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Stories of circular economy in transport

CIRCLE2

CIRCLE2
VET and SMEs on the road to CE

Funded by the European Union

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Stories of circular economy in transport

The interviews we are presenting were carried out as part of the CIRCLE2 project and aim to report on the application of circular economy principles in the transport sector, at various levels.

We collected seven stories and testimonials from all the project countries: Lithuania, Italy, Turkey, Slovenia, Spain, and Scotland.

We interviewed two representatives of public entities in Lithuania, who are working to make public services more efficient and closer to people; the Chief Operating Officer of an engineering company that offers off-grid fast charging services for electric vehicles to private and public entities; the owner of a Turkish company specialized in cultivating and exporting fresh fruits and vegetables; the sales manager of one of the biggest retailers of cars in Slovenia; the founder and CEO of guppy, a car-sharing platform and, finally, the environmental and sustainability director at Malcolm Group, a Scottish company which offers transport services including logistics, rail freight, construction and vehicle maintenance services all over the UK.

This document is dedicated to students and teachers in vocational education and training, as a source of inspiration for their educational activities, but we believe it may be of interest to all those who are about to look at the circular economy from a multifaceted point of view.

The interviews are also available on Youtube.

The CIRCLE2 team

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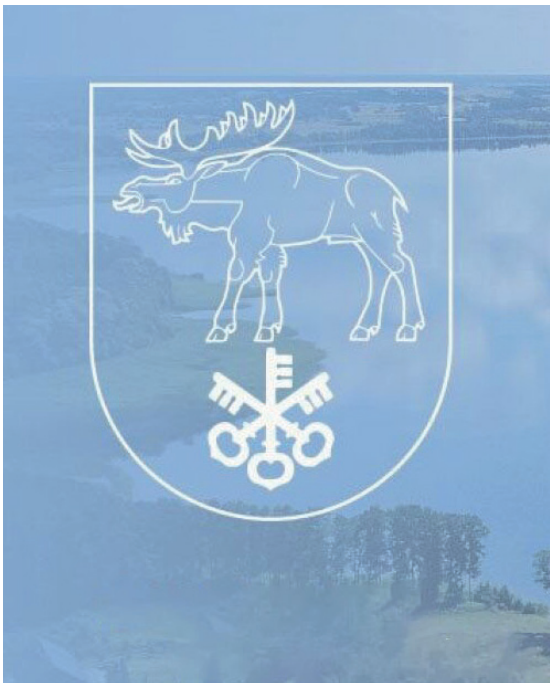
Interview by Panevėžys Training Centre

CASE STUDY: Sustainable public transport in less densely populated areas

Ieva Stalevičiūtė is administration Head of the Strategic Planning and Investment Project Management Department (Lazdijai District Municipality, Lithuania)



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WHAT ARE THE MAIN CHALLENGES LAZDIJAI FACES IN ORGANIZING PUBLIC TRANSPORT FOR A LESS DENSELY POPULATED AREA?

Lazdijai district is a large, sparsely populated municipality, creating significant challenges for public transport. The district covers over 130 hectares, with more than 18,000 inhabitants spread across towns, villages, and rural areas, many of which are difficult to reach using conventional public transportation systems. Traditional buses operate in the area and often run nearly empty because of the low population density. This makes it economically unfeasible to run a regular bus service that serves everyone and builds bus stops that can accommodate such a dispersed population.

Additionally, many residents live far from the main roads, making it hard to access existing bus routes, which can be several kilometres away. This situation called for an innovative solution that would address the residents' mobility needs while being cost-effective and sustainable.

WHAT SOLUTION WAS DEVELOPED TO ADDRESS THIS CHALLENGE?

To overcome these challenges, we developed a unique shuttle service, which is more flexible and suited to the needs of our rural residents. Instead of relying on large, underutilized buses, we introduced smaller electric vehicles that can pick up residents directly from their homes. These vehicles follow a shared route, picking up additional passengers along the way and then taking them to central locations in the district, where they can connect to other public transport services or reach essential services like hospitals, pharmacies, and government offices.

The idea behind the service was to provide a solution that could be easily adapted to the dispersed population of Lazdijai while promoting sustainability through the use of electric vehicles. This shuttle service reduces emissions and operational costs while increasing accessibility for residents who previously struggled to connect with public transport.

HOW CAN RESIDENTS BOOK THE SHUTTLE SERVICE?

We've made it as easy as possible for residents to book a shuttle. There are three main ways to do this. First, they can call a centralized call center where an operator inputs their journey details into the system. Alternatively, they can visit our dedicated website (lazdijaiveza.lt) to make a booking. Lastly, for those who prefer digital solutions, we've developed a mobile app available on Android and iOS, where residents can quickly arrange a pick-up and track the vehicle's arrival.

This flexibility ensures that residents from all age groups, especially the elderly, can comfortably use the service.

WHAT WERE THE KEY CHALLENGES IN SETTING UP THIS SYSTEM?

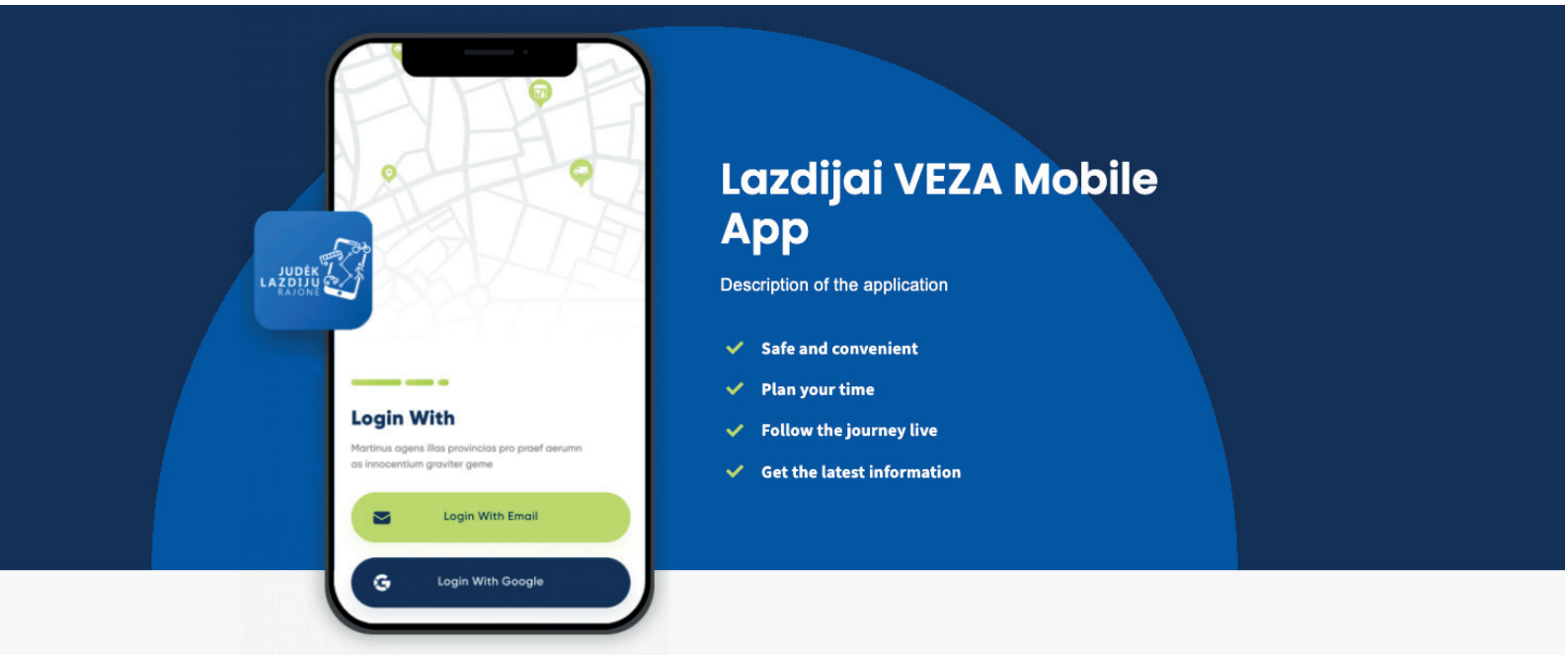
The biggest challenge was that we had to create the system from scratch because no similar service existed in Lithuania or the Baltic region. We had to design the entire structure, from how passengers would register and book rides, to how the system would operate in real-time. The technology side was especially challenging - we had to develop a mobile app and website that would allow users to book rides, track vehicle locations, and manage payments, although currently, the service is free of charge.

We were inspired by ride-hailing services like Bolt, and we tried to make the system as user-friendly as possible. Our goal was to ensure that the service could be easily used by everyone, including people who may not be familiar with digital platforms.

HOW HAS THE COMMUNITY RESPONDED TO THE SHUTTLE SERVICE?

The response has been overwhelmingly positive. Initially, we thought we'd need to conduct numerous presentations and community meetings to explain how the system worked. However, after only a few introductory sessions, word of mouth spread quickly, and the service took off. The demand has been so strong that we are already operating at full capacity. What's more, the service has gained a lot of attention in both national and local media, which has further boosted its popularity.

Even though we expected to face resistance, particularly from elderly residents who might be less comfortable with technology, the simple call center option helped them adopt the service without any issues. Within a couple of months, the system became an integral part of daily life in the municipality.



WHAT ARE YOUR FUTURE PLANS FOR THE SERVICE?

We're actively looking for funding to expand the service. Our long-term goal is to purchase more electric vehicles and potentially shift the operation from a pilot project to a fully integrated municipal service. This would allow us to reduce the reliance on large, polluting buses and improve the frequency and reach of the shuttle system.
At the moment, we take bookings one day in advance, which helps us plan routes and accommodate as many passengers as possible. If demand continues to grow, we may implement real-time booking and expand the service to meet the increased needs of residents. Priority will always be given to residents with disabilities and those who need to travel to essential services like hospitals or pharmacies.

HOW DOES THIS SERVICE ALIGN WITH THE EU'S GREEN DEAL INITIATIVES?

Our shuttle service directly supports the EU's Green Deal goals by using electric vehicles to reduce carbon emissions and promote sustainable transport solutions. The project is part of the LIFE initiative, which is a pilot program aimed at promoting sustainable practices across various municipalities in Lithuania. By demonstrating the viability of electric vehicles in a rural transport system, we hope to show that even sparsely populated areas can benefit from green technologies. Currently, our electric vehicles travel approximately 320 kilometres a day and have covered over 30,000 kilometres since the service began. This has not only reduced our environmental impact but has also provided residents with a reliable, cost-effective transport option.

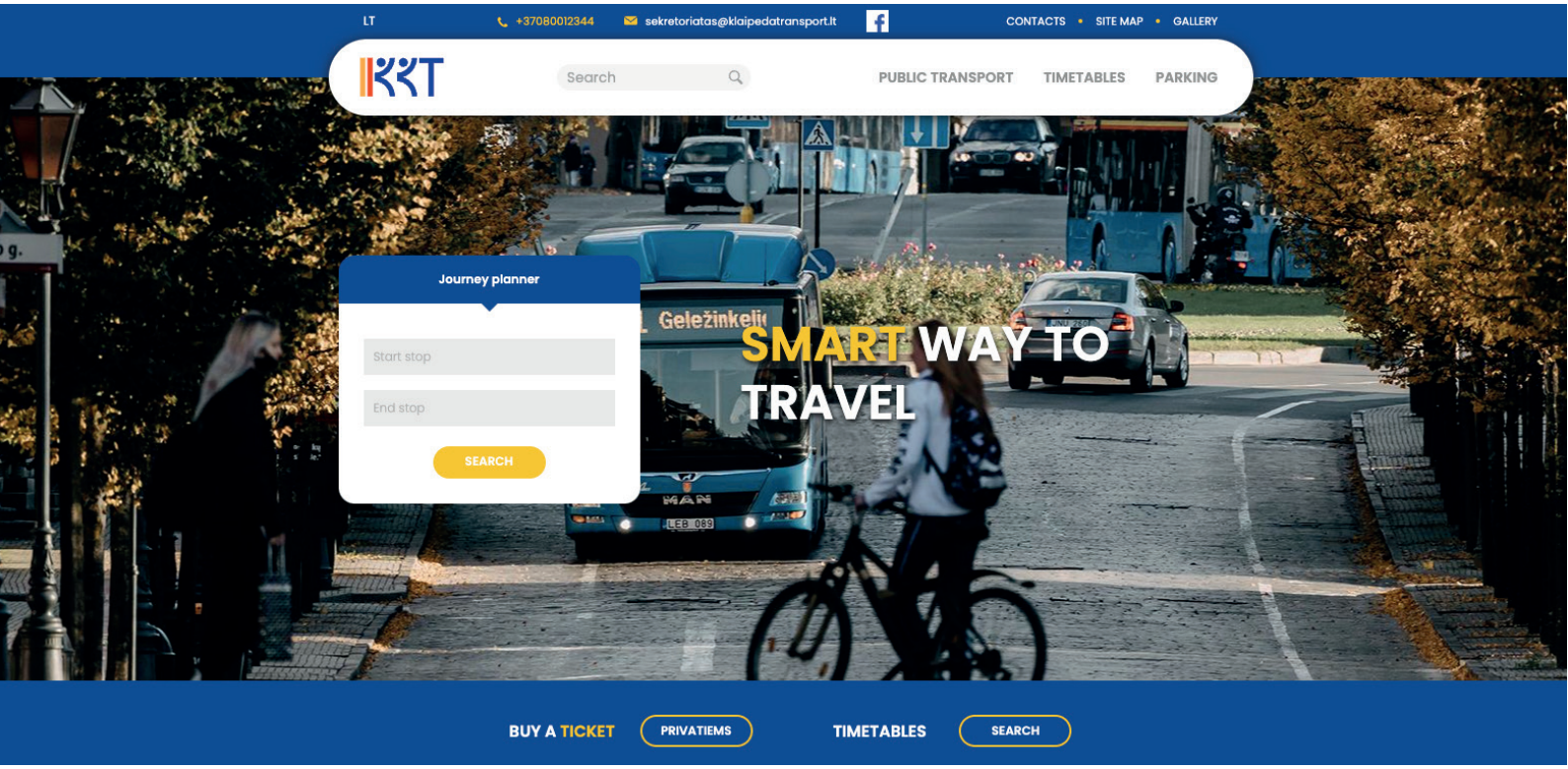
Phone consultation
Booking by calling the call center, in the app, or on the website.

INTERVIEW WITH ANDRIUS SAMUILOVAS

Interview by Panevėžys Training Centre

CASE STUDY: Sustainable public transport through big data and digital solutions

Klaipėda city and Klaipėda district municipalities



Andrius Samuilovas is the Deputy Director of Klaipėda Public Transport

KLAIPĖDOS KELEIVINIS TRANSPORTAS

CAN YOU EXPLAIN THE CONTEXT AND CHALLENGES KLAIPĖDA FACED IN MANAGING PUBLIC TRANSPORT?

Klaipėda is a city with a spread-out geography, stretching along both the lagoon and the sea, which makes managing public transport challenging. In the central part of the city, where many bus routes converge, we faced significant congestion during peak hours. Buses would frequently arrive back-to-back, causing delays and overcrowding at bus stops. This disrupted passenger flow and reduced the overall reliability of the system.

HOW DID YOU APPROACH SOLVING THIS CONGESTION PROBLEM?

To address this, we explored several solutions. One major step was partnering with a **Norwegian startup** to analyze public transport data. This collaboration helped us understand passenger flow and bus frequencies, providing insights into optimizing routes based on real-time data. The Norwegian team worked with us to design flexible schedules and adapt routes dynamically, which made our system more efficient. Additionally, through a GovTech project, we implemented an **AI system** that took this data-driven approach even further. The AI solution analyzed bus traffic patterns and suggested real-time route adjustments to stagger bus arrivals at busy stops. This prevented buses from arriving in clusters, reducing delays and easing congestion.

WHAT WERE THE RESULTS AND CHALLENGES WITH THIS APPROACH?

The AI solution significantly reduced congestion in the central areas, improving the flow of buses and making the system more predictable for passengers. However, we encountered a challenge: adjusting routes in the city center sometimes disrupted service in outer districts. For example, changing schedules to avoid overcrowding in the center could reduce the frequency of buses in suburban areas, where service is already less frequent. This complexity showed us that public transport is a delicate balance, and while AI and data analysis helped, ongoing adjustments are needed to ensure the entire network runs smoothly.

HOW DOES THE USE OF AI AND DATA CONTRIBUTE TO SUSTAINABILITY?

By optimizing routes and reducing unnecessary congestion, we're able to lower fuel consumption and emissions, contributing to our sustainability goals. Public transport, when efficient, encourages more people to use it instead of private cars, further reducing traffic and pollution. The integration of real-time data into our operations helps us ensure that buses are running only when and where they're needed, supporting our vision for a greener Klaipėda.

HOW DOES THE E-TICKETING SYSTEM INTEGRATE WITH OTHER TRANSPORT MODES?

Klaipėda's e-ticketing system is a key part of our public transport modernization. Since its introduction, the system has evolved to cover not just urban and suburban buses but also **water buses** and ferries, connecting passengers across different modes of transport seamlessly. The e-ticket works across the entire region, allowing passengers to use one card for buses, shuttle services, and even the **Smiltynė ferries**. We've also integrated with **Lithuanian Railways**, creating a unified experience where passengers can move from one mode of transport to another using the same ticket. This integration helps passengers travel more easily between the city and surrounding districts, while also simplifying fare collection and enhancing the overall convenience of public transport.

WHAT'S NEXT FOR KLAIPĖDA'S PUBLIC TRANSPORT?

We plan to continue refining the AI system, improving both central and suburban routes by integrating more data-driven insights. We're also looking into further expanding our use of electric and hybrid buses to reduce emissions. Our long-term goal is to fully digitize the network and make Klaipėda's public transport system a model of sustainability and efficiency, serving both the city and its surrounding areas.

HYDROGEN POWERED GENERATORS FOR FAST CHARGING

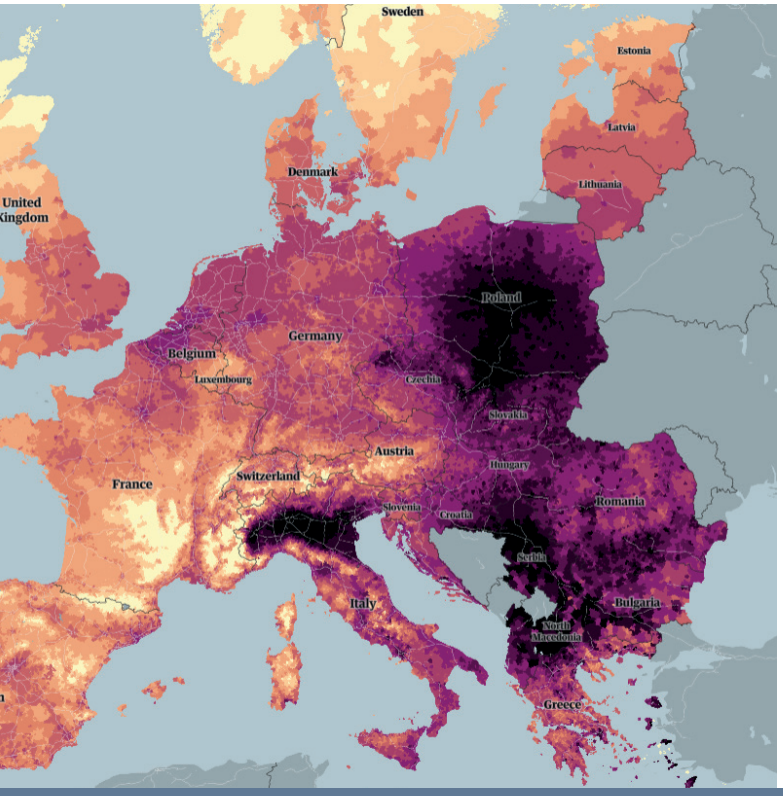
INTERVIEW WITH ALBERTO CAETANI

Interview by Bluebook srl

CASE STUDY: INNOVATION IN VEHICLES

Alberto Caetani at AEW Arnhem, Netherlands

Alberto Caetani is the Chief Operating Officer of Clean City: a Swiss engineering company based in Lugano.
The company offers off-grid fast charging services for electric vehicles to private and public entities.



Off-grid power generator May, 7 2024 - AEW Arnhem, Netherlands

Air pollution in Europe September 2023 - The Guardian

WHAT IS THE BUSINESS MODEL OF CLEAN CITY?

Clean City's business model involves building off-grid power stations tailored to the specific needs of our customers, ranging from small to large scale. Beyond constructing these power stations, we also offer fleets of electric vehicles, enabling customers (such as bus, truck, car, or ship operators) to replace their old polluting fleets. To facilitate this, we provide financing through a consortium-backed Special Purpose Vehicle (SPV) or Newco. This structure eliminates the need for upfront capital expenditure (CAPEX) from the final customer, who instead incurs operating expenses (OPEX) on a per-vehicle-per-kilometer basis.

CAN YOU TELL US IN DETAIL ABOUT YOUR PATENT?

Our chairman developed a patent that's owned by the Group. It's a US patent, as the US is currently our primary market for electric mobility, and US patents offer strong worldwide protection. We've since extended this patent globally.
This patent focuses on directly producing electrical energy in direct current (DC) mode. This is ideal for powering the batteries of various energy vectors, such as hydrogen, biogas, natural gas, or LNG. These vectors are fed into a fuel cell, which converts them into DC through an electrochemical process. Producing DC directly is crucial, as it can be used directly by batteries. This gives us a significant advantage over grid-transmitted energy. We avoid the inefficiencies and costs associated with energy transmission and transformation, as we produce DC on-site.

Clean City's mission is to offer solutions to public and private entities to replace their polluting vehicles with a brand new fleet of electric vehicles also supplying the needed clean energy for their fast charging.

WHAT PROBLEMS DOES YOUR BUSINESS MODEL RESPOND TO?

Our patented solution offers three applications: stationary power plants (10-50 MW), smaller mobile units (120 kW-2 MW), and floating docks for maritime use. These address the 'bottleneck' problem of grid peak saturation, allowing us to provide the additional peak power needed by customers. Unlike traditional grids, which have limitations, our Reverse Engineering process enables us to create dedicated power plants on demand, solving the grid's technical constraints. Our business model is particularly beneficial for companies struggling to finance a transition to net-zero carbon transport due to budget constraints. We provide full financing, eliminating upfront CAPEX for customers. Instead, the investment is spread out over OPEX, making the transition more manageable. This allows customers to gradually pay for the infrastructure and vehicles over time, eventually owning both.

HOW DOES IT FIT INTO A BROADER CONCEPT OF CIRCULAR ECONOMY?

Environmental sustainability is our top priority. We're committed to achieving a truly circular economy through partnerships with other companies. For example, some of our partners process solid urban waste to produce hydrogen, which we then use in our systems. This means that even a bag of waste can ultimately fuel buses, ships, or trucks, with water as the only byproduct.

A MESSAGE FOR YOUNG PEOPLE INTERESTED IN THIS SECTOR

I believe we are witnessing a truly revolutionary shift in energy, comparable to the industrial and digital revolutions. This energy revolution offers a bright future, especially for hydrogen, which will become increasingly affordable and accessible. I encourage everyone, young and old, to embrace this new era with enthusiasm, passion, and interest.

LOGISTINC IN EXPORTING FRESH FRUIT AND VEGETABLE

INTERVIEW WITH MAHMUT YARMAN

Interview by Tarsus Ticaret ve Sanayi Odasi

CASE STUDY: CE IN LOGISTICS – MOVEMENT OF GOODS

Mahmut Yarman

Mahmut Yarman is the owner of Yarman International. The company is specialized in cultivating and exporting fresh fruits and vegetables.

Our unique approach prioritizes people and planet health. We cultivate chemical-free produce on our land and through a network of contracted producers, supported by our expert agronomists. Our team provides comprehensive training to ensure optimal harvesting practices.
Our dedicated logistics team efficiently transports produce to our facility for meticulous packaging. We export to diverse markets worldwide, with a primary focus on Western European countries.

LOGISTICS IN YOUR ORGANIZATION, AND WHAT HAPPENS TO FRUITS AND VEGETABLES AFTER THEY ARE HARVESTED?

Maintaining the quality and minimizing waste of fresh produce is a complex task influenced by numerous factors, one of the most important of which, is weather. To preserve freshness and nutritional value, we prioritize efficient handling and transportation.
We employ a two-pronged approach to transportation: refrigerated vehicles for long-distance transport to our facilities, and ventilated vehicles for shorter, high-volume routes. By minimizing field exposure time, we reduce the risk of heat damage, bacterial growth, and premature spoilage. Particularly sensitive fruits like strawberries, cherries, and figs require immediate cold chain implementation.
To address the specific needs of regional products like peaches and nectarines, we strategically located our facility in the heart of the production region. We also utilize advanced cooling technologies, such as HydroCooler systems, to rapidly cool produce before transportation, ensuring optimal freshness.

To maintain optimal quality, we minimize heat exposure throughout the supply chain. The average transit time from field to facility ranges from 1 to 2 hours, with harvesting typically taking 15-20 minutes. To reduce field exposure, we prioritize efficient harvesting and rapid transportation. By utilizing smaller vehicles, we minimize loading times and expedite the transfer of produce to controlled environments. This approach helps preserve freshness and extends the shelf life of our products.

DO YOU HAVE ANY ADVICE FOR OTHERS WHO MIGHT BE INTERESTED IN ADOPTING A MORE CIRCULAR APPROACH TO THE MOVEMENT OF GOODS?

Whether we call it circular trade, circular economy, or circular logistics, the core principle remains the same: minimizing waste. This is not just an environmental concern but also a significant economic issue. By embracing a circular economy philosophy, we can reduce waste, conserve resources, and drive sustainable growth. To implement circular practices, we must prioritize innovation and learn from successful examples. Numerous companies and experts are already pioneering this approach. By collaborating with these organizations and seeking guidance from knowledgeable individuals, we can accelerate our transition to a more sustainable future.
Innovation extends beyond technology. Optimizing operational processes and fostering a culture of innovation within your team can drive significant change. By sharing your goals and providing training, you can empower your employees to adopt more circular practices.
State-affiliated technology parks and R&D stations can provide valuable support, offering expertise and resources to drive innovation. Local organizations, such as chambers of commerce, can also offer guidance and connect you with relevant experts. Local institutions, such as the Mersin Chamber of Commerce and the Tarsus Chamber of Commerce, offer valuable support for businesses seeking to adopt circular practices. These organizations can connect you with experts and guide you on accessing state-funded programs designed to promote innovation and waste reduction.
Remember, every step towards waste reduction brings us closer to a circular economy. By embracing innovation and sustainable practices, we can create a more sustainable future for our planet.

CAN YOU GIVE US AN EXAMPLE OF ANY TECHNOLOGY OR INNOVATION YOU HAVE ADOPTED TO BE MORE CIRCULAR?

Circular logistics is integral to our commitment to a sustainable future. By minimizing waste and optimizing resource use, we contribute to a more circular economy. Fresh produce, particularly fruits and vegetables, is susceptible to significant waste. To address this, we have implemented several strategies.
Proximity to source: we prioritize sourcing from nearby producers to reduce transportation time and minimize the impact of environmental factors.
Innovative technologies: we explore and adopt emerging technologies to extend product shelf life and reduce waste.
We are inspired by the integrated models seen in America and Spain, where production facilities are located adjacent to agricultural land. This streamlined approach minimizes transportation distances and reduces the carbon footprint.

IS THERE A SUFFICIENT INFRASTRUCTURE FOR YOU TO ADOPT A CIRCULAR AND SUSTAINABLE APPROACH TO TRANSPORT?

While Turkey boasts a robust logistics network, there is still room for improvement. Refrigerated transportation is a significant advantage for maintaining product quality during domestic transport. However, as we expand our global reach, we recognize the need for even more sophisticated logistics solutions to ensure the quality of our products throughout their journey.

Yarman International prioritizes people and planet health

Minimizing transportation distances
Minimizing waste
Minimizing carbon footprint

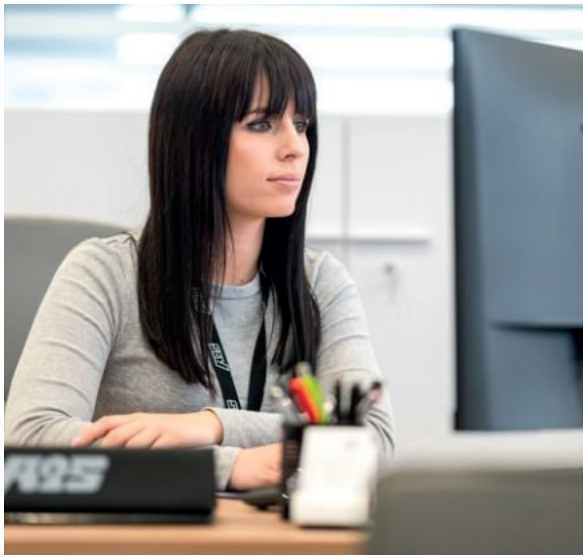
ELECTRICAL VEHICLES: THE POINT OF VIEW OF A CAR RETAIL

INTERVIEW WITH DRAGANA ATANACKOIVIĆ

Interview by Solski Center Celje

CASE STUDY: USE OF ELECTRICAL VEHICLES

Dragana Atanacković is sales manager in A2S, which is one of the biggest cars retailer in Slovenia.



In 2022, 10.5 million electric vehicles were registered in EU countries, of which 8.6 million were passenger cars. This is a 32 percent increase compared to 2021. The largest electric vehicles using countries in the EU, as a share of total passenger car registrations, are: Norway (90.9%), Sweden (76.7%) and The Netherlands (60.7%).

WHAT ARE THE BENEFITS OF DRIVING AN ELECTRIC CAR?

There are a number of benefits of driving an electric car. Firstly, there is emission-free driving, which has led to an increase in electric car sales in the first place. It is designed to reduce the release of greenhouse and other harmful gases into the atmosphere.
Another is energy efficiency - electric vehicles use energy better to move around, so they use less electricity per kilometre. They are quieter, which means they help to reduce noise pollution in big cities. Maintenance costs are also lower, with no need for frequent servicing as with diesel or petrol vehicles, as there are no filters, oil, etc.
Regenerative braking is also an important advantage, where the electric vehicle converts kinetic energy into electrical energy through automatic braking, ultimately increasing the range of the electric vehicle. This is not possible with internal combustion vehicles.
Another advantage that we, who are in the business of selling electric vehicles, see - is fast charging - not all vehicles have this option if you go on a journey and stop at a fast charging station. Here, the vehicle is charged within 40 minutes up to 80%.
You can see the progress and continuous improvements in the range of electric vehicles and battery capacity or battery utilisation. I would highlight these as advantages.

DO WE HAVE ANY INCENTIVES/SUBSIDIES IN SLOVENIA OR IN THE EU FOR THE PURCHASE OF ELECTRIC VEHICLES?

Of course, so I would highlight this as an advantage for deciding to buy an electric vehicle. In Slovenia, Ekosklad offers a subsidy for the purchase of these vehicles, especially for private individuals. The amount varies between 4500€ and 6500€, depending on the price of the vehicle. If the car costs less than 35.000€, the individual is entitled to 6500€, and 4500€ if the cost is more, with a price cap of 65.000€.
As regards legal persons, I would point out that they can charge tax on the purchase of the vehicle, so the State will reimburse them. In Europe, other countries are also the most exposed, most notably Norway, Denmark and Germany, which subsidise the purchase of electric vehicles in a similar way to Slovenia.

WHAT IS THE MAINTENANCE OF ELECTRIC VEHICLES COMPARED TO CONVENTIONAL VEHICLES?

I would point out the ease of maintenance - in terms of the electric motor, these are less complex than those of internal combustion vehicles. There are fewer wear parts, there is less wear, some vehicles do not have gearboxes at all. As for the battery, its capacity is constantly monitored, and the most important thing is the cooling of the battery. This needs to be maintained regularly and, by ensuring that the battery is properly cooled, the battery's life is extended.
As I mentioned earlier: there is no oil and no oil filters, so these services are not necessary, and I have already mentioned regenerative braking, where the brakes wear significantly less because the vehicle brakes automatically.

HOW DOES THE ELECTRIC VEHICLE CONTRIBUTE TO A CLEANER ENVIRONMENT?

It is difficult to talk about exact figures, but they contribute to 50% less carbon dioxide and nitrogen oxide emissions, which are extremely problematic. Electric vehicles also contribute to less emissions of particulate matter into the atmosphere. However, as I have already said, it is time that will tell how much electric vehicles contribute to a cleaner environment, because there are still too few electric vehicles on our roads to be able to assess this accurately.

The European Union has set a target to ban the sale of new vehicles with internal combustion engines by 2035, which is likely to accelerate the transition to electric vehicles.

MOVING SMART IN SPAIN

INTERVIEW WITH PABLO CAMPOS-ANSÓ

Interview by ACCI

CASE STUDY: TRANSPORT - MOVEMENT OF PEOPLE

Pablo Campos-Ansó

Pablo Campos-Ansó is the founder and CEO of guppy.

Born in 1992, Pablo is a naval engineer by profession, a surfer as a hobby and a volunteer by vocation. He does it with “Olas sin Barreras”, a non-profit association that seeks to bring surfing to young people at risk of exclusion. Or what they themselves emphasize, which allows them to turn waves into opportunities.

guppy is a car-sharing platform, where we rent vehicles without a driver. Where we share the resources, the vehicles are available on an app on your mobile, where you can register yourself in less than five minutes and get access to over 250 hundred percent electric vehicles, battery- electric vehicles, which are recharged with 100% renewable energy. So you can access them and pay them only for what you use. It’s a mobility service, a mobility-service app, very, very conscious and related to sustainability.

WHAT'S THE CURRENT NUMBER OF SUBSCRIBERS TO THE SERVICE?

We're providing our services, we're available in Asturias, Cantabria, Basque Country and Madrid, nowadays. So, the idea is to provide urban mobility services, sustainable mobility in the city, but also connecting the cities in-between them, so you can rent a car, go from Gijón to Madrid, from Madrid to Bilbao or from Bilbao Airport to Madrid whenever you want. There are over 40.000 customers registered today and there are over... above 5.000 active users nowadays in the urban mobility service weekly.

HOW DOES GUPPY CONTRIBUTE TO SUSTAINABILITY?

Well, first of all, I think it's a matter of traffic jams and the number of cars, private cars that there are in the cities. The problem comes from a long time ago, since many, many decades ago. There's a traffic problem in the city centres, so parking spaces are limited and there are more cars than people in the cities. So, we have to give back the priority to the people, instead of the cars. So, the idea is to share the resources, with a much smaller fleet available, with a much smaller fleet produced in the industry we can give mobility services to over 50 times of the people if we share the cars. Less traffic jams, less parking spaces, less problems and sharing resources. But not only that, but also that the cars are 100% electric, so there's no fumes, there's no particles associated and there's no contamination in the city. Apart from that, there's also the benefit that we recharge the batteries with 100% renewable energy, both from our own photo-voltaic auto-generation centre in our logistic base, but also buying from the net only certified renewable energy. So, we close the circle and we are selling kilometres which are recharged by the sun!

IS THE ELECTRIC CAR THE TRANSPORT OF THE FUTURE OR IS IT ACTUALLY OF THE PRESENT?

I will say it's the present! We have been in business for over five years and there are some companies above ten years selling electric cars. The evolution of the electric car in the last ten years has been very interesting, very fast, so nowadays it is for sure that the electric car is here to solve the problems that we have in terms of pollution in the cities, but also in the mid and long distance. The cars nowadays have above 300-400 kilometres reach' very, very easily and the charge speed is becoming way faster, fast-charging above 1.200 km per hour, so in 15 minutes you're having 400 km again, so it is very easy, very convenient to drive throughout Spain, Portugal, France...with a 100% electric car.

And the access to these cars through a mobile app is already the present. We are providing over 700 rentals per day and the technology is available, is fair enough, is stable and the cars... we're still using the same cars as five years ago, so the deprecation, the degradation of the batteries is not as some people are saying. We are not suffering any range decrease, so, we think it's the present!

40.000 customers registered
5.000 active users in the urban mobility service weekly

WHAT IS THE ROLE OF THIS CAR-SHARING PLATFORM SYSTEM IN THE CIRCULAR ECONOMY?

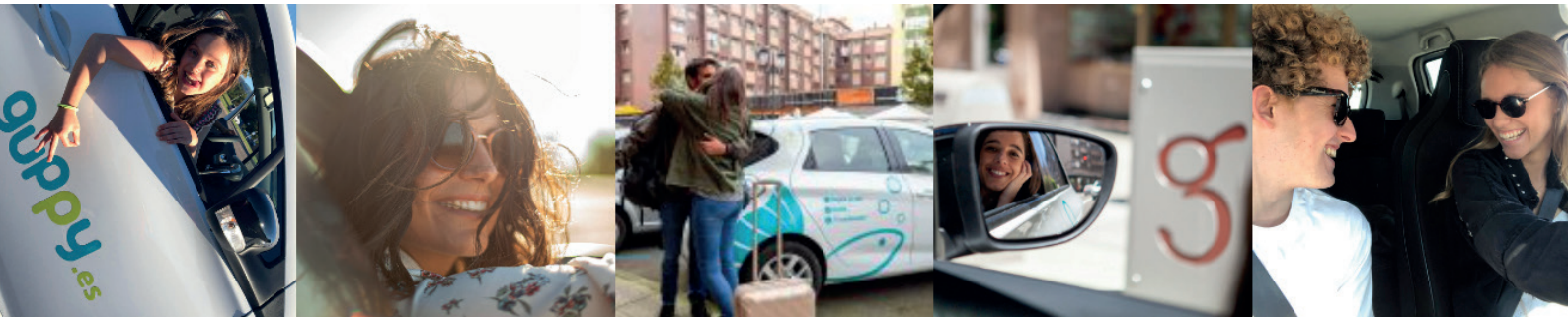
Well, the first idea is to avoid producing more cars and spending more resources than needed. A private car spends over 23 hours parked - in our parking space, in the street - generating problems for the other citizens. So, less production of cars, without eliminating the possibility of moving from one place to another with the same efficiency but sharing 50 people in the same day, the same car. Apart from that, electric cars will have another interesting feature: because, once they have been providing services for, say, eight to ten years to the drivers, then, maybe the battery itself will decrease, maybe, below 70% of its range, above ten years, which is good enough for their use. Then that battery is not gone forever! This battery will last in a stationary place for a second life. So, these batteries will be assisting photo-voltaic or wind-powered or any other renewable energy system, so we'll be profiting from the materials and the battery for another 10 or 15 years!

FOSSIL-FUEL ADVOCATES CRITICISE BATTERIES AND ALSO SOME LACK OF CHARGING POINTS. WHAT WOULD YOU SAY TO THEM?

First of all, the charging space snd the charging infrastructure. Both the electric vehicle market and the charging stations' market are growing at the same time. So, there will always be, for sure, some de-balance and some moments when it will be a little difficult to balance. Sometimes there will be a little bit more cars than charging stations and the opposite.

But it is something that is growing very, very fast and both together. What is true is that we have over 40.000 customers who are doing rentals of above 1.000 kilometres throughout Spain, Portugal and France, so it is true that you can do a thousand kilometres with a couple of fifteen-minutes' stop for fast-charging and we are not facing any problems at the charging stations. We have incorporated in our app the charging stations to make it easier.

It is true that there is a lot of work to be done to make life easier for the customers. So, we are not only providing the car but also the parking spaces, the charging stations and whatever else we need to have sustainable, efficient and economical mobility. We are introducing charging stations for this reason and we are not facing any problems with the charging stations.



guppy people
Users: people who enjoy a convenient and fun service, and are also helping to make our cities more modern, clean and accessible places.

guppy team: a team of wonderful professionals who never stop working to improve and innovate services and to ensure that vehicles are always ready when and where you need them.

Partners: companies and entities that help us to improve services, carry out promotions and provide initiatives that benefit our customers.

Members: investors that take guppy to new cities or regions of the country.

THE HOLISTIC APPROACH TO SUSTAINABILITY

INTERVIEW WITH JOHN MCRORY

Interview by CGU

CASE STUDY: RELEVANCE OF CE TO TRANSPORT SECTOR

John Mcrory

The circular economy approach prioritizes resource efficiency, waste reduction and an enhanced collaboration among different stakeholders, which creates a more holistic and responsible way of managing transport. In Europe, the sector contributes to a quarter of the total greenhouse gas emissions produced and a major cause of air and noise pollution. It is also the only major economic sector in Europe where greenhouse gas emissions have increased since the 1990s.

CONNECTING INDUSTRIES

So how might circular economy think be applied to transport and logistics? We asked John Mcrory, the environmental and sustainability director at Malcolm Group, a Scottish company which offers many transport services including logistics, rail freight, construction and vehicle maintenance services all over the UK. They also provide waste transport and treatment for construction waste.

“For Malcolms we’ve got a great opportunity as a logistic business, as a construction business, as a waste business to interact with many different sectors.

So when we look at circular economy we sometimes get a bit kind of fogged about manufacturing Industries and construction industries that are the only industries that can have an impact on it.
Whereas for the transport side of things, we are the connectors to sectors and it is so vital that we are part of that conversation.
In order for us to integrate that within the wider business it's actually just breaking it down, understanding exactly what it relates to." Taking a holistic approach to sustainability which includes the circular economy and the opportunities that they have within that, is something Malcolms is focused on.

CREATING BUSINESS OPPORTUNITIES

We asked John to tell us a bit about what he thinks are some of the key benefits of applying circular economy to logistics. "The kind of key benefit other than environmental benefits is the potential for it to open up business streams. Circular economy allows a business to reduce its environmental impact by reducing carbon emissions, minimizing waste and optimizing energy efficiency. And it also has the potential to open up the doors for new business opportunities -being that connector between different organizations. The key goal in terms of efficiency, once we move products, is to be returning with products. We can't have empty running it's not sustainable for a business to do that. So that's where the opportunities will definitely come into play".

INNOVATION WITH LST

In collaboration between industry partners, Malcolm group has pioneered the development of the first Longer Semi-Trailer (LST) and through participation in the UK government trials, they have spearheaded LST use as part of their service offerings. LSTs are longer than a standard trailers and can carry up to 15% more volume than their standard length counterparts. This means that the additional cube reduces delivery frequency, which translates into less journeys, a reduction of fuel costs and lower CO_2 emissions. John notes "We have vehicle weight restrictions but sometimes some goods, "cube" out before they "weigh" out. So they may be bulkier, but not heavy. Having the longer semi-trailers allows us to move more, with less journeys. A simple concept but it took trials that we were central to, to understand how we might operate these trailers safely and efficiently".

REVERSE LOGISTICS

John adds “Another example of that would be the Innovative approach we take to our ancillary equipment. So when we’ve got our tractor units and we have our trailers, it’s what’s best for that customer in order to connect. So we’ve done a lot of research and a lot of development with manufacturers, in terms of how we can maximize our fleet and our fleet potential. Our walk-in floors trailers are a great example of that. For example, we know from the market point of view that we take goods from Scotland down across the border to England, it can be slightly different on the route back.
It’s like the traditional Logistics flows but in reverse since the items return from the point of consumption or sale to the warehouse where they can be exchanged, reused, repaired, refurbished, recycled and if their condition allows, resold. So we have to be flexible in our approach. From Scotland to England we can safely take biomass pellets for example on our walking floors but then we can then adapt that unit to then take pallet items back across the border. So again we’re not using that wasted journey”.

INDUSTRY COLLABORATION

Finally John highlights the importance of collaboration and partnership working.
“A central component of Malcolm’s transformation is the ability to encourage cross-sectoral collaboration which is one of the fundamental pillars of Malcolm Group’s sustainability strategy. And the success of this approach depends on breaking down silos and fostering partnerships that enable innovative solutions to be developed and scaled. By working together businesses can not only enhance their operational efficiency but also contribute to a more sustainable and resilient industry that benefits both the environment and the economy.
Malcolm Group not only reduces its environmental impact through circular economy measures, but also sets an example which demonstrates how solutions also make business sense and go hand in hand with a sustainable economic growth.

THE QUEEN'S AWARDS FOR ENTERPRISE: SUSTAINABLE DEVELOPMENT 2017
in partnership with City Legacy

From the 1925 first horse & cart to the 2017 award for sustainable development

1925 First horse & cart is put to work

1930 Walter Malcolm buys his first mechanised load carrier

1952 FHS 455 Malcolm's Austin pickups

1970 A brand new Scania 80 Super

We needed a service to provide a solution that could be easily adapted to the dispersed population of Lazdijai while promoting sustainability. We created a service that reduces emissions and operational costs while increasing accessibility for residents.
Ieva Stalevičiūtė

To make our service more efficient we implemented an AI system that analyzes bus traffic patterns and suggests real-time route adjustments to stagger bus arrivals at busy stops.
Andrius Samuilovas

We are witnessing a revolutionary shift in energy. I encourage everyone, young and old, to embrace this new era with enthusiasm, passion, and interest.
Alberto Caetani

Circular logistics is integral to our commitment to a sustainable future. By minimizing waste and optimizing resource use, we contribute to a more circular economy.
Mahmut Yarman

There are several benefits of driving an electric car. Among others: emission-free driving, energy efficiency, reduction of noise pollution, lower maintenance costs, regenerative braking...
Dragana Atanackoivić

We don't sell cars but kilometres which are recharged by the sun.
Pablo Campos-Ansó

The key benefit of applying circular economy to logistics - other than environmental benefits - is the potential for it to open up business streams.
John Mcrory

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VET and SMEs on the road to CE

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