing the analysis for large scale microgrid and a decentralized energy and water network. And really the question was on everyone's lips from an infrastructure funding perspective, how much electricity we need for transport.

Daniel Hilson (00:05:55):

And no one really knew. I mean this was 2014, so I had to get conviction and I got conviction and I said, this is going to be big, this is going to be a hard problem. Which led to my company, which is the highlight of my career I guess you could say it's not my first startup. I did have a startup when I was about 25 many years ago. I'm aging myself. And yeah, that was a software company, but this is sort of a larger scale business and something that's been very successful. I had some challenges in other business. I've had highs and lows to be honest and learned a lot along the journey. But this was really, the autonomy is obviously very stressful running your own business, but the dynamism and the impact you can have when you're trying to scale a solution in the sustainability space and trying to build a good corporation that can add value to staff and it is really exciting. I love it.

Jaspal Singh (00:06:51):

Yeah, no adding value I always tell is the real purpose of entrepreneurship. If you can really add value and solve some big problem because there are a lot of new venture which start and solve some small small thing, but solving the climate and environment issues, it's really big heart. And when you said there are a lot of ups and down, so somebody told me our heartbeat is up and down, so if it's straight line, it means you're dead. So same as like entrepreneur life, you have to have up and down. It means

the entrepreneurial life is alive and we are thriving. Now you mentioned that this is a company you found really passionate about Evenergi and the company's helping different stakeholder to plan energy transition. And you rightly said in 2014, people have no clue how much energy they need or how they should plan where to start.

Jaspal Singh (00:07:37):

That was a bigger challenge. They were saying, and with your company, you're actually helping them in planning and you have worked on some, I would say one of the largest transition in the world including 8,000 vehicle, 56 depot transition for New South Wales government in Australia, which was quite remarkable. And then you work for entire Welsh government network, King County Metro in Seattle, Honolulu, and TfL network for private operators. So can you tell in more detail what problem Evenergi is solving? You give a global glimpse, but I would love to know a little bit more in detail and if you can share some case studies like how client reach out to you and then you provide the real solution to them so that they can expand and they can move to our transition.

Daniel Hilson (00:08:19):

Sure. Well look, I mean the spirit of big heart problems, I mean our mission is to accelerate the transition to zero emission transport. That's the macro mission, right? So if you look at it, how do you solve that operationally? Commercially, how do you make that transition simple, enjoyable, operationally efficient and commercially optimized, that's a really great sounding mission, but it's really difficult. And on the ground, the reality is there's a lot of confusion, there's a lot of resistance, there's a lot of bad experiences to be quite frank that have occurred in this transition, which is leading to a lot of fear. And so when you look at that and you say there are just a lot of problems to solve, so there's not really one problem, but the macro problem is we need to solve this climate problem, we need to do that quickly. How do we make that happen at scale all at once is a very challenging problem.

Daniel Hilson (00:09:11):

So obviously when we started, we started micro and we had to do some projects. We were lucky enough to work with the ACT government, I think it was our first project. There's a large government fleet. This is similar to Washington and Australia, it's the capital. And it was really just this was a very early transition there. Usually what happens is a minister or someone's made a commitment and then the operational people go, how do we meet that commitment? That just seems so difficult. So that was really total cost of ownership, modeling, infrastructure selection, how do we do these things? And I was in the face of that talking to the customers, my co-founder and the technical team of building algorithms to try to do that faster. How do you scale that quickly? And so we I guess went from that point, the New South Wales government, again, huge ambitious and admirable commitment from a minister.

Daniel Hilson (00:10:02):

And then the question is how do we give them an accurate budget, 8,000 vehicles, 56 depots, how do they sequence that? How do they integrate with the grid? So this is when we first build our digital twin, which has become our core technology platform, the Better Fleet platform. And we actually kind of naming ourselves better fleet in the US, just by the way. So that digital twin platform enabled this level of accuracy. We could model the topography, all the routes, all the block schedules. How would that impact in terms of the efficiency of vehicles? So we built a physics model around the vehicles. And so you really think about a digital twin with vehicles running around that New South Wales network coming

back to Depots charging for periods of time, what does that do to the network in terms of the grid requirements of that depot?

Daniel Hilson (00:10:50):

So that digital twin then enabled us to do scenarios and that's what people wanted. So they wanted to be able to say, but what if we got hydrogen? What if we get faster charges? What if we do on route charges? So with that base, we could then build on top of that this really powerful scenario engine, which is how you solve this problem because when there is no answer, you have to optimize to a problem. So go ahead. Looking at the private operators with other problems that they had, they had to bid for eight-year contracts when people were saying to them, you need to do zero emissions vehicles and transition. And they're like, well, we don't even know what vehicles. We don't know what infrastructure. We don't know how to do that. So we had to give them very accurate models so they could put in bids that they could put their hand on heart.

Daniel Hilson (00:11:33):

So many of these challenges and King County Metro you mentioned they wanted to visualize what was happening. We had this digital twin, there was no front end. It was very much, I mean there's a front end, but it wasn't visual enough. So we built a demo emulator and people could see the vehicles coming in and out and then they could get buy-in from their stakeholders because people don't believe it's going to happen, it's going to work. We could show them visually. Then when you get into the real-time environment and our charge management, we've got better Fleet plan, which is the planning software, and then we've got better Fleet manage, which is our management platform. People that don't realize the same problems, how do you park dispatch? Will that vehicle meet that route based on the topography? The climate on that particular day is a very different problem, particularly for electric. How do you do that is different. King County Metro, a big temperature drop between days can be a 40% efficiency difference, right? Yeah, sorry, lots of problems. It is a place with a lot of problems to solve and hopefully we're helping with that.

Jaspal Singh (00:12:38):

That's amazing. And I love your point about what you're creating of digital twins for fleet operation and you rightly said, when operator doesn't know how things will look like in eight year or 10 year, it'll be very hard for them to put together things. So how will you bid? How will you ask for budget, how much money you require, how much infrastructure you require, how much electricity load you require? And what I'm seeing is a lot of operators are feeling scared by listening to all this stuff and they feel like it's too complex. Let's not just do it, let's just avoid it. But I think what you're trying to do is you can make the picture more clear to them. It's like you have a crystal ball for them and they can see in crystal ball and say, okay, this is how things will look like for our operation and let's go for it. So that's a great job.

Daniel Hilson (00:13:26):

Yeah, thank you. I mean it's definitely finding a lot of value around the world and that's why these operators are using it because that uncertainty with people particularly have to plan in 10 year timeframes. A lot of operators have to do budgets for way into the future and it's been very difficult for them. And these are big dollar amounts, often hundreds of millions of dollars of budget.

Jaspal Singh (00:13:51):

They each bus cost more than US$ 1 - 1.2 million. So even a hundred buses cost $120 million. Now you mentioned that you are doing all over the world, so that's something very interesting. Evenergi started, I will not say Evenergi is very old company. You started 6-7 years back, but already you're working in different continents - Asia Pacific region, North America, you are based and then also you have client in Europe and you must have seen that many countries have set their own net zero goal. Somebody want to achieve net zero by 2040-2050. Somebody want to be more ambitious and say 2035, but the mission is same, but the path will not be same. Everybody has to take a different path because each country is very different. So can you share some of the difference between region and impact of local climate and some of these operation reality, like you mentioned about King County Metro, low temperature and suddenly the boom you need more heating and more energy consumption will be required. And if I may add which region will lead in decarbonization race, like you're seeing race between different regions, which region will be the winner?

Daniel Hilson (00:15:01):

Okay, that's a good question. I mean on the first part, I guess when you look at particularly electrified transport, there's definitely very big impacts in terms of things like climate and topography. So we've done work in the Welsh government as you mentioned, a lot of temperature drops, a lot of difficult topography. Talk about Singapore, we've done work stream humidity, heating and cooling is a very big energy ancillary load. So it does have a very big impact on the efficiency of vehicles. So that's one big thing. You look at places like London and New York, spatial constraints is a huge thing and you've got to, whether it's hydrogen or electric, there's new equipment that needs to go in. And some of those depots are so incredibly spatially constrained just because of historical purposes. I mean trying to get a piece of land in London right now for a bus depot is not an easy task.

Daniel Hilson (00:16:00):

So then you've got some obviously the difference model. So there's franchise models in some countries obviously fully government run in others where the behavior is very different, the optimization that's needed when you are competing for a region drives different behaviors and different sort of outcomes. So I'm talking mainly about fleet because that's where we're focused at the moment. And then there's grid constraints. I mean there's some places in for example, the Netherlands, which is very advanced. There's just literally some places you cannot get new grid, new grid capacity doesn't exist. So that's another sort of example of where that can be a challenge. Obviously with hydrogen, the same thing. There may not be hydrogen physically available economically or at all. And Honolulu is really an interesting one. They've got enormous solar resource. And so for them, the goal when we worked with them was like, can we just use that solar resource for two reasons?

Daniel Hilson (00:16:56):

It's obviously very environmentally beneficial, but also the cost of using outside of that was very prohibitive. So the whole design of the entire system was very much geared towards how do we do super-fast charging, have on route charging to make sure that we can do that. I mean in terms of the race, look, obviously it's different in different political climates, different even vehicle classes. So for example, Norway has always been the leader to a large extent, incredibly ambitious, very strong legislative environment, lots of sticks. But China, they just came in and said, we're going to electrify our buses. And they just did thousands and thousands of them all at once. So kind of depends on how you define leadership and it also can be very regional as opposed to national. So California is very strong.

London's very strong. So there's a lot to do with geopolitical and local conditions that overlap that I mentioned. I guess a plug for us where you plan well, you can move fast and that's in any environment. If you do plan well, you have a plan, you can execute faster.

Jaspal Singh (00:18:10):

I love your last line. If you can plan well, you can move faster. So it doesn't matter even if you have big money or big resources, but if you fail in planning and everything else will collapse. So who will be the winner, ultimately the country or the city which can plant well and move forward and do it. And something you mentioned a little bit about the grant program, like many cities are funding, many countries are funding and some countries are funding capital model. Some countries are funding operational model. There was a study done by International Energy Agency (IEA), and we'd say that to reach net zero emission by 2050, we need at least $4 trillion investment by 2030. So we need huge investment in coming years. So this is a big investment number. How do you think agencies can fund that? Did you see any good grant program available to fund increased expense? Because for operator, that's one of the biggest challenge. When I talk to them, they say my cost will double, the CapEx cost will double or triple. So why should I do it and how will I fund it? So can you share some example of grant program and which you feel probably agencies should explore to get these money?

Daniel Hilson (00:19:27):

Yeah, I mean look, obviously globally there's many, many programs and I think if you step back from grass for a second and you say, how do you get this to happen? There's obviously sticks and carrots. So there's emission standards in Europe which are very effective in driving long-term behavior typically. I think a lot of people would say that's a good approach. It depends on who you talk to. There's obviously carrots of grants, so that's a key weapon in the decarbonization approach. And in the UK there's a ZEBRA program, a lot of money going into decarbonization. It's complicated because you've got operators and agencies and you've got to figure out how that all works. Obviously the U.S LoNo has been the core driver in transit for decarbonization. In the U.S. there are hundreds and hundreds of grants, state grants, grants through municipal planning organizations, federal grants through the Department of Energy or the Department of Transport.

Daniel Hilson (00:20:29):

So being sort of strategic about those and they break down into I guess in some ways the grants that are really about innovation and the first projects and the grants that are supposed to be more programmatic. And a lot of the recent conversations I've heard from people is like, we need to move into that programmatic, don't make this about a competition where someone wins a competition, they put everything into it, they over promise off because they just want to win the competition. And I've seen a lot of examples of the project not working because they can't spend the money against the plan they've over promised. So I think we are moving to that phase of, in the UK there's some good programs which are really on consumption based programs.

And then in the US there are some programs around that. So I think it's separating the innovation. So the smart grant, we actually just got awarded a grant from the California Energy Commission, which is a integration innovation project. So it's $1.7 million which could lead into a much bigger grant if we're successful. But that's really innovation, it's very clear that's trying to solve the grid integration and resilience problem which needs to be solved and then we can scale it as a commercial business if it works. So it's really about understanding those different types of programs and the stage that you roll out the different programs.

Jaspal Singh (00:21:49):

Amazing. So firstly, congratulations for winning that grant. And it's a good news and I agree with you, this grid side management, you need to have involve them in the room in the discussion in your planning. And that's what recently I was discussing with a couple of players and I said, have you ever talked to your grid agency and tell them that you are going to electrify your whole fleet and you need that much of energy? And I was shocked because the answer was NO. And I said, guys, that's the first person you should go back and talk to them because otherwise you will be in a big trouble. So what you mentioned about that innovation program, no, it'll be interesting. I'm happy to put more detail in the show notes so that people can explore what you guys are doing in California and how they can use similar model in their city and state.

Daniel Hilson (00:22:31):

Yeah, just one quick point on what you mentioned before about grid. One of the really important things I have to harp on planning, and obviously I've got an interest in this, but the grid providers don't want to know your one-year plan. They want to know your one-year plan grid providers plan in five-year blocks in the minimum you're going to be put in a big zone substation somewhere in your grid. You are planning for a whole region of different diversified uses you don't want to plan for. And so what's been happening a lot is you go to your grid and you say, look, I want to buy five buses or five trucks. And they're like, okay, well we can't really help you. If you go to them and you say, look, over the next 10 years we are going to buy a thousand in these different locations, that's very meaningful information for them. So some of that integration is also what do you take to them when you speak to them is really critical

Jaspal Singh (00:23:20):

And show them that you have a long-term plan because then they see business. Ultimately, they want to make business out of it. And I really love your point when you said they think about in five-year block, so they don't think year to year what is your requirement next year they want to see what you want to achieve by 2030 and 2035. So it's important point. Something I also want to discuss with you because you are working in different regions and different cities, you mentioned about that each region has a different business model. I think the role of private player is also very critical for this whole energy transition. So we need to look more public-private partnership approach to make such investment. Like I've seen some cases in Latin America where there are some utility companies which are not only bringing the fleet but funding the whole infrastructure and giving to the operator. How different regions are structuring their business model or contract type still they're using the old contract type for electric buses or do you think they should change their contract type depending on the new vehicle technology? And do you see there are benefit to go for this PPP model for agencies to fund this whole infrastructure thing?

Daniel Hilson (00:24:26):

Yeah, look, I mean it is a little bit regional, but I think as an agency the key starting point is to strip it back to just the fundamental system. So I look at the whole thing as a system, whether there's hydrogen, whether it's electric, there's an end-to-end system from the production through the transport and delivery through the depot and the vehicles. So if you're going to start PPP, make sure you understand all the components of the value chain because ultimately what a PPP is bringing is finance and risk abatement. And so if you don't understand what your financing and the risks of the things you're doing, it's very easy to get washed into an arrangement that is not necessarily beneficial. Either

it's too expensive or you're abating risks that aren't really that risky. So if you can understand those risks, then you can really make a very solid informed decision about whether that's a good decision.

Daniel Hilson (00:25:17):

So in some cases it's just a capital availability problem. Look, the one thing I will say is there is billions of dollars that want to come into this space. We work for lots of those people, they use our software, they're great. And so we believe in the model and there's no lack of funding and it needs to be how do we unlock that? Because cost of capital for a lot of agencies just isn't the problem. They can borrow money a lot cheaper than anyone. So if you sort of say then the risk problem, I mean a lot of people in London for example are using that model to get off the ground and they'll do a project and say, right, we need to push a lot of the risk onto somebody and as they learn they can bring it more in-house over time. That's been quite a common thing in some regions, but it's really being in the driver's seat by having that understanding, knowing that kind of un-garnished model if you like and you know what all those things are and then you can sort of build on top of that.

Daniel Hilson (00:26:14):

Is it good for your balance sheet? Is it good to do that? Now one thing I will say is we're a big believer in charging hubs. I can't announce it, but we have some very exciting projects emerging in fleet charging hubs. And what that is essentially a charging hub that sits outside of a fleet, like a transit fleet or a school bus fleet and you go and use it like a petrol station or a fueling. Now that's good because it's off balance sheet, the private sector can get on with it, but they need data to do that. And we're working on projects where we're saying can we get regional fleet data to help give the private sector what they need to understand how to finance because it becomes a much better proposition if you've got understood load that you can finance against. So I believe in charging hubs, it does fit the infrastructure model. Also believe in large-scale precinct development, if you're going to build a big transit hub, you want to build a building on top of it. Vehicles are great for that. You're moving away from diesel, which you can't build on top of depots because of the noise and pollution. That's a great use case for a PPP. So yeah, there's sort of cases where it works well,

Jaspal Singh (00:27:23):

That's a good point. You mentioned about charging hub because I was discussing with few agencies and I was mentioning to them, why don't you allow private vehicle to use the charging infrastructure during the daytime because when the buses are out, so you don't need the load, but it can be used by some other player. And I have seen some agencies are now thinking about it and the second point which you mentioned, I think that's very important for people to understand in the beginning, it's better to give risk to the player who can understand that risk. Over the period when you get more educated, you can take that risk in your own balance sheet.

Like example, I see some of the Spanish players when they procured the electric buses, they took warranty for 12 year for the batteries and now they realize that we don't need to do so much of risk assessment or risk management for the batteries. It's okay to take in our own balance sheet. So in the next contract now they're not going for 10 year warranty, they are going only for standard three-year warranty because they understand they can manage that risk. So that point is very important. And what you said is city need to plan. They need to think about how my ten-year or twenty-year will look like and where I should start putting the blocks now the foundation blocks.

Daniel Hilson (00:28:34):

Yeah, exactly. And it goes to the same point, having the understanding internally and that plan, because again, if you do commit a hundred percent to a particular model and in two years you're locked into something and it's very rigid, it doesn't let you innovate to new technologies and you're really in the hands of third parties, that can be quite a problem. So yeah, if you had that long-term plan, you go, look, we'll do this first one, we'll learn from it, and then we've got two or three others. That can be a very good way to structure the transition for sure.

Jaspal Singh (00:29:04):

Yeah, that's interesting. Thank you for sharing that. Now, one question everybody asked me is the total cost of ownership. And everybody say the electric buses are expensive, you save money from maintenance, you save money from diesel and the electricity charge, but still the total cost of ownership is high. Interestingly, one of the founder I spoke recently and she mentioned that the cost of ownership of electric vehicle will start going down from this year onwards. So we have kind of reached a tipping point. What is your view on that? And as you're working with different stakeholders, what do you think about the total cost of ownership? Have we reached the tipping point yet or it'll take a little more time?

Daniel Hilson (00:29:48):

Yeah, look, I mean unfortunately it's a little bit use case specific. So in some use cases, if you look at Ubers in California, they're all Tesla's. There's, sorry, not all, but there's so many Tesla's now. I mean the reason for that is the residual values are really strong. So in our model we build, there's so many components, there's how far do they travel? If you've got an operating model where you're getting a return on investment as you operate a vehicle, it really doesn't matter whether you travel longer distances because a payback is much faster the further you drive. So these Uber drivers, why are they doing it? Obviously there's some incentives in California, but putting that aside, the residual values are great and Tesla talks about a 1 million mile battery, or sorry, a hundred thousand kilometer battery. So there's these things really impact on total cost of ownership.

Daniel Hilson (00:30:39):

So transit agencies, there's the infrastructure cost, there's a supplier, the value chain altogether. So that is sort of a limiting factor to when the total cost of ownership will flip. It's definitely getting closer. I mean there was a real problem in the supply chain of batteries. People thought it's going to happen a lot sooner, but there was just such a constraint around battery availability that it wasn't available. And still vehicle supply is a massive problem. And so when you've got a supply and demand challenge, we all know from economics what happens. So that is sort of working its way through. But again, are there garbage trucks available? Are there, which use cases are available and what volume will drive if you've got 20 municipalities in the US desperate to do an announcement around a garbage truck and there's only a hundred in the whole country, you just have an imbalance of power with a supplier. So yes, it will happen. It's very use case specific and also region specific. So it'll happen. But yeah, there's going to be a tipping point in the next couple of years for sure, where that supply chain unlocks where more suppliers come into the market and there is that sort of rebalancing to demand.

Jaspal Singh (00:31:51):

And I think what you said initially is important that each agency need to figure out their own way. So they need to analyze what is their tipping point and how they can reach the tipping point faster either by creating those charging hub or letting these charging infrastructure to be used by other players or

having a different composition of fleet not always require a large fleet and you have a different size of fleet. So that's why the planning will be very important. And yeah, I think now other important point I want to discuss with you, which you already doing a project which I just came to know today, so I would love to know more about that, but I know Evenergi is working with utilities and electricity network providers because they are the key players for this whole transformation. How the nexus of energy market and transportation is working and why it is important for Decarbonation. And can you share, because there are a lot of, I see the gap between communication between energy companies or utilities companies and fleet provider. So how that intersection can happen and what fleet operator should be prepared for, there may be some challenges. So it's not easy to push these utilities companies. So what are their constraint and restriction they should be aware about?

Daniel Hilson (00:33:11):

Yeah, that's a great question. I mean we've talked already about the planning, the mismatching planning horizons between people trying to do a pilot and getting a loan application in, for example, quickly or a ZEBRA application in quickly and the need of the grid, which is much slower moving big infrastructure that needs to be well planned over time. So we have worked with Grid, we have a product called Grid Fleet as well, which helps grid companies plan another digital twin model for grid companies. And that really tries to give them some tools to say, well, at least there's these depots in our region, we know they'll probably transition in this timeframe. It is very difficult though to get that accurate. So that's sort of the one side is the planning long term. There's also what does the grid need as a technology? It needs flexible loads, it needs things it can talk to in ways that provide it.

Daniel Hilson (00:34:03):

If you think about the grid, it operates on this horrible principle of a lot of the time it's here. And then once every now and again it's here. We've got for that top peak, peak moment, so there's overbuild. So pushing a lot of that build to the edge of the network, having decentralized energy can flatten that load, having load management flattens that load. A lot of the grant that we went for, but we've actually had quite a lot of grants in this space in other countries in Australia for example, are about how do you work out that amount of flexibility transmission critical. The instinct will be not to help the grid just to operate because pull out is the number one thing for a transit agency. They've got to get that thing on the route. So having sophisticated charge management systems like the one we've built, which is really very context aware and understands the transit side, what are they trying to do?

Daniel Hilson (00:35:02):

What are the routes of today, what's the conditions of today? So you can always understand is there any flexibility at a granular level, one of our visions is that it's an end-to-end platform. They're looking at the planning, they're doing the management, but the day ahead there's a problem and they can plan for that problem the day ahead i.e. a grid outage, what do they do? Or otherwise they need support. They need to have a way to do that automatically in the system. They need to emulate that problem so that the next day they can actually give support to the grid when they need it.

Obviously there's decentralized energy as well. So how do you bring in battery storage? How do you bring in these things into the mix for an agency who needs the resilience? So they need to know they're going to have it, but when they're not using that battery, how do they trade it into the grid or hopefully like a hydrogen generator, whatever they have locally that's sustainable, how do they use that?

Daniel Hilson (00:35:55):

And I mean the only last thing I'll say, which is very big picture, but I know something that you are interested in and do ask people about is autonomy and how does that play into this? So a big vision I guess for me in the long-term, and I guess probably a lot of people is how does this all work when the grid can talk automatically to a system that's autonomous and has the ability to respond in very logical ways? That is a very big question in that moment where grid is intelligent, their vehicle's intelligent and they can communicate real-time messages about savings and all these things. As a completely rational actor, that's going to be a very interesting future problem that needs to be solved.

Jaspal Singh (00:36:40):

I'm now curious, do you know any city which is working in that direction where they are integrating grid with the fleet management and talking to each other? Because recently I was talking with one agencies and I told them that in future you need to talk to your grid on daily basis. What is your requirement, how they can help you. And probably they will cut back to you and say, Hey guys, I need more electricity today. Or we have a peak load like you mentioned, there is always over capacity, but it can also be under capacity when there is a peak demand. So do you know any city which is already working in that area?

Daniel Hilson (00:37:15):

Yeah, look, most operators in most cities are aware of this. They're just so focused on their current problems that are sort of like problem will happen. They'll usually specify that there is load management and there is that ability. I mean we are working with a number who are actively doing that. And in fact we're working with some utilities that are becoming PPP providers if you like. And so they're actually the ones implementing the infrastructure in some countries for doing that. So we have done trials. So in Australia we did a trial with a company called Busways and Endeavour Energy who was a distributor and we actually did send them signals, Hey, this is what the load is right now and they could respond. It was very R&D and d and a lot of these are still R&D. But look, there's vehicle to grid trials. This is definitely something that's actively happening.

Daniel Hilson (00:38:08):

Grid companies are very alive to this opportunity now. This is a huge revenue opportunity for them. So they're investing, they're engaged at least from their side. So it's more about settling this first phase of people just trying to get the basics where these things will become more business as usual, but it's not simple. And the CEC grant that we submitted was really around how do you solve through that complexity where people are just thinking about their own problem, they're not worried about the bigger problem, how do you send them a signal that they can respond to without any detriment to their own operational environment?

Jaspal Singh (00:38:46):

Yeah, you rightly mentioned people are just focusing on their own problem. Same with the grid. They are just focusing on their problem of peak demand and off-peak demand. They don't care about whether tomorrow there'll be buses or not. So it's just one of the clients, so they need to look after the whole city. But I think what you said is important that these communication channel will be created and there'll be more and more communication with grid and the fleet operator and they need to think now, they need to think and plan these thing now because once you have a big capacity like 5,000, 6,000 fleet, then you really need to talk to them. The other interesting point which I learned from you and

which I never thought about is when you said about the backup capacity at the depot and a lot of cities are actually installing Genset for backup capacity, which is like I was talking recently with Cummins.

Jaspal Singh (00:39:35):

So Cummins is working with some of the city to install the generator and like a one megawatt generator or as a backup for the capacity. But when you said the hydrogen Genset and fuel cell generator, I think that can be a future opportunity if you really don't want to go all the buses you sell, but you can create some kind of a backup plan with that. Now, other point I want to check with you because a lot of cities are now looking hydrogen and fuel cell as an option because they feel it's too complicated to go electric way, the electric bus, you need to manage charging, you need to manage load and range anxiety. So they think it's less challenge compared to electric. But then I spoke to some other city like Quebec City, I was telling them guys, you're not doing anything hydrogen. And they said, we don't need, our electricity is so clean, we have hydro, it's free, it's cheap. So we don't need to do anything. So how do you see the impact of availability of local renewable energy sources on the impact of the fleet and how much they should consider that? Because a lot of cities don't do that, they just pick technology based on their requirement, but they don't think about what is available. Like you mentioned a lot of city, they don't have hydrogen available. And so how does this availability of local resources like availability of hydrogen or local electricity will have impact on their choices?

Daniel Hilson (00:40:58):

Yeah, look, I mean that's an episode in itself, isn't it? It's a very contentious issue and there are very strong views on this issue. I think if you look at the macro and you stand back again at a society level, the value chain end-to-end for hydrogen and electricity is probably the key question. So we've done some work with large governments around the world, obviously some of them were very passionate about hydrogen and I should say our vision is to accelerate the decarbonization of transport, and that's an agnostic concept. So it doesn't mean we have a lot of debates internally because we have to take a view, what do we think will happen? Where should we orient ourselves to support transition? So at that macro level, the question really comes down to what's the highest and best use of green hydrogen? So does it exist and is it shipping, is it the energy grid or is it vehicles? Right? And when you talk to very agnostic hydrogen people, shipping is a really difficult use case to decarbonize and a very, very carbon intensive activity.

Daniel Hilson (00:42:07):

And the energy grid is obviously boundlessly thirsty for renewable energy. And at the moment we've got renewable energy that is intermittent, it doesn't operate all the time. So it's really about that. And then the physics of the supply chain. So there's a lot of losses as you go down and convert hydrogen at different points, which is a challenge for transport. So again, when you're looking at best use, it's also about where can it get most efficiently into the system. So it's not about whether it's used, it's about at what point is it used because hydrogen can create electricity that's used transport for example. So there's definitely that availability locally, but there's also the contestability of it. So if you've got a shipping company or an energy company saying, I'm going to sign a 10 year contract for that hydrogen and I need just gigatons of that stuff and you've got a transit authority going, I can probably sign a three year contract or I only need a little bit the cost thing.

Daniel Hilson (00:43:06):

So there's all of that stuff. So it's really around the problem of definitely in one mind operationally I go, hydrogen is great, mixed fleets are great, makes a lot of sense. You have backup, there's lots of problems as you get a fully electric fleet, the compounding of complexity and the resilience issue that you mentioned before, making sure you've got backup generators becomes like you just have to, there's no option. You can't say, oh, well we might have it because you just have to have it. There's got to be a resilience plan. But my bigger picture hat says is that hydrogen going to be available for these transport uses and also the technology of both of those are going to improve. So it's hard for people to guess, but the battery technology and the issue of range is going to get a lot less of a problem. There's battery technologies that are just in my mind in a couple of years in a horizon maximum five, we're not going to be talking about that as such a big issue, the efficiency of which will just get better in my view with my crystal ball. So yeah, so there's lots of different things that go into that question.

Jaspal Singh (00:44:13):

Yeah, the person who worked with a lot of data, I always trust them because you are seeing a lot of data. So I fully trust the battery technology is getting better. And I love your point when you said that there is a limited supply of green hydrogen. I mean if it's a grey hydrogen, it makes no sense. But if it's a green hydrogen, there is a limited supply. What is the best use case? Is it marine? Is it buses? Is it electricity utility company? So you should find the best use case, and I agree with your point is use the precious resources where it's required not for local transportation, which you can manage with electric buses. It's just you need to plan better. So right now it's not a challenge about you can do it or not do it. You can definitely do it, just you need to plan differently. You need to manage your resources better. But that's a very interesting angle you gave Daniel. I never heard this because a lot of people go into this debate of yeah, you should have mixed fleet, you should go for hydrogen or you should go for electricity. But your point of saying what is the best use case for hydrogen?

Daniel Hilson (00:45:17):

It comes down the same thing. It comes down to the, am I thinking about my micro world where I've got stakeholders who are paranoid about how are we going to run this, but it's up to the industry as well. We need to make this easier for people. We can't have fleet managers feeling this is going to be so hard that they just have to go with a technology that makes their daily life easier. As an industry, it needs to be more seamless. It just needs to be an easy experience. Once you get that off the table, then people can just make sensible decisions on cost and sensible decisions on the long-term, best technology. And I think that's also getting in the way of a lot of these decisions. People have had bad experiences and then they really zone in on. And one of the problems with hedging and having lots of bets on technology is we can't improve one of them to the point where it is really you're trying to make different things easy and you're not making one thing seamless for people, which is what everyone wants.

Jaspal Singh (00:46:11):

Yeah, hedging is good to a certain extent. If you over hedge, then you kill your investment. So I agree with you, you should do hedging, but then you're not giving full resources to one technology which can excel and which is proving now you are working with many agencies in city to plan their transition and all these planning and simulation require heavy data. You are dependent on data. You need data to make these simulations because like you said, you're preparing digital twins for fleet operation, you're preparing digital twins for grid, so you need data. The challenge is when you talk to most of the city, either they don't have data or they don't have data in the right format and it's a big challenge. How do

you overcome this challenge and how do you think cities should think about standardization of data? Because it can help not for their planning, but also in their operation and bringing efficiency. So are you working with the city to make sure they're thinking about this data standardization?

Daniel Hilson (00:47:10):

Yeah, look, definitely. I think to some extent, again, getting back to this acceleration and making it easy, you do have to meet people where they are with data. We have people who are trying to do plans and they have just terrible data. And so you kind of look for what do they have? Mostly people will have an asset list, fuel cut data, they'll have stuff in transit. Look, you've got GTFS scheduling systems that are pretty ubiquitous and these guys, so in transit there is usually data that is usable and quite good to get the digital twin that we need. If municipal, it is a really big mixed bag, you do have some people with good data, but you do need to start there. Now, if you start there, you can get people to a point where they're actually justifying getting data from the first iteration of what they see.

Daniel Hilson (00:48:00):

So they go, look, this plan, it's a bit, it is not great. There's too many assumptions. We think it's good, but there's a lot of assumptions. Oh look, if we had telematics, we could really get that to the next level. These are big investment decisions, let's invest in that. So you can really use a transition to drive that process. I mean the ACEs mean we all know that in mobility obviously and connected and electric are two core pieces in there and it will become more connected. And we've seen examples, just to give you one use case where a client of ours, a very big fleet, 20,000 vehicles admittedly, but we found they could save 75% of the cost of infrastructure by using their telematics to more intelligently work out where to charge. And we're talking about AU$9 million to about AU$11.5 million. That's Australian dollar, sorry. But that's a very significant difference with And why is that? Because everyone overbbuild, otherwise you want one charger for every vehicle you want, but we're going to have on route charging for passenger vehicles at least. So it can justify that data requirement. So I think data will come, it's coming naturally as part of the kind of maturation of the industry, but this can also help support that. It can really justify it in the sense of more optimized charging, better infrastructure planning can help to justify that data migration.

Jaspal Singh (00:49:28):

Yeah, I mean what you said is that's the trend I'm seeing with a lot of agencies. They're building now charger. They are saying, let's just have one charger for each bus because it's complicated. We don't know. So the safe bet is like have more charger. And I was like, do you really need, but they were like, oh, I don't know. I may need it. I may not need it, but right now I'm constructing my new depot. So it's better to have all the chargers. And like you said, with better telematic, with better planning, you can actually save some of these resources. And these are precious resources. You cannot use that money to buy more assets. So that's important.

Daniel Hilson (00:50:07):

And I mean, I don't want to set a private versus public debate here, but I mean I can just see in our portfolio we've got some people, private operators trying to put nine vehicles on three chargers to meet commitments that they've made. And then we see this other side, which is as you say, really goal plating to some degree. So I think that learnings need to be shared about there's a balance. You need the resilience in mission critical environments, but you do need that balance. And to your point about data formats, sorry, just before super important, there does need to be also standardization in planning

processes, which is a bigger debate. It probably doesn't have time to get into it now, but if you're all planning in different ways, the problem is you can't share information. You can't actually benchmark who's doing as well as you move forward.

Daniel Hilson (00:51:01):

And you can't give data to people like utilities in a common format that they all go, oh, everyone's planning in a way that when we get that data, we understand it works for us. So it is not just the data, it's actually the architecture around how that in accounting, you've got data standards, but you need to have agreed accounting standards. And I think this space, there needs to be both. There needs to be an approach to data and interoperability, but there also needs to be agreement on the approaches that we're taking because they are different everywhere. So standardization of that would also really help.

Jaspal Singh (00:51:33):

That's something superb because I never thought from that point of view. A lot of people talk about data standard, but what you said about accounting standard, how to use that data. If you can standardize that, you can actually benchmark and you can exchange resources and then we can have more regional fleet. We don't need to concentrate into one, your own operation, like you said, this narrow view of what I'm doing. Then you can think about sharing resources and being more cost efficient. So that accounting standard point, I think we can kind of spend years and years on that point because that's a challenge I see with many cities.

Daniel Hilson (00:52:10):

Yeah, absolutely.

Jaspal Singh (00:52:12):

Now, one point I want to check with you, because you have that experience of working with so many different cities and countries and so many different players and as a founder and they tell that any successful founder, he's successful because he see pattern, how things are happening or repeating in different places. And if he sees something is going wrong, you can stop. So to make a successful transition, there are certain pattern and to fail a transition, you also know there are pattern. So what are those pattern you are seeing in different cities? And in other words, I would say if you can share some of the lessons you have seen or lesson learned from different cities or mistake they have done in different cities, which other city can learn from some of the common mistake all these players do. And you feel like why they're doing it because you have seen this again.

Daniel Hilson (00:53:03):

Yeah. It's a tricky question. Look, I think the planning again, plan, plan. So the cities, and there's a lot of different reasons for that. The one reason is simply you can stage appropriately. You can announce something that's exciting without forcing politically motivated individual big or big announcements, which often all it means is you've overspent on something too quickly to make an announcement. And we see this a lot like particular projects not being successful because people have gone too quickly, too fast to be the first, Hey, we've got the first this or the first that. But in reality, you get quite stuck in those situations if you can announce it'd be comfortable with, we've got a great plan, this is what it is, we're very excited, we're going to roll it out in this way and avoid those. To the extent that they're not clearly demarcated as this is a trial, this is an innovation project, we know we're going to fail.

Daniel Hilson (00:54:01):

That's okay. If it's framed as a commercial endeavor and it fails, that has massive ramifications across the industry, across other operators who, when that person stands up at a conference and said it was a disaster and it wasn't a disaster as an innovation project, which everyone accepts, it was disaster as a commercial project that has huge ramifications. So I think avoiding those sort of situations is really important. The other sort of element of that is having then the agility to move and sort of say, look, we have failed. That's okay. Because it was an early project, we all admitted to ourselves that vehicle technology wasn't quite ready or the charging technology, whatever it was. But we then pivoted and we went, no, now we're going to go here. We haven't overcommitted. We're going to go to this next phase. And that's done in a more seamless way.

Daniel Hilson (00:54:56):

And equally, I think that that broad thinking about how does that fit into the grid, how does that fit into all the other stakeholders? And where that's been done well around the world. And I'd probably prefer not to mention customers specifically, but where that's been done around the world or poorly is really important. So I think those key things, solid planning, not overreaching all at once and having a project that fails because of that being clear that it's either innovation or commercial and not getting those things sort of I guess mixed up. But also if you do fail, like persist, don't give up because a lot of the political with BERT, something went really wrong. If you framed it as innovation, then that's okay. If you framed it the wrong way, it's a disaster. So all of those things sort of interlink to just keep going, learn the next lesson and persist and don't just go on a completely different route because you've had a single failure.

Jaspal Singh (00:55:55):

Yeah, that's an entrepreneurial mindset. Or I would say growth mindset is required if you fail, what lesson you learn and how you can improve next time. And I think the other challenge I see is when you find your right mix double down on that. So once you need to experiment on different things, but once you, in entrepreneurial world, we call it product market fit. So once you find your product market fit, you just need to double down and go for that. And I think somewhere the city make that mistake, even they discover, okay, this is the right way they should go, but they then still try to experiment and remain in the pilot mode. They never try to double down and take it forward.

Daniel Hilson (00:56:34):

Oh, that's a very good point too. Absolutely. Where you have got the mixed right for your environment. And some countries, I mean in the UK for example, they have made mistakes and they have a point now where they're landing and they are actually starting to double down, which is great to see.

Jaspal Singh (00:56:50):

Yeah, yeah. Now let's discuss about your entrepreneurial experience because like I said, I'm really inspired to see your journey. You started your career in Australia and now you're based in US and you are scaling up the company. So you co-founded this high growth startup and look to expand international market from the beginning, which is not an easy thing. A lot of startup fail to scale up outside. So can you share some of the important lessons you learned so far from your entrepreneurial journey and anything you want to share with the founder, which are building a climate tech or clean tech startup because it's even harder. Like building startup is harder, but something solving this global level problem where things are not clear yet you need a lot of education. I know that BetterFleet you're

trying to even not only sell the service, but you're actually doing a lot of education piece for the clients. So what are the lesson you learned in your entrepreneurial journey?

Daniel Hilson (00:57:48):

So many my life in this particular journey? So I think what you said before about falling, well, you had Uri on a few weeks ago, I think a few months ago on falling in love with the problem. And in a space which is tough, you really have to love the problem to get up every day, the ups and downs. You can't just mildly love the problem. You need to really love the problem. So I think finding a problem that you are passionate about that you'll really keep driving towards solving is really critical because your advantage as a founder of all the huge global companies that might enter later, they do you see it probably a bit earlier than others because that's the entrepreneurial thing, but others will see it and they'll launch in with lots of money. But as a passionate founder, your advantage is that you'll go deeper into that problem with more passion, which means that you'll be more committed to finding.

Daniel Hilson (00:58:41):

And those real nuggets of gold are in the real detail. They're not in the someone's done a macro business plan and got excited. It's in the kind of trenches of all the problems you see day to day, which is where you find product market fit. That is the product market fit realm. So that's your advantage. You've got to really leverage. And part of that is also pivoting really brutally. As a founder with the capital, you can't sit around and think about whether, oh, maybe I can, if you know that something's wrong, don't be frightened of just dropping it and moving on. I think a lot of founders get too attached to a solution to a problem and they don't pivot hard enough quickly enough. And I think some of the best decisions I've made in my career have been about pivoting really strongly. It was hard and I did have investors and I had to explain it to them, but it was worth it.

Daniel Hilson (00:59:30):

So I guess the last thing I'd say is sort of a surfing analogy. I'm Australian and we think in surfing terms sometimes and there's a wave coming and you probably see it before others, you are going to see that wave emerging. You need to make sure that you're positioned at the right point to catch the wave with everything you need, the capital, the best people, the right technology. You need to be catching that wave. And if you've got all those things in place at the right moment, then you will be one of the ones that catches that wave and is successful. So it's really about that, thinking about the timing of that wave and when it's coming, you probably will see it two or three years before it's ready to really come and you need to start at that point, but be ready with everything you need when you hit product market fit, as you just mentioned before, you need to be ready to go and you need to be aware that you've hit it. And that's kind of where we have now come and super exciting when you get it. But then there's a whole new world of problems around how do you scale efficiently and effectively and not overheat as well, which becomes the next problem.

Jaspal Singh (01:00:39):

I love that point. I love your surfing analogy point because that's what a lot of founders missed. Once you miss the wave, then you have to wait for the next one and by the time probably you will die or you will not be available in the market. So you have to wait for the right moment and you need to analyze and be ready for the wave to come. You can't build a house that time when the wave is there so you can't do things. And when you said the overheating things, and that's what I saw from your company as well, and correct me if I'm wrong because I tried to check the public data, you rightly said you should not

overheat the company or startup. And I saw EV energy just has raised $3.9 million so far given the size of the company you have built and the global scale, I see it's very small amount. And what's your secret? Can you share how did you manage to do more with the less money? And also can you share what was your funding experience when you went to the market to raise one? Like you mentioned you did pivot and you told your investor very clearly that I have to pivot and I have to do this. So how you build that trust with the investor.

Daniel Hilson (01:01:46):

Yeah, look, I guess one thing is having a vision this broad and expansive so you can pivot within it. We've now raised up, it's more like about $5 million. But yeah, it's not a lot compared to our peers, our peers that have raised $80 million, a $100 million. So it is challenging, but I think part of it for us was that wave analogy. I didn't want to go and raise capital at a point in time where we spent it on the wrong thing and we did pivot very hard and I'm very glad I hadn't doubled down on what looked like a great thing at the time, which our first sort of plan as this company was much more around being more integrated in the energy market, being more on the energy retail delivery side and doing all the things we are doing, but much more as an energy player.

Daniel Hilson (01:02:33):

So EV energy was really about the EVs hitting the energy market. We'll come more side originally, and so that was the pivot. But if the investors are all focused on the same thing, which is like when are you going to get product market fit? They should be really happy that you've got a point where you're like it, let's keep going and find it because if you haven't spent a lot of money, there's no real damage. You're like, okay, great. So our future plan, well now we are just closing out quite a big ground to be honest. And we are at that product market fit point, and I'm very comfortable that we have those things. The wave is at the right time because also if you go too early and you spend it before the wave's really there, you are the one that makes all the mistakes that other people learn from and then they come and raise money and go, oh, great, we know what to do in our transit space particularly.

The problem is very clear to us now and the challenge is very clear and the solution is clear. So we need that money now to just execute. We've got customers paying us. We do need to step ahead of our customers so that they don't drive the development and it doesn't become a really scalable product. We need to be driving ahead of them. So now's the time. There should be some very exciting announcements coming up soon, touch wood.

Jaspal Singh (01:03:48):

Amazing.

Daniel Hilson (01:03:49):

Yeah, so we definitely, we ready for that now, but I'm extremely glad that we didn't go early. There's different strategies. Some people have done very well through doing that. So there's definitely different approaches, but for me, keeping that stability, being careful and mindful that if you haven't reached that point, capital can be very destructive and value destructive. So that's been our strategy to date.

Jaspal Singh (01:04:13):

When you said overheating the company, that's what capital do. So capital can be very destructive. And I see right now we are seeing a lot of companies which are winding down, even raising millions of dollars, hundreds of millions of dollars. And the reason for that is they never found the real product

market fit and they keep doubling down on something which was not so big news. Congratulations for that. So there are a lot of exciting news coming from you, huh?

Daniel Hilson (01:04:38):

Yeah, look, as I said, the time is happening now and it's really that combination of the market being ready and needing the product at the right time and it's an exciting space to be in. And I think having the credibility of having done so much really with clients, and a lot of it was done really having to do algorithms on the fly and working with people in a very intense environment without the product being finished and having that agility to do that meant that now that we are ready, we've done a lot of that work. So there's not many people in the market that people can turn to that have that experience and understanding and who are transparent and honest as well because we're not just coming at it at the last minute with a great idea that might or might not work and we're going to go and try to deploy it with someone as a risk. Yeah, we've done the work to know and de-risk what we're doing to the point where we're going to people transparent. We're not telling people we've got all the answers. No one does at the moment. It's still new, but we have enough of the answers to be helping them at this point of their journey in the right way,

Jaspal Singh (01:05:46):

Which is the best thing. If your clients are working with you to solve their problem, it's the best thing. And they understand that nobody else can do solve their problem. So they have to get involved and it's a good thing. And one important thing you mentioned earlier, when you be ready for the right time of the wave, you need to have resources and need to have people. And one of the key challenge for founder who is in scale up mode is to find the right talent and also start shifting the role like you did your Bachelor in music. So I use this analogy of more as a conductor in orchestra, not as a violin player or magician, so they become more like a conductor. What are your lessons for hiring right talent and scaling up the company?

Daniel Hilson (01:06:33):

Yeah, look, I mean I'm a voracious reader of management. I know I've studied it and I still read books constantly and obviously just in practice as well. So I guess a lot of, there's books like the Coaching Habit and recruiting slowly and taking that time and really being sure about people is critical. I mean, you don't always get it right, you won't always get it right, but investing in that, really trying to get the right people from a cultural fit perspective, not just a skills perspective like culture in our business has been a foundational element and is where people succeed or fail. We talk about being empathetic and transformative. We talk about being clear and transparent. These are really important factors when we recruit someone. So if you get people with that ethos, you can trust them all because they act out of values that you agree with.

Daniel Hilson (01:07:26):

So they might make a mistake, but they won't make a mistake for the wrong reasons. And that's incredibly important through literature and through experience that empowering people means trusting that they've got values. So that's sort of the one part of it. And then it's really turning into a coach. If you look at the LA Lakers or the Bulls or they had great coaches who knew how to extract the superpowers in each of those team members, but also work out how to get them to work as a team. So being someone who spots talent can get the superpower out of someone, understand their superpower, but know how that fits in the rest of the team and crafting that team is also really important. But I think as a

founder also, you've got to decide at some point, am I actually one of those players? Am I actually, do I need to be a Michael Jordan?

Daniel Hilson (01:08:13):

I mean, obviously I'm not being arrogant, but do I need to be one of those players or am I the coach? If you are really a great player at one of those things, it may be the decision to say I should stay as a great player and I need to get someone who's a conductor. And that's often a very hard decision for founders. But I'm constantly in that mode of at what point am I more valuable as a player than as a coach, or can I be a player coach? And there have been examples of player coaches, but you need to make that decision pretty clearly, or your team gets confused. Are you in the team or are you coaching me or are you, that's a very hard point, and I don't think I've got that right just yet, but I'm very mindful of at what point do I really need to make that decision.

Jaspal Singh (01:08:56):

But I think the most important thing is you're aware that you need to sometime take that decision, or some point you need to decide whether you want to be a player or a coach. But I love that point because finding people who are a culture fit because that's what, it's a mission. It's not an easy journey, and people who are really attached to the mission will survive and will contribute. And it's hard to build a startup, especially the area you're working on every day. You have to work really hard to bring value and solve these problem, but also getting constantly coaching from somebody in the company and working for that mission. So no, I can see the company, I know many of the people you have hired and I know they are some of the best player in the field. So you're building a right team, you're building a right team, I would say, and things going really well.

Daniel Hilson (01:09:46):

Yeah, definitely. And look, people are everything, right? In the end of the day, a company is just a shell for a lot of people. And so you can build a great product and it could be good for a while, but then the market will catch up. You need to build another one, right? You're building an organizational architecture and at the core of that is people.

Jaspal Singh (01:10:02):

Yeah. Yeah, that's really true. It's not the product, it's a people. Now, this is my last question, and everybody's right now talking about artificial intelligence. I was in Orlando in one of the conferences and I see AI so many times and I was a little bit sad because AI cannot do everything, but people were like, AI is there, Generative AI will change and transform a lot of things. What do you see the potential of AI for, I would say the energy transition space as well as for EV energy? How do you think you can incorporate some of these AI feature in the product and help the customer.

Daniel Hilson (01:10:41):

Look. It's just such a complex and enormous space. So I just mentioned before, it's all about people and it is, but it is pretty incredible what's happening. And I think for many of us, quite scary as well. If you look at the large language model side, it is daunting. I mean, the people who create it don't even know how it works. That's a pretty scary to be, right? I think at a micro level, what we are doing, it definitely impacts on how you deliver software, the tools that are coming out and how powerful they are and how they do testing automation and code snippets. I mean, that's a really big shift and we have to be on that

shift because we have to be competitive. So definitely on the software development side and how quickly we need to move compared to people, how quickly they used to move in.

Daniel Hilson (01:11:26):

Developing new products is a huge thing. Customers are going to get really demanding for that. They're going to get demand for features to be delivered much faster than what people have seen in the past. So that's sort of the one side. The other context of this is really in the products and AI and machine learning around the data. And so when you talk about a digital twin, we're really well positioned for that because it's not the data, it's the context of the data that becomes so important. So when you talk about did that vehicle make that route, was there a problem? Was the battery degraded or was the topography of the route? What was the climate? Was the passenger loading? If you are storing all that information, then you start to get into a world of really being able to optimize dispatch and optimize charging times.

Daniel Hilson (01:12:12):

We know that the charging times took this long over this period of time in these conditions, it's not enough just to store the information itself. You have to have all of that data. So we do believe we're very well positioned in that space as an organization. We're collecting loads of data from our real-time environment, but the whole BetterFleet platform was really built in a way that is very conducive to machine learning and artificial intelligence. So we're excited by that. I think the only other thing is in the fleet world, what happens with human machine interfaces? So it doesn't become much more voice, voice interface that if you're in a depot, you've got an earplug in and you're saying to me, what should I do? Where should I go? And in real time it's making decisions and talking to you that I can see a future, whether that becomes much more of the interface as opposed to screens.

Jaspal Singh (01:12:59):

That's interesting because what you're saying making sense is instead of typing, people will just have conversations. So the planner, instead of going to the system and entering the bus route and number, they will just tell that, okay, this bus, this route, can you optimize and can you provide me the route and the machine so that human machine interface will change? So we will, the habit of typing with our thumb probably will go away and we will have more conversational. So that's interesting.

Thank you, Daniel. I never thought from, I get a lot of these moments where I think like, okay, I never thought from that point of view, and I really admire giving that new perspective because that's what I love with these conversation. When you get a new perspective and you feel like, ah, I never thought about this, and it can happen. So thank you for this lovely conversation. Generally we end this podcast with this rapid fire.

Daniel Hilson (01:13:48):

On that point. Sorry, before we go on, that's what I love about your podcast, that's what I love about you. You are just a life learner. You're always looking for that. So yeah, I really appreciate you saying that and I appreciate what you bring to the table as well.

Jaspal Singh (01:14:02):

Thank you so much Daniel. And this is what I learned recently. Somebody asked one of the big expert, what is the skill you should tell your kid to learn? And he said, I don't know. I would just say that tell your kid to be life learner. Just keep learning because the learning pace will change. You need to learn

very quickly new things and the pace of innovation, like what you said, the customers are more demanding, the technology is becoming faster, the innovation will be much faster. So who will survive? Who can adopt to the new climate and environment and new learning? If you don't do that, it'll be hard for people. So that's true. Thank you for your kind word. And like I said, I end this podcast with this rapid fire round. We learn a lot of technology side, your end entrepreneurial side. Now we want to learn a little bit of your personal side. So if you're ready, I'll fire my questions.

Daniel Hilson (01:14:52):

Yeah

Jaspal Singh (01:14:54):

Okay. So if you were not in environment and mobility sector, what other profession you would've selected?

Daniel Hilson (01:15:01):

Okay, that's tricky. I mean, if I wasn't in mobility, I'd be in sustainable cities. Again, I love that whole world, so I find it hard to think about what I'd do if I wasn't in this space. But obviously I do love music. It's a deep passion. I still play. My kids are learning two girls. So yeah, it would probably be something in that space, I'd say.

Jaspal Singh (01:15:21):

Wow. So probably the second career will be EV Band or something like after retirement.

Daniel Hilson (01:15:27):

That's right. If I ever get any that, I definitely do that.

Jaspal Singh (01:15:32):

I would love to see that. And the other question I would ask is you travel and you live in different parts of the world, which is your favorite city in the world and why?

Daniel Hilson (01:15:41):

Oh, look, there's so many great cities in the world. I love London and I love Paris, and I'm in San Diego. It's a beautiful city. Look, I think ultimately I'm from Sydney. I was born in Sydney. I grew up in Sydney in Australia, and so my heart will always be there. It's just the most magnificent harbor city, beautiful beaches. It is just an incredible environment for kids. It does have a good public transport system. It's very spread, which makes it extremely difficult, very difficult. And I think it's one of the least profitable public transport systems in the world. But yeah, they try really hard on that basis. So yeah, I have to say Sydney, I mean can't. It is my home and it is just such a naturally beautiful city.

Jaspal Singh (01:16:27):

Yeah, you always have something special for your birth city. You can't forget about it. And same, I born in Delhi, so it has a special place even where I'm living now. You said you are a ferocious reader and you read a lot of management book, which is your favorite book, and which book you should tell every entrepreneur should read.

Daniel Hilson (01:16:48):

Well, that's tricky. I think there's different books at different stages of your journey. The stage I'm at now, a book called **The Multipliers by Liz Wiseman and Greg McEwan**, I think it's McEwan. Yeah, it's an amazing book. How do you become that leader who multiplies others and doesn't diminish others? And it really is a hard book because we all have very bad habits, and it's about how do you get rid of those habits stepping in? And there's lots of things that we all have. So it's a very tough book to read in many ways, but it's really about how do you set up, and also just this whole concept of each of us impacts so many people in our lives. If you can make one person a multiplier in your whole life, they might make 10 people a multiplier who might. So it is a very great thoughtful concept about how powerful it is for each of us to impact everyone we deal with in work and in our life in a very positive way. So it's an amazing, incredible book.

Jaspal Singh (01:17:47):

That's a very nice thing, what you said, if you can create one multiplier, indicate 10, and then the whole society will be better. And that's what we say. One good people can create another good, and then it can have that chain interaction and the society will be good, especially now what we are facing. So it'll be good to have those kind of stuff. So thanks for sharing. I'll check that book. I haven't heard about it, so it's now in my reading list. And you can see I have a lot of books in my back, so it's going to be added there. Now my next question will be, what one thing do you wish you should have learned early in life, either professionally or personally?

Daniel Hilson (01:18:25):

Yeah, that's a good question. I have learned a lot of lessons in my life, so it's hard to know which one to pick. Look, I think at a very foundational level, really remaining attached to your values as your North star, we can really get attached to our career. All the things in our career are daily priorities, but what is actually guiding you needs to be your values. And if I've ever early in my life, when you are less focused on your career and you don't have a family and you can lose sight of that, and really, I think I told you in my career, when I got onto the environment and business as my core, there was just a very pivotal shift in the way that I worked and my success. So I think that really keeping your values at the center of your decision-making and your life is incredibly important.

Jaspal Singh (01:19:16):

Yeah, that's a very important lesson. Finding a north star and sticking with it, and you will have a lot of downs, and then you will start questioning yourself, but keeping attached yourself to your value will take you a long way. So that's an important lesson. Thanks for sharing. It's quite interesting and that's what I love to hear people from different people, and it give me new perspective. So thanks for sharing people who are listening to this will get a new perspective too. This is the last question which I asked to all my guests, and I get very different answers. Some of them are really amazing, but if you can change one thing in life, what would it be?

Daniel Hilson (01:19:51):

Well, look, I mean probably one of the things that's causing a lot of, I mean, there's lots of things that would be great to change, but I mean, I think the noise of this bipartisan world that we live in and all of the vitriol and things, if we could just turn that down, if **we could have our commonalities drive our decisions, not our differences**, it's a real problem that just seems to be exacerbated by social media, as we all know in these things. So if I could change that and I could just sort of clear somehow all that noise

and let people kind of really just get back to, Hey, we have a lot in common here. We have lots of problems. The solutions that we have, we probably all basically want the same solutions ultimately. So getting rid of that noise and just enabling people to just work on those problems, that's going to probably would be a very useful thing right now to be able to change in the way we're living.

Jaspal Singh (01:20:44):

Yeah, and I think what you said is very important. We are so focused on the differences. So we forget about what is common, what is make us all human. So if you start just figuring out that we all are the same and the core, maybe it's the packet, it's a package which look different, but inner side, everything is same, and everybody has the same heart and same soul, and same mission in the life to do better. So we will have a better world and let's hope we will have a better world. And somebody said, we have come a long way and human will learn, we'll progress, things will get better. And I'm optimistic, so I always believe that life will be good, and we have people like you who are trying to solve some of these big problem and helping the clients. So thank you for that.

But thank you so much, Daniel. I mean, really loved your great insights, really loved our conversation and look forward to some of these exciting news you mentioned about, and I'm happy to see how we can support and help.

Daniel Hilson (01:21:47):

Great. Yeah, as I've mentioned before, really appreciate the work you do and please keep it up. It's fantastic.

Jaspal Singh (01:21:53):

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