Wicked Problems PODCAST

Wicked Problems – Series 3, Episode 5:

Niall Riddell of PAUA

Transcript

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Transcript

0:09 Toby Corballis

Welcome to Wicket Problems and we're continuing again with our EV focus. Today we're talking about payments with the wonderful Niall Riddell from Paua. Paua is a payment processing solution for businesses, for business drivers. It's a really important part of the ecosystem that Niall's trying to attack here because, you know, payments are a bit all over the place at the moment, if we're honest, and there's lots of different solutions out there and it some of them not as streamlined as others so it's great that people like Niall are really working to try and streamline that process. We're going to talk about that; we're going to talk about the large number of Charge Point Operators, or CPOs, in the market; what's going to happen as they consolidate; and we're also going to talk about the EV rally.

1:02

Welcome Niall to Wicked Problems. It's great to have you here looking forward-

1:07 Niall Riddell [raises hand]

Er, Neil. Neil.

1:08 Toby Corballis

No! No! I've done it again…

1:10 Niall Riddell

Don't worry…. Don't worry, it's always better to get that one forward to sort it right from the start.

1:14 Toby Corballis

And it's a good one maybe to start because Niall, you're from PAUA, not Poo-waa-waa or-

1:20 Niall Riddell

Yeah, that's it

1:21 Toby Corballis

Something else… Let's go. It's great to have you on the show and I'm looking forward to talking about all things to do with your journey, the journey of PAUA and all things EV, including payments. But tell me, how did you get started with PAUA and tell us a little bit about PAUA and what it is.

1:41 Niall Riddell

So, unlike a lot of people, I'm not from the automotive sector, so I came to this world from energy. So, I spent 15 years in large energy companies, including EDF and SSE, and during that time, I had the privilege of running the electric vehicle team at EDF Energy, and what we looked at was the ability for a driver to leave their house, go out on the highway, plug in, go home and have all those costs go back on the energy bill, but we never had a solution for it so that left me with this area that I was interested in around aggregating data and payment, and, ultimately, during the middle of COVID, decided to set up a business called PAUA to enable drivers on the highway to find, charge and pay for electric vehicle charging.

2:23 Toby Corballis

And so there's the sort of solutions you've got then are like a payment card. You've got a mapping area that people can go and find the nearest charger that takes your card or is it also other cards? I don't know. I think you've also got something that helps people, you know, reclaim when they're charging at home, so that if they're doing that charging for business they're not having to pay for that charging that actually the business ought to be paying for.

2:50 Niall Riddell

Yeah. So we, we looked at this world of electric vehicle charging and went, "OK, it's complex," and then we went, "who's it most complex for? Where can we solve a problem?" So, we went to this idea of the fleet manager, the business driver and the business driver has three locations they can charge. So, for a business driver, the petrol station is dead. You know, electric vehicle drivers don't need petrol stations and those 3 new locations they need instead of petrol stations are public charging, home charging and workplace charging and each of them has different problems associated with it so we went out looking at this market and went, OK! So, most businesses, the first thing they'll do is electrify their depot or their office. So they electrify their workplace, then they might send some drivers home and they'll make arrangements for charging them at home and the hardest thing for them to do is send them out in public because there's 120 different public operators, you need to get a VAT invoice for all of them… becomes very admin heavy. So we looked at simplifying the public experience. We then got drawn into home and now we're currently looking at how we solve problems in the workplace.

3:53 Toby Corballis

You're absolutely right… As an EV driver myself, the experience in all of the different charging networks is, but it's actually just different as well, you know, and that makes it admin heavy and it makes it mentally quite taxing because you're like, "do I tap first plug in, plug in first tap? Do I, you know, where do I get my invoice? Is it in an app or do I have to get them to e-mail or is it on a QR code or," you know, that becomes very onerous from my perspective and it's got nothing to do with EVs and whether they're any good or not, but it is about people thinking, well, that experience as an EV driver isn't, isn't nice and, and clean, and simplified like it is maybe if you're paying for other goods.

4:39 Niall Riddell

Exactly, and I think what this has led to is we've ended up with this dynamic whereby we've been speeding up the acceleration faster and faster. We've now got heading on towards 2% of all vehicles on the road being battery electric, sales are hitting about 20% of all new vehicles sales are battery electric, and we're entering a group of drivers who expect things to work. Initially, we got away with it. We had early adopters. They were happy to overcome challenges and solve problems, but the new group of drivers that we're having to deal with just expect stuff to work. So, the biggest compliment we can receive is it just works, but we've got to make all that technical complexity go away for the new drivers. We've got to put it into systems and processes that us as businesses need to manage so the adopting driver can find the charger, find a simple way to charge, have the payments routed to the right place, charge at home, be fairly reimbursed or charged in the workplace, or share things between others. And all of these problems are problems that companies like ours are having to solve.

5:39 Toby Corballis

Very good. And I think there's a lot of us who are very glad that you're there doing that resolution stuff because it can be a little bit annoying… Actually, probably less so for me as an EV driver. Well, that's still annoying, but for my, for my accounts team, it gets very, very annoying. You're seeing as you go through

this – and I think you mentioned something that really piqued my interest actually there, which is they don't need petrol stations. The, your EV driver doesn't need a petrol station. They need a Workplace, they need a Home, and they need some form of On-the-Go, I guess, but it doesn't need to be a petrol station because you're not going to go in there. The petrol station is designed around: you stand at the pump, you fill up, and you're in the actual station itself to pay maybe five minutes, if there's a little bit of a queue and you want to buy a chocolate and get a coffee That's not the EV driving experience so it's going to be interesting to see how the various actors in the market actually come on with that journey and how do they, how do, what will they do to respond? Because I think there's still a lot of thinking, oh, it's just a different form of fuel; all we have to do is completely keep everything as it is and we'll just change the fuel type. That's not going to work, is it?

6:53 Niall Riddell

One of the things I explain to businesses when they're starting to make this transition is that you're switching out petrol and diesel for electricity and to understand what that means to your business, you need to understand the basic fundamentals, which is power times time equals energy. With petrol and diesel, you can get a lot of energy into your vehicle very quickly. With electricity, unfortunately, we just cannot get the power high enough for most everyday vehicles to be able to get the energy across fast enough so time is your big differentiator now. So, all these businesses making the transition to think about time. So, there's operational impacts at that time, but there's also behavioural impacts at that time. So, one of the most obvious ones that people quite often quote is it takes me 30 seconds to fill up my car. I pull into my driveway, I plug my car in, I go to the house, I have dinner, I go to bed, it's full when I wake up. It took me 30 seconds to plug it in. That behavioural, that mindset change is really key. And if you take the petrol station analogy we started with just now, if you look at a motorway service station layout, yeah, you drive in, you park up, you go to the toilet, you get a coffee, change your kids' nappies. If you're at that age, which unfortunately I still am, twenty minutes later you come back out, you get in the car, you drive around the corner and you go into the petrol station and you'll the petrol station filling experience takes you nine to ten minutes, You know, fill up the thing, you stand in the queue, you pay your card and off you go. But the reality is that whole experience from driving into the motorway service area to leaving is 30 to 40 minutes.

8:19

So, the beautiful thing is if you've got a GRIDSEVE an Applegreen, a Tesla, you pull in, you pull up the charger, you plug in… Thirty to forty minutes later on 150-200 kilowatt charger, you've quite happily got another couple 100 miles in the car and most people, and most normal people are not going to drive 200 miles straight before they stop again. They'll probably drive for two hours, which on UK motorways will get you sort of 140, 150, miles so another 150 miles later, you can stop, go to the toilet, plug in, do all the things, and you're back on again, but that shift in mindset, that shift in behaviour, and also the physical shift of fuelling from the back of the motorway service area to the front of the motorway service area is what's going to make this transition start to really tick for some people.

9:06 Toby Corballis

I think that's a very good point because there's been a lot of, in my experience, a lot of, and I've said it before, but a lot of the providers of motorway service areas in the beginning stages of this transition, it was almost like, well, we've got a dark and dingy corner at the back of the service area, we can throw the electric charger in there. No one will mind because actually it's not an important thing, and as that's becoming more important, you'll see, you know, companies like for instance, Shell have now got dedicated EV charging sites, not just them, but you know that if you look at that one in Fulham, for

example, it's only EVs, so now you're seeing people going, oh, I have to bring that whole EV experience and that charging experience to the front of the house. So, they're starting to think about what's going to be important in the eyes of the customer and that will make them fit for purpose. That whole payments thing, I think has to change as well. I got very frustrated at a – and I won't name the company – but went to a public service point and I had to tap my card, and of course it took £40 and then failed to deliver any charge. So then I tapped again, it took another £40 and failed to deliver any charge. By the time it actually got round to giving charge, I think it had taken £120 and then I had to wait three days to get the £120 back. Now that was actually OK because it was on a credit card, and it didn't really matter. I wasn't going to get stung for it. But if your credit card's nearly maxed out or if it's on your debit card, that could be a really frustrating experience for you. So, there's little problems like that that I think we still need to solve, right?

10:45 Niall Riddell

100%. The, we get quite a lot of lower income drivers who come to us with exactly that pain point, which is I'm having a pre-authorisation, and the reason the… pre-authorisations exist for a very good reason, but they have the pre-authorisation exactly as your experience two or three times it holds the money back. It's the bank that's holding the money back, not the Charge Point Operator, and it's all to do with the, the recognition of what the payment is for. And there's quite a lot of work going on in the industry to try and move that payment return process to something much more akin to a petrol station, because a petrol station also does pre-authorisations, but the money comes back much faster. So, there's a lot of work going on in the banking and payment world to try and speed up that return of cash to the driver. But the reason the pre-authorisation exists is, sadly, near the beginning of our journey people would put credit card readers on with no pre-authorisation, so a driver would turn up with a pre-loaded credit card with £1 on it and they'd tap their £1 credit card and go "yep credit card," and they'd start pushing electricity out and after £50 worth of electricity they'd stop the session. None of the money would be taken because there's not enough money on the credit card and the driver would drive off with free electricity, so, unfortunately, the things we're having to put in place as a consequence of bad actors in our industry, and what happened is the £1 went to £5, the £5 went to £20, the £20 went to £40, and before you know it, you got pre-authorisation escalation. So yeah, we we're doing lots in this industry to try and make it easy for drivers. In our case, it's a slightly different ecosystem.

12:16

The business pays for everything that goes through the card, so as a consequence, the business is ultimately the one who's responsible for paying that final bill. So, I will reach out to the businesses at the end of our billing cycle, speak to them, and they will then pay the invoice on behalf of all of their drivers, which, if you think about it, if your boss has given you an electric van to replace your diesel van, seems like the fair thing to do. Here's a solution to pay for all your electric charging and will help you when you're on the road, will help you when you get into the home and will help you in the workplace, and that ultimately is where businesses are going to have to get to if they're going to make that transition to a full electric fleet a reality.

12:52 Toby Corballis

Well, so there's a couple of good points in there. One is, it isn't necessarily the EV because I think if you're an EV driver, well, the face of this, of this interaction that you're seeing is the Charge Point Operator and so you'll often be cursing and swearing and taking their name in vain when it's actually not them, but it's the way the system is set up by, you know, going right the way back through to the bank. So you've got multiple actors. The issues could be happening at any point in that chain. So, it's not

necessarily anything to do with the charge point operator at all, although I suppose it could be, but it's not necessarily. And I think the other thing that's important there is and bringing it back to, you know, what PAUA does, which is the fact that you're billing those business customers and so you've got a different way of, of managing that service, which I think makes it much smoother.

13:44 Niall Riddell

The other thing that sits in alongside that is the experience. A van driver is usually going to a charge point because they're on a job, they're about to go to work, they're about to deliver some goods, they're about to fix a boiler. As a consequence of that, they just need something very simple that just works. If they're standing there cursing at the charge point operator because the credit card thing has failed, again, that's never going to work. They need something they can literally tap and go. Going back to what we said earlier about time, we need to make this as fast as possible for the driver because when they're not delivering goods or fixing boilers, they're not making money for their employer and therefore from an employment perspective, tap it, charge it, move on. So, the time is far more important almost than the cost.

14:24 Toby Corballis

So time is really important. Having those breaks if you're doing long journeys is really important. I mean, you see those signs on the motorway saying, you know, take a break every two hours, which is, which is good advice, and I've seen people, you know, sitting in their EV at a charger, maybe having a little nap – that's not a bad thing actually, if it's ten minutes or something. What do you think the future looks like in this space as we, you know, things like ISO15118 come into play, which are, you know, new protocols that… they're going to basically turn the car into a wallet amongst other things and enable V2G and all the rest of it, but you know, that also has the effect of helping turn the car into a wallet. Is that going to simplify and streamline the process a bit more?

15:12 Niall Riddell

100%. I guess like a lot of technology that we're dealing with, we need to make sure it works and it's reliable and stable and ideally as close to universal as possible. The ISO 15118 standard which I have mistakenly called in the past "15 lemonades" is a standard which effectively tokenises the vehicle and the charge point, and those two tokens then speak to each other and go, "yes, I recognise you; yes, I recognise you," handshake and enable charging to take place. So I always joke that Tesla drivers don't drive electric vehicles. Tesla drivers, drive Teslas and Tesla has built a beautiful system, you know, from top to bottom of driver experience, you know, onboarding, payment, charging, it's all nice and slick. ISO 15118 enables us to get van drivers and multi mark vehicle drivers into an experience similar to a Tesla. It means that they can drive down the road, grab the connector, plug it into the vehicle and the charging will then handshake and start automatically. I've seen it done. It's a very slick process. The challenges that sit in this space is you need widespread adoption for Charge Point Operators to enable it and widespread adoption for car OEM manufacturers to deliver it, the capability in the software from the factory, and then people like us can put a token on the car and we're working with the Charge Point Operator. We put a token on the Charge Point Operator and then when the van turns up at the charge point, the two handshake and happy days – we're able to make a simple, seamless transaction start without apps and without cards, and the beautiful thing is, if it's done right, you can update the driver, give them insights to their charging, tell them it's still running, give them the cost in real time until at the end of the cycle it stops. The driver can then head on their way and the charging sessions, in our case, would all get centralised to the fleet manager. So, it sounds like a dream. We're getting closer and closer to a decent number of partners on all sides. The team at Hubject are probably leading the charge

on this. They have an ecosystem now and they, they've got a dozens of different automotive operators, Charge Point Operators coming together to enable this ecosystem to work.

17:25 Toby Corballis

Yeah, it's often not the biggest drag in the world, but just the idea that you can plug it in like I've done. I've, I've got an Audi, but I can plug it into the Tesla network so I've got my car set up in the in the Tesla app, and then if I find that I'm at a Tesla Supercharger that's open to the public network, I can just plug it in and tell it in the app just start charging. And it's so much simpler. It does it really does simplify it, make it a lot easier.

17:48 Niall Riddell

You've got to be careful about that because that description you just gave is not as fast and slick as you'll be able to do when we get to a full 15118 deployment. When we get to a full 15118 deployment, there's no app. You don't need the app. You set it up on the car. The Charge Point Operator has the other token. You plug it in, you walk away, That's it. It's done. And that, I think for some people, the app is a barrier. I have 110 EV charging apps on my phone. You quite get people to turning up saying "I've got eight to ten." I've collected them. I've got 110. We don't need more apps. We don't need more cards. What we need is better consumer experiences.

18:23 Toby Corballis

I agree with that. I did, ended up at a motorway service area and it was a provided a CPO that I hadn't come across before, because there are so many CPOs at the moment – we'll talk about that maybe in the moment – but again, they wanted me to download their app to get 5p off per kWh. Now that's quite a nice discount, 5p off per kWh, but I just didn't want to go through the faff of downloading an app, you know, there's no Wi-Fi for me to download it over, I've got loads of these things on my phone already. It's like, I just can't be bothered. So, you know what? I'm not going to bother. I'm just going to tap and do it and you know, be lumbered with the five pence per kilowatt extra, which sounds economically foolish, but it's just that mindset wise, I can absolutely see why people go "I can't download another app and then put my card details in there and then sign up and consent to this, that and the other. It's just going to take too long. I'm not doing it."

19:19

We should talk about the amount of, well, we've talked about the amount of apps, but the amount of apps is symptomatic I think of two things: one is a way of thinking – we must have an app and that's not necessarily the right way of thinking, but the other thing it's symptomatic of is the fact that there's just so many CPOs. I think in Europe at the moment, there's more than 2,000. That's a very saturated market. I can see that, you know, people who think about the sort of experiences that you're talking about, streamlining it, making it fit for purpose in the eyes of the customer, which is a thing that we always talk about as a consultancy as being something that differentiates you and makes people want to come back. We're probably not going to see all of those CPOs do it, and with such a saturated market, and we are playing a bit of crystal ball gazing here, but where do you think the market's going to go? As an actor in that market space now? Do you think we can maintain that level of Charge Point Operators or do you think there's going to be some consolidation or… What do you reckon?

20:23 Niall Riddell

I've got some quite particular views on this. If you break down the Charge Point Operator business model and the types of Charge Point Operators, it helps reveal where this might go. If you look at

something like a retail outlet, a supermarket, a pub chain or something similar, you can quite quickly see that they quite often own the land. They've got a relationship with the customer. And this is a bit like Wi-Fi, you know, the, the new generation of drivers who turn up expect it to be available so they're expecting to see a charge point at their farm shop, at their retail outlet, at the local pub chain. So, in that world, a pub manager or a retail manager might go out and go, well, how do I build a public charging network for my 5 pubs I've got in Southeast England? And they will go, and they will find an electrician who will install a charger. They'll put it in the car park, they'll hook it up to a piece of software and they'll start charging those drivers for that experience of plugging in at their, their local pub chain quite quickly. You can go, "well, that's another Charge Point Operator", and therefore you, you have to get into the definition of what the Charge Point Operator actually is and the CPO could also be the owner. In this case, the pub chain owns that infrastructure, but the operator might actually come from the software provider. So, a software company like Fuuse will provide you a service to manage phone calls or manage payments, look it up, time, reliability, all that sort of stuff, and therefore they might end up operating it. So, you might have a pub chain's brand on the charger operated by Fuuse or Monta or Spirii or one of the software providers, but in an app, it might appear as a pub chain brand, so quite quickly you go, oh, there's another operator. So that's the 2,000 operators you referred to a moment ago and at that sort of retail park and outlet level, you can see that what will probably happen is you'll get consolidation at a software layer. So those retail outlets will all be running on one of five or ten different providers: Driivz, Ampeco, Fuuse, Greenflux, Spirii. These guys are all aggregating locations up and down the country or across Europe to enable a common software experience. However, if you then go and look at like a motorway or an arterial road network, these are really strategic locations to get charges, and most of the charges going on to those locations on A-roads and highways are going to be either rapid, ultra rapid, super rapid, fast with an extra dibble of really fast, but they're going to be sort of 100 kilowatt plus charges. These are much more expensive bits of equipment. It's a much more involved process to operate and manage a big hub of 20 or 30 charges, and therefore you'll get specialised operators, and those specialised operators today are people like InstaVolt, GRIDSERVE, Osprey, Ionity, Fastned and there's you know, dozens of them. You go into Europe, you got ANBW, Electra, you know, there's a lot of operators running these arterial road networks. That for me is more likely the space we're going to see brand name consolidation. So, you've got vested interests from BP who run petrol stations, Shell who run petrol stations, Motor Fuel Group who run petrol stations, who are going to be looking at these networks and these locations and going, "do we want to aggregate, Do we want to buy? Do you want to build our own?" And we're seeing various movements from those parties already. So, I can see aggregation happening, acquisition of some style on motorways, but it might not be of the best, it might be aggregation of the worst people who fail before they succeed and, therefore, you might find you get asset sales from collapsed businesses who aren't performing well on these areas. So, I think consolidation of some form will happen. It might be software layer at an AC level and a sort of retail outlet level and it might be more like a big aggressive player picking up failed businesses on the DC arterial level, but I think we've got a few more years to go before we start seeing that happen at a significant level.

24:25 Toby Corballis

That's actually a maturation of the of the marketplace, right? Because I mean you see people like you talked about – Shell and BP Pulse – those are examples of organisations that have decided that they're going to exit the home market. Now, wind the clock back five years, six years, all of those players were thinking, well, we'll do whole of market. Now what you're seeing is no, we're going to consolidate around…. Now, I can't tell you if they… that's the right strategy or the wrong strategy for them, and time

will tell us, but you can see why they were doing it right? You can see that's them thinking, well, we'll consolidate around where we know. And yes, they may then pick up stranded assets from companies that you know, may be too small to make it profitable in that space or didn't get it quite right or whatever, and then they consolidate, as you say, by taking some of those worst players out of the market or sorry, hoovering them up as they take themselves out of the market. So yeah, definitely can see that.

25:22 Niall Riddell

The home environment is a really interesting one because there's now hundreds of different registered providers of home electric vehicle charge points so manufacturing and delivering home energy hardware is quite hard because there's hundreds of operators. And particularly with the flood of Chinese providers, we've got more hardware than you can imagine. We do have some really strong homegrown players who are, you know, taking a decent market share of that. So the Indras, the myenergis, the EOs, who've all played a role in getting home charges onto people's houses, but you can see that the big oil and gas, and energy, companies are kind of stepping away from that point. EDF is perhaps an exception because it's still involved with Pod Point and it's doing things at that household level, and British Gas has brought its own charger to market in the form of Hive. So, there's a dynamic in the home space which still hasn't quite worked out. What we do know is installing a home charger is quite hard work. People often, you know, "oh, it's £1,000", and then you have to add a cable run, add a drill through a wall, put in an earth rod and the complexity of home installation means that it's put a lot of the bigger players off that marketplace. We're now starting to see the rise of a few specialists like Plug Me In, who's specialised in getting charges into people's houses and as a consequence, I think we'll see quite a lot of dynamic changing between your local electrician and a large specialist player in terms of how we bring volumes of charges to the market because we still got millions of homes to outfit the charges. So, there's still a good market opportunity in there. It's just, who's going to win that battle for a smooth, slick experience in the house? But you like you say, BP backed out of it previously. A few others have looked at it and gone, "not for me, thank you."

27:00 Toby Corballis

Yeah. And I think that's fair, right? They... If you want to specialise in a particular market and not another, that's entirely up to you as a company to have that strategy. And we'll see how that works out for them, and there's all sorts of dynamics that can come into whether they win or lose in those markets, product market fits, you know, thinking about things from the customer's side, what's the payment experience like, have they got the, the right people in the, in the leadership teams? All sorts of things that can come into to, to that, and that's true of any business, by the way so I'm not singling anyone out, but let's, let's just see. I mean, it'd be great to see how that plays out and as you say, you've got all those people in the marketplace also doing consolidation of things like software – Hubject and so on.

27:46

I wanted to talk with you a little bit, just that this is about something you did a little while ago, and I just wanted to find out how it was. I think you drove an EV from Land's... Sorry, John O'Groats to Land's End, or was it the other way around?

27:59 Niall Riddell

It was John O'Groats to Land's End. For the last three years we have supported something that Green Fleet has run called the EV Rally. So, in 2022 we set up to run a group of vehicles – about fifty – from John O'Groats to Land's End. And this was quite near the beginning of our own journey. And the big

challenge we had is we volunteered to provide the Electric Vehicle charge cards to get this group of fifty commercial vehicles from one end of the country to the other. So, our challenge for us personally was aggregating a big enough network to enable drivers to charge seamlessly on one, one hard tap, tap, tap all the way from one end of the country to the other. So, we did that in 2022 and we were fortunate that we had companies like Charge Place Scotland join us, we were one of the first partners to bring Charge Place Scotland to market… No, we were the first partner to bring Charge Place Scotland into a roaming solution and that enabled us to bring that charging experience from one end of the country to the other. So people like GRIDSERVE joined us, SWARCO joined us… We got this network which was big enough to drive all those vehicles.

28:58

The following year the challenge changed, so in 2023 we took the Five Capitals challenge. We drove from Cardiff to London, London to Edinburgh, Edinburgh to Belfast, Belfast to Dublin and we swept in the Irish experience into that. And it was very interesting because Scotland's network is quite fragmented. It's got more rural network but when you hit Northern Ireland and Ireland it's even more fragmented. It's earlier stages to development than the network we have here in England, in particular. So as a consequence, this experience showed us what we could do. The other nice thing we did in 2023 was we took 2 electric trucks with us. So, we took an electric DAF and an electric Mercedes, both rigid 17, er 19, tonnes, I think the Mercedes was. We took them and drove them round these routes and that started to showcase what was possible with an electric truck and what was very, very hard with an electric truck. And we've got, you know, some experiences of people putting the vehicle sideways, putting cables over the top of fences, using other people's locations, you know, sharing depots, which enabled us to then run the 2024 rally where not only did we have the rigid truck from DAF, we had a fully articulated eActros 600 from Mercedes. So this was pulling, it was a 42 tonne payload in total, a gross vehicle weight, I think they like to call it. We had a motorbike… so crazy, Sam Clark took his motorbike on the rally. We had a prototype vehicle; we had a new to market four by four and it was really trying to push the boundary and showcase what the vehicles can do. And ultimately, as the official charge card provider, we provided the charging for that whole flotilla of vehicles as we went around the country trying to demonstrate what is possible with electric vehicles today. And it it's exciting because you start to see that, you know, the mainstream cars are here, you know, you can drive wherever you want in a mainstream car now, but these more each vehicles, you know, the off roading four-by-fours, big heavier vehicles we need to decarbonise, you know, long distance road transport are starting to emerge as well.

31:08 Toby Corballis

I think that sounds really good. Presumably nobody was on an e-bike on that. I know Sam was on an E motorbike, but I mean an E… not on an E pedal bike.

31:16 Niall Riddell

No, no E pedal bikes. Maybe next year. I'll suggest it to Sam, I think he'll like that.

31:20 Toby Corballis

I've got a bike, but I'm still on pedal power only, unfortunately. And just before we wrap it up, if people want to learn more about PAUA, they want to learn more about the work that you do, where should they go?

31:32 Niall Riddell

So we are at paua.com, paua.com, or you'll probably find we're all over LinkedIn. Look for the little pink blobs, the little pink chevrons. We find ourselves onto LinkedIn social media every day. We love speaking to people. Where a lot of our innovations, including how we reduce the cost of energy, how we manage and reimburse home charging, how we enable shared depots… Those innovations come from our customers. They come from people like get you going, "I have a problem, how do I solve it?" So come and speak to us and we can solve your electric vehicle charging problems.

32:03 Toby Corballis

What we'll do is we'll drop your URL under the show notes as well so that people can click on that from there if they if they're going to this from the wickedproblems.fm website, but otherwise it's www.paua.com, if you're listening to this on one of the other podcast platforms, Niall, it's been fantastic to have you on. Thank you so much.

32:28 Niall Riddell

Thank you Toby. Appreciated it.