

Future of Mobility: Electrification in MaaS

Deeshraf Elias, Podcast host, Deloitte Mobility Ecosystem Manager

Gregory Ducongé, Chief Executive Officer, VULOG

Helmut Rebstock, Co-founder, TGOOD Group

Deeshraf Elias: The convergence of emerging technologies combined with changing consumer and societal preferences has resulted in the rapid adoption of Mobility-as-a-Service also known as MaaS; getting users from point A to B in a flexible, multimodal, and seamless way through a single interface. Recent collaborations have also seen the integration of eco-friendly transportation modes into MaaS. Today, we discuss the possibilities of electrification in MaaS.

Welcome to another edition of our Future of Mobility series, bringing you the top voices from the sector - decision-makers, innovators and shapers pushing the envelope on future ideas for transportation and beyond. I am your host, Deeshraf and today, we are joined by Gregory Ducongé, CEO of VULOG and Helmut Rebstock, co-founder of the TGOOD group. Gregory and Helmut, thank you for joining me today!

Gregory Ducongé: Thanks for the invitation, Deeshraf!

Helmut Rebstock: Great to be here.

Deeshraf Elias: Let's first start with some introductions. Gregory, we understand that VULOG is known primarily for powering the technology stack behind shared mobility solutions. I want to hear your thoughts; do you see MaaS as a huge step towards the future of mobility?

Gregory Ducongé: Yes, you are absolutely right. So VULOG provides the technology that powers some of the most successful shared mobility services worldwide. A lot of great car-sharing services and our customers bring us amazing car-sharing services across the world in over 40 cities today in Canada, Europe, obviously North America, and also in China. I do



**MAKING AN
IMPACT THAT
MATTERS**
Since 1845

believe shared mobility will clearly become the norm in large cities in the years to come.

Our cities, as you would know, living in Southeast Asia, are getting more and more crowded and polluted. We do not have space anymore for each individual to have his/her own car. So we need to change that and I believe that it's good news that it is happening now and mobility-as-a-service is clearly a big part of the solution. Probably not the only one but clearly a big part of it. I believe the future of mobility will be a combination of mobility-as-a-service, including the use of public transportation but with some other light mobility alternatives like personal bikes and probably more walking as well. All of these will only work as long as we make sure that we consider people living outside the city as well because there are a lot of commuters there. Unfortunately, mayors when they make decisions about mobility investments, they tend to forget about these important people. We need to have a solution for them to get into the city.

Deeshraf Elias: And Helmut, TGOOD is one of the largest electric vehicle charging infrastructure provider in the world today. From your experience, how is TGOOD looking to address and support the market demands of MaaS providers?

Helmut Rebstock: A big part of that game is big data. So the fact that we are operating a network of more than 270,000 charging stations in more than 330 something cities today gives us experience in location decisions which we are using in the future for co-operations with MaaS providers so that we can make sure that everywhere you need charging, it is available.

And this experience is really coming from a lot



of body of data. It is a big data game; we have about 5 terabytes of data per day which we are processing at the moment. And we're working with these thermographs slides – I think you know what I mean – where we really track where is mobility going, where do we need the chargers in the future. And with the use of a lot of artificial intelligence, we are now able to very well select the next location for the next chargers so it has the highest usage.

Yeah, in summary, MaaS is the future, it will be electric, and the charging infrastructure is a very important pre-condition that it works. And that's exactly where we are.

Deeshraf Elias: And Gregory, from your experience in the MaaS industry, do you see a shift from traditional internal combustion engine (ICE) vehicles to electric vehicles?

Gregory Ducongé: Well, the shift from ICE to electric vehicles, I believe, is happening. And

it is clearly happening much faster on shared mobility services than, let's say, on the car market globally. I must admit that it is pretty different from one country to another but the trend is definitely on. And to share with you a few data points related to our business and the business of our customers: so today, around 90% of the fleets operated by our customers in Europe are electrified. It is around 20% in North America, and 100% in China obviously. Why are we expanding in these kinds of trends today? First of all, I believe it's coming from the people living in the cities who really want to see strong, real actions to decrease pollution. I think pollution is now a concern everywhere in the world and I believe cities now get it. They understand that it is in their interests to promote electric shared mobility solutions and they start to do so.

In Madrid for instance, if you run an electric car-sharing service, you will not pay any on-street parking fees. In Paris, it is about the same thing,

you would pay a reduced fee. So cities tend to push now for electric shared mobility services and I believe that this is great news.

Second of all, car-makers now understand that urban mobility is definitely changing. In a few years from now, people who are today buying cars will no longer buy cars but will consume mobility like they consume Netflix. So if EV carmakers want to remain relevant for those billions of people living in cities, they need to transform themselves and they need to become shared mobility operators and they do so with electric cars at the same time to promote their new electric vehicles. And this is what OEM customers are doing today all over the world.

Now, the big question is how will this be impacted by the COVID-19 crisis? I don't believe the trend towards electric mobility will be really impacted; it could even be, I believe, quite positive if this really helps the world understand that we need an acceleration towards a more sustainable future so I'm pretty optimistic about that and I'm pretty optimistic that electric shared mobility will definitely accelerate after these weeks of COVID crisis.

Deeshraf Elias: Helmut, you have had extensive experience in providing electrical charging infrastructures for EV mobility fleets. What are some of the unique factors behind a successful and reliable fleet charging infrastructure?

Helmut Rebstock: The most important part is actually the part you don't see. One of the really big challenges in the electrification of mobility is the availability of power. By now, all is pretty clear. In the beginning, it was this hype of "OK, perfect, we do fast charging – we do whatever here. Then we can't because the grid is not able to provide the amount of power you need



for fast charging, and even for slow charging for a serious amount of vehicles because the grid does not have the power available when you need it." It will take some years and a lot of investment to get there. And so, you have to do – and that was what I meant with "it's the part you don't see" – the charging software system. The management system behind is the important thing then, because that shows you where in the grid you have the power available, how many cars or vehicles already on your charging systems, how full an area is – so if a new charger comes, you can decrease the power output, and increase the power for the new ones. You can also make sure they are safely charged. This is still an issue in the electric mobility space as you know.

And so this is where the algorithms I'm talking about come in. This is where a MaaS operator we would operate – for example – together with, would use our software system because it is a cloud-based software system

in a software-as-a-service model, a model with the logo and everything but then the operator can determine what's important to him and he can see the status of the whole fleet and the charging. So that group charging system, principle, and idea, together with this management software, over the whole thing is actually now the key and this is also where we are keen in investing most because the hardware – inverters, charging terminals - is becoming a commodity.

Deeshraf Elias: What are some of the synergies between MaaS-type models and electrification? Gregory, perhaps you can weigh in on this?

Gregory Ducongé: Well, I think the point of Helmut is extremely relevant. Once you have a very large fleet of shared electric vehicles, not only you become relevant obviously in terms of providing a great mobility offering to the people, but you are also solving the issue which is the storage of energy. And clearly, when we talk to our customers, especially in Europe, this is something they have in mind and this is something they have in their business plan. Not very short term because the fleets are not at right scale today but in a few years from now, when you have a few thousand cars in a fleet, it will make a lot of sense for these companies to not only provide mobility but also to provide energy storage. Here, we have something that makes a lot of sense.

In addition to that, I believe that electric car-sharing can actually accelerate the deployment of the relevant charging network in a given city. You know, it's always the egg-and-chicken issue. If you don't have a charging network, people will not switch to EVs but if there are no EVs, why would you invest in a charging network? I strongly believe that - and this is proven by fact now in a few cities – by heavily promoting

electric car-sharing, the city can actually help put enough EVs in the street so that deploying a very good charging network makes financial sense for a private company without huge subsidies. So here again, I think there is something that makes sense. And combining a strong push for shared mobility at the same time with electrification makes a lot of sense.

Deeshraf Elias: Both MaaS and EVs are huge developments in mobility that require the involvement of many different players, from policymakers to investors and automakers. What do you think is required from the mobility ecosystem for electrified MaaS to be mainstream?

Gregory Ducongé: I believe that if we want to significantly accelerate the move towards electric mobility-as-a-service, we need policymakers and cities to – excuse me for being blunt here – to stop playing around and become really serious about it. Decreasing congestion, decreasing pollution levels are now a must so we need several policies for shared electric mobility and really ambitious plans to deploy green transportation.

It is, I believe now, just a question of ambition and willingness to change. Extending bike lanes is just one part of the equation and while it may be a speaking point for potential mayors looking to get re-elected, it is not enough to really make a long-term difference in our cities, in our lives.

There are several very concrete actions that we could take very quickly, in Paris for instance, that would really transform mobility. I would give you a few of them.

The first one would be to significantly increase the cost of inner-city street parking. Increasing the cost of parking is a tough political decision

to make but I'm pretty sure that people will probably start forgetting about their personal cars and start thinking about electric car sharing.

Secondly of all, we allocate at least one-third of on-street parking for cycle lanes, wider pavements, parking reserved for shared-electric mobility such as moped, scooters, and cars.

Third would be to create some sort of transportation hubs around Paris with some car parks so that people coming into the city can not only park their cars but also get access to multimodal transportations so they can get into Paris with shared electric mobility. We shouldn't forget about all these people who work inside the city but cannot afford to live in the city.

One additional point would be as well, to promote car-pooling to and from these transportation hubs so that people can move around without even owning a car – sharing the car with a neighbour or even sharing a car with someone going in the same direction.

At the end of the day, what we need is political decisions, ambition, and courage.

Deeshraf Elias: And Gregory, VULOG has had its operations mainly in Europe. What is your view on the Southeast Asian market for MaaS offerings?

Gregory Ducongé: Yes, you are very right. VULOG is pretty strong in Europe and North America. We have a clear leadership position. While we are also in many other parts of the world – such as China, Australia, and Brazil – we are not yet in Southeast Asia. You know when you build a business and you run a business, you need to make choices and obviously focus

your energy and resources on some priorities. Until now for VULOG, it has always been Europe and North America. But Southeast Asia market is extremely promising with some great prospects in Malaysia, Indonesia, Vietnam and obviously Singapore which has been, for a few years now, at the forefront of the mobility revolution.

I would say that with what would be coming in the coming years with consumer growth, population growth - the access to affordable and clean mobility will become an even bigger concern than it is today for the cities in this region (SEA) and I believe that VULOG needs to invest much more in this region (SEA) than what we did so far. I'm pretty sure that next time we will have a presence in the region with at least a few projects. I expect this (SEA) market to actually become one of the largest ones for electric shared mobility in the years to come because of the issues I told you about - growing population, growing pollution. So we'll be there.

Deeshraf Elias: And Helmut, majority of TGOOD's charging infrastructure is centred in China whereby there is huge governmental support for it. As we see a growing interest in EVs especially in Southeast Asia, do you think the region has the necessary infrastructure to facilitate electrified MaaS offerings?

Helmut Rebstock: Well, outside of China, it is very easy to say that the infrastructure for electric mobility is not there - nowhere. I wouldn't know of any country. Even in China with all of these hundreds of thousands of charging points, it's only relatively better but there are millions missing when you say "ok, is there really enough infrastructure for electric mobility so that it really replaces internal combustion engine vehicles."

Now, if that's even the case in China, then you can imagine my answer is very simple - no, it is not there in Southeast Asia and that's why, as Gregory has just said, we are looking into these

markets and we are in conversations with the relevant parties for helping to do that as we speak.

Deeshraf Elias: Expanding on the questions I have just asked, from the strategies that you have been seeing across the market, I wanted to hear from the both of you, should an effective charging infrastructure be developed first or should EV adoption be encouraged first? Gregory, maybe we can start with you?

Gregory Ducongé: Ok, what I can tell you is what we have experienced with different projects that we've launched with our partners across the world. And not one single time in the cities where an electric car-sharing service have been launched, there was a good or relevant charging network. I think this is a critical point, especially if you are an individual thinking about buying a car. As far as I'm concerned, I thought one year ago about buying an electric car and I looked around, and there was no charging infrastructure. So there's no way for me to buy an electric car if there's no charging infrastructure. But when you are an operator of an electric shared mobility service, it's slightly different because if the city is putting the right - I wouldn't say subsidies - the right promotions in order to help you deploy your electric shared mobility service, and at the end of the day, you can take care of the recharging of your vehicles without adding a significant price tag to the end-user. That might be fine.

So what we've seen in some cities where our customers have launched some larger electric car-sharing services is the following: they've launched 500 to 1000 electric cars and in parallel to that, they built their own charging infrastructure. They created their own charging hubs, 3 or 4 in a given city so that they were capable of recharging these vehicles quite fast, quite efficiently, without relying on local

charging infrastructure. It worked but in the long term, clearly, you need to have a relevant charging infrastructure otherwise except shared mobility services, you will not push individuals or even companies to get EVs.

I believe that if you start first with shared electric mobility services and it helps you create the right charging infrastructure, then that makes sense,

Deeshraf Elias: And Helmut, what about you?

Helmut Rebstock: So as you said Gregory, the provider can take care of the charging. He has to do it anyway when he launches his service because otherwise, there's no point doing it. So that is a, I would call it, a logical chicken-and-egg - it comes together.

When you look at the mass adoption of electric mobility, then it looks different because when you look at the psychological barriers to the wider adoption, then range anxiety takes the number one spot. People are not buying electric as long as there is the chance of even once per year, when I want to visit Grandma in a few-hundred-kilometres-away city, then I run out of charge. Nah, let's stay with ICE. So for that part, I'm pretty sure simply psychologically, the infrastructure has to be there because we are - at least in most of the countries - not able to dictate the buying decision of the buyers so for most parts of the world, it needs to be a motivation there to switch and that motivation is only starting to be there when - what I call the user experience before - is as close to the experience of my gas guzzler as possible.

Deeshraf Elias: Now, I'd like to wrap things up and ask both of you something more personal. Gregory, what excites you about the future of mobility that keeps you up at night?



Gregory Duongé: That's an interesting question. You know, I've been doing this job for 4 years now and I must say that I love what I'm doing, I love my job. I love to see the impact that we have on mobility and I'm really proud of what the VULOG team has already achieved by bringing some great solutions to the markets to create a more sustainable world. I strongly believe we need to act now and really fast in order to really change the world and mobility for good. There can be frustrations sometimes as things are not really moving as fast as we would like. This frustration is probably shared as well by Helmut but at the end of the day, we are making an impact. We are transforming our cities for good and this is what makes our job extremely exciting. As far as I'm concerned, this is what makes it really exciting – thinking that we are making an impact and we are transforming our cities so that our children will have a chance to live in green and clean cities.

Deeshraf Elias: And Helmut, the same question goes to you. What keeps you up at night?



Helmut Rebstock: Well, what keeps me up at night is a big issue and we don't want to go into too much detail there but well honestly, I love the question because I could be retired already and honestly – this really says it – I am not because electric mobility and the charging infrastructure we are talking about today is not everything we are doing. This whole renewable issue I mentioned before is a big part of what we are doing and everything is simply under the theme of “we are going to change the way we generate, distribute and use energy on the planet.” It sounds big but as Gregory has said, whatever part you can play in that, it is very very important and working on that is honestly, something that gets me out of bed in the morning. And that also says something, because I'm a late person – I'm not an early bird – but working on these solutions that help get the planet away from the present fossil fuel development path; that is really worth getting up for it and working for it, absolutely.

Deeshraf Elias: Well, that was certainly a very insightful discussion. I would like to thank our guests today for joining us. Gregory and Helmut, thank you for today's electrifying session. And that's it for today's episode of our Future of Mobility podcast series. If you want to comment on this podcast or the topics covered, you can send us an email at seapodcast@deloitte.com. That's spelt S-E-A podcast @ deloitte.com. Also, don't forget to subscribe to our podcast to get the latest episodes – we are available on Apple Podcast, Google Podcast, Spotify, Soundcloud and Stitcher. I am Deeshraf and until next time.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited (“DTTL”), its global network of member firms, and their related entities (collectively, the “Deloitte organization”). DTTL (also referred to as “Deloitte Global”) and each of its member firms and related entities are legally separate and independent entities, which cannot obligate or bind each other in respect of third parties. DTTL and each DTTL member firm and related entity is liable only for its own acts and omissions, and not those of each other. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.