
Making Cities Smarter

9 Smart Cities Startups
Share How They're
Building the City of the
Future

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Index

Introduction

2

Zeleros

3

Fleetonomy

5

Envio Systems

7

Woodoo

9

Imagine Intelligent Materials

11

Havr

13

GBatteries

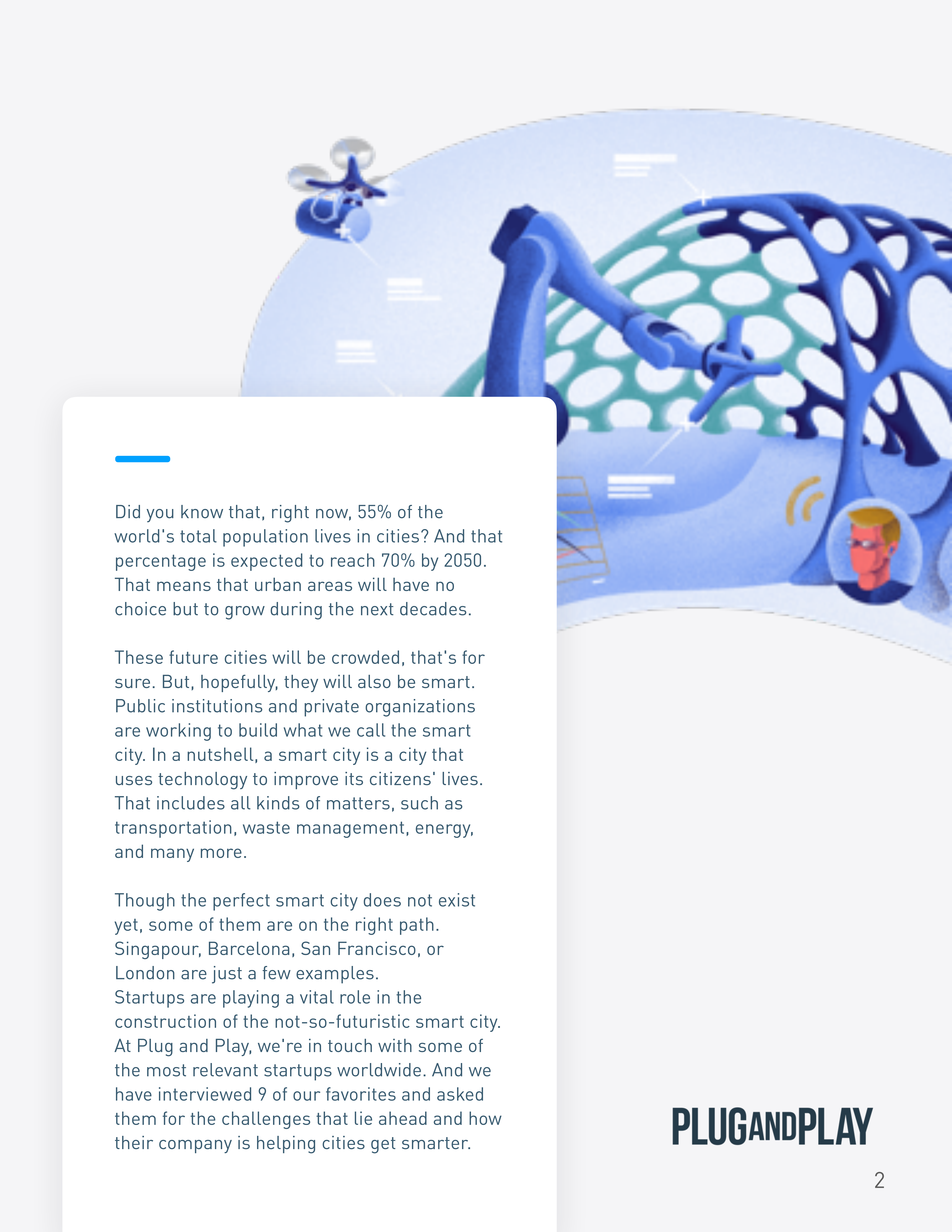
15

Spaceti

17

Carfit

19



Did you know that, right now, 55% of the world's total population lives in cities? And that percentage is expected to reach 70% by 2050. That means that urban areas will have no choice but to grow during the next decades.

These future cities will be crowded, that's for sure. But, hopefully, they will also be smart. Public institutions and private organizations are working to build what we call the smart city. In a nutshell, a smart city is a city that uses technology to improve its citizens' lives. That includes all kinds of matters, such as transportation, waste management, energy, and many more.

Though the perfect smart city does not exist yet, some of them are on the right path. Singapour, Barcelona, San Francisco, or London are just a few examples. Startups are playing a vital role in the construction of the not-so-futuristic smart city. At Plug and Play, we're in touch with some of the most relevant startups worldwide. And we have interviewed 9 of our favorites and asked them for the challenges that lie ahead and how their company is helping cities get smarter.

Zeleros



Juan Vicén

Co-Founder & CMO

Zeleros is a European company based in Spain and leading the Hyperloop development. Not familiar with Hyperloop? This system enables the transportation of passengers and freight at over 600 miles/hour, with zero emissions. And it does so by using magnetic levitation and low-pressure tubes to reduce friction.

So far, Zeleros has raised substantial private and public support, and their next objective is the construction of a test-track to demonstrate this system work.

zeleros.com



How do you picture the city of the future? What are the main challenges?

We see the city of the future as a more connected network both in the physical and in the digital sense.

On the digital side, we will see the need to create platforms to manage the huge diversity of mobility alternatives, and to combine them in the most efficient way.

On the physical side, new mobility alternatives such as the Hyperloop will arise. Regulation will be one of the challenges to face, and we are already seeing it with, for example, shared scooters: there needs to be regulation that supervises where to park them, how to use them, and how to ensure safety. The same is happening with Hyperloop. We have considered regulation since day one, so we will be ready once the system has been demonstrated.

What role does your company play in building the smart city?

Zeleros will be a key enabler for the interconnection of smart cities. Our system will enable the connection at airline speeds with zero direct emissions of any city that is 300 to 900 miles away. This will be convenient both for the citizens and for our environment.

The convenience of having the station in the city center and not in the outskirts (as in airports), will enable faster commuting and will be a revolution in the way we work and live, since distances will be extremely shortened.

For example, the possibility to connect main European cities such as Paris, Frankfurt, Barcelona or Madrid in a matter of minutes could have a major impact on our economies.

On the freight case, the logistic chain will maximize its throughput at the same time as improving efficiency and reducing direct emissions from trucking.

Zeleros will bring these possibilities to reality by cooperating with key companies to create more connected smart cities.

Fleetwork

Fleetwork



Israel Duanis

Co-Founder & CEO

Fleetwork's AI-based platforms enable auto manufacturers, mobility service providers and any type of fleet owner to maximize fleet potential. In order to do that, they enhance efficiency in existing fleet-based services and increase fleet utilization by operating multiple smart mobility services (such as car subscription, ride-sharing, on-demand rent, and premium chauffeur services within the same existing fleet).

[Fleetwork.io](https://fleetwork.io)



How do you picture the city of the future? What are the main challenges?

Managing various mobility services in the same city simultaneously is not an easy task. As more and more new-mobility services emerge, public transportation operators must have the right tools to launch their own smart-transportation services, as well as to efficiently synchronize drivers, riders, vehicles, and different services that operate in their region on a day-to-day basis.

What role does your company play in building the smart city?

Fleetsonomy's Mobility Operations Center is made for public transport planning and dynamic scheduling. It optimizes management capabilities and improves efficiency in complex multi-service mobility operations.

This holistic mobility management platform helps public transportation operators and authorities reduce operational costs, save time by automating manual processes like transit scheduling, meet compliance requirements or set policies based on data, and improve their overall quality of service.

Envio Systems



Reza Alagheband

CEO

Commercial buildings waste up to 50% of the energy used, and account for 40% of the world's energy consumption. Envio Systems is a pioneer in next-generation building automation.

They have developed an end-to-end building management system capable of turning any existing commercial building into a smart building, without replacing existing infrastructure. All of it, through IoT technology and cloud-based management.

enviosystems.com



How do you picture the city of the future? What are the main challenges?

The city of the future is more efficient, sustainable, and effective. In order to achieve this, we need interconnected systems and engaged citizens.

The main challenges always seem to be related to either technology, infrastructure, and/or citizens. These include technological capture and capacity, interoperability, existing infrastructures, digital security, and citizen skepticism. The Internet of Things can break through technological challenges by revolutionizing data collection and communication streams. Visionary leadership, greater collaborations, and unique design concepts can overcome infrastructure challenges. The power of education and secure measures can reduce citizen skepticism and increase citizen engagement.

It truly takes a community to build a smart city.

What role does your company play in building the smart city?

Our company recognizes the energy and resource crisis, and we aim to make an impact in the world by addressing these issues. In doing so, I believe Envio Systems is naturally helping the creation of smart cities. Our solution was developed to face existing energy and connectivity problems. Therefore, these challenges were heavily taken into consideration during the design stage of our product/service.

We created a solution that works with and upgrades existing infrastructure, rather than destroying existing infrastructure. It enables communication between various systems and devices. We understand the importance of digital security and make this a top priority in our development.

As stated previously, it truly takes a community to build a smart city. This requires citizen acceptance and engagement. Adoption of IoT solutions is a huge hurdle to overcome, and we try to address this with our Hardware as a Service pricing model. This reduces common associated risks to building automation solutions, and makes it affordable to implement our smart building automation solution. In order to make an impact and aid the building of smart cities, Envio Systems believes that making solutions accessible is key.

Woodoo

WOODOO
augmented wood



Olivier Grange

SVP Marketing & Communication

“We have developed a technical process to remove the weak lignin parts of a wood board’s structure, replacing the lignin with a recycled custom polymer,” said Olivier Grange, SVP Marketing & Communication at Woodoo. “The result is a sustainable material with tremendous qualities: it is 3 to 4x sturdier than conventional wood, resistant to rotting, fire retardant... It has applications not only in construction but also in the smart surface industries (for automotive, IoT, domotics...) because our wood is also translucent and touch-sensitive.”

www.woodoo.com



How do you picture the city of the future? What are the main challenges?

The main challenge for the city of tomorrow is that it must be carbon-free. This is why we have to leave out the “all-concrete” construction models to enter a post-carbon world. Because of rampaging urbanization that will bring up to 6 billion people in cities by 2030, we will have to build 7 times the surface of Paris each year!

How can this be possible when we face massive shortages of sand (for concrete) and steel? We would be releasing intolerable amounts of carbon. The solution lies in nature: wood is the only material that grows by itself and stocks vast amounts of carbon. Thanks to our technology, it is becoming the ideal material to create the high-tech buildings of tomorrow’s smart cities.

What role does your company play in building the smart city?

We firmly believe we are the best alternative to concrete and building materials. With production techniques like Cross Laminated Timber (CLT), our materials will reach the resistance of concrete.

We are already studying full-wood 35-storeys structures, and it’s just the beginning. It will allow a drastic cut in the 2.5 billion tons of CO2 that the building industry is spilling in the air each year. And moreover, as we mainly focus on low-grade wood (aspen, hornbeam, poplar...), we will also put into value resources that are unused at 50% in France and all over Europe, and revitalize an industry in declining for more than 50 years.

As our founder Timothée Boitouzet states it, the XIXth century has been the age of steel and the XXth the age of concrete. The XXIst century will be the age of wood.

Imagine Intelligent Materials



Jaakko Kaidesoja

President

Imagine Intelligent Materials was founded in Sydney, Australia, 2014. Its founders wanted to deliver “infinitely scalable sensing systems, leveraging the electrical conductivity of graphene, to allow every part of the surface of the built environment to sense and communicate – in the same way that the human skin does.”

Imagine’s sensing solutions extract valuable data from large surface areas in buildings, infrastructure and logistics and can be manufactured at scale. “Dumb” surfaces become “smart” and report about events.

imgne.com

How do you picture the city of the future? What are the main challenges?

More and more people are living in cities and want safe, secure and smart living environments. At the same time, we want to reduce CO2 while not reducing our living standards. We want the services and technologies we consume to deliver efficiency, productivity, and much more.

Anyone living in a large city is familiar with traffic congestion, pollution and crowded transportation systems. We have recently seen worrying stories about the health of our infrastructures, such as the safety of bridges and tunnels or the construction of high-rise buildings. Climate change is accelerating moisture problems in buildings and the impact of extreme weather conditions and storms.

In order to sustain a safe living environment, we need to be able to measure things we have previously assumed would be safe, but have not because of cost. We need better efficiency in energy consumption, reducing our CO2 emissions and we need to find ways to proactively manage the risks we are facing.

Our vision is that the smart city of the immediate future will be enabled by intelligent sensing solutions that provide the necessary information not only to make better decisions but to predict what we need to focus on. Real time data collected from the entire surface of a material will help people plan and act in transportation, buildings, hospitals, aged care, roads, agriculture, mining and much more.

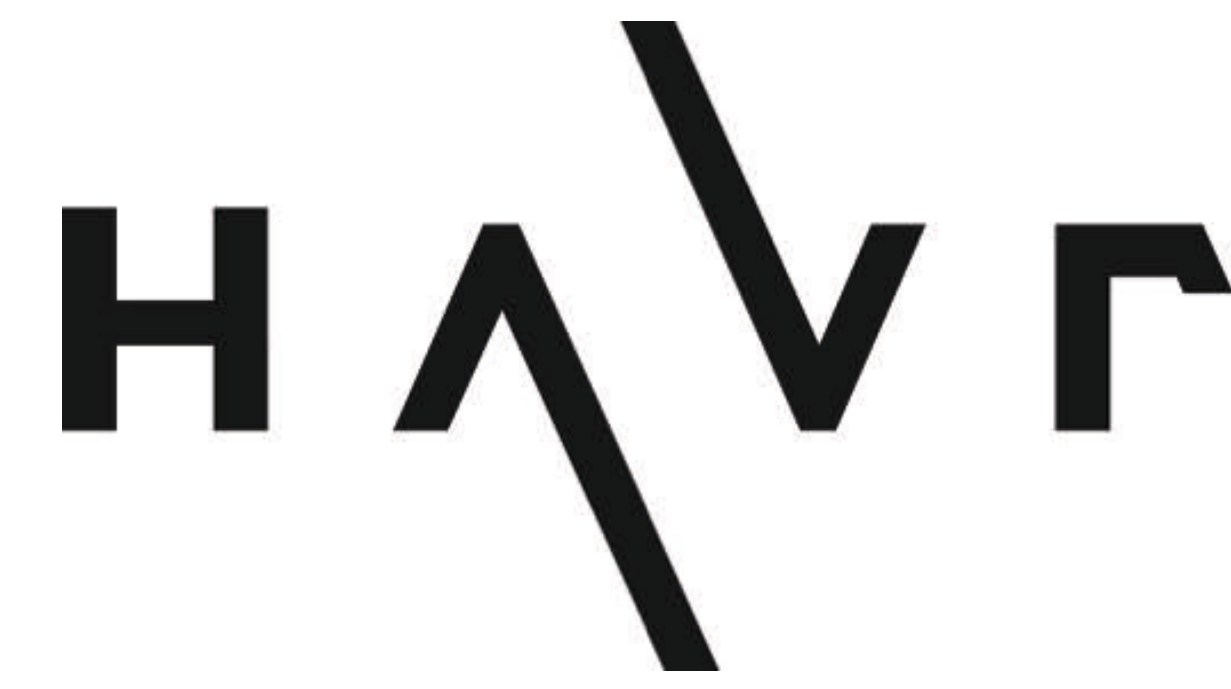
What role does your company play in building the smart city?

Imagine is creating solutions for Smart Buildings that will provide inexpensive, position-accurate, leak and moisture detection for roofs, walls and floors. Structural integrity monitoring, people and foot traffic monitoring, mesh network communications that will enable asset owners to adapt business models to the changing needs of the community and their customers and will generate more profit for the companies involved. Data analytics of structural health and building usage will benefit real estate and facility management, retailers, aged people and their families and helpers, hotels and venue owners, office facility managers, etc. This will be possible thanks to Imagine's graphene enabled sensing surfaces and technology platform.

Imagine's Smart Surfaces Solution primary target application is smart flooring. Deployed under a floor it will deliver a cost efficient, simple and elegant solution for measuring people movements in retail, aged care, hospitals, hotels, offices or other buildings. The flooring material as a whole will deliver a simple and scalable sensing solution. No wires underneath floor, and simple to install, the solution provides information about people count, foot traffic, dwell time, routing and congestion areas with ability to detect falls, alerts and objects. It can also help to achieve energy savings. Our vision for the smart car is for mass personalized customization to be made possible through imgne® graphene versatile sensing surfaces. Sensing surfaces in vehicles provide information about passengers, seat occupancy, drivers posture and alertness while driving and several other data points that will be very useful in the future with self-driving and possibly shared vehicles. We can also measure cargo loading and movement in containers which drives efficiency of logistics.

We see the future smart city being a perfect playground for our solutions that delights and engages the user and generates profit for our partners.

Havr



Simon Laurent

Co-Founder & CEO

Havr is a French tech company operating in the smart access sector. They are pioneers in the use of Li-Fi technology for smart access solutions. Their flagship product is the Brightlock. “The Brightlock is a flexible, secure and powerful solution for smart access applications in a B2B environment,” said Simon Laurent, Co-Founder and CEO of Havr.

www.havr.io



How do you picture the city of the future? What are the main challenges?

The main challenge is to adapt and transform the existing into something sustainable and flexible. Our ambitious vision is of a future where technology gives choices to every human being and every organization. The fundamental, critical choices of how they utilize and share the spaces in which they live, work and play.

What role does your company play in building the smart city?

At Havr, we see smart access solutions as the cornerstone of a new era of frictionless living. We dream of a tomorrow where access to shared spaces and facilities, movement of goods and the new smart service economy will all be more flexible, more connected and more secure thanks to the technology, partnerships and new business models we are working to build today. Our role is to free companies and individuals from the constraints of keys, or access control.

GBatteries



GBatteries



Kostya Khomutov

Co-Founder & CEO

GBatteries is an advanced battery technology company on a mission to accelerate the adoption of electric vehicles by enabling them to charge as fast as it takes to fill up a tank of gas. Their technology “ultra-fast charges off-the-shelf lithium-ion (Li-ion) batteries without compromising battery lifespan”. Their goal is to make the transition from ICEs to EVs seamless by removing the biggest obstacle - how long it takes to charge an EV.

gbatteries.com



How do you picture the city of the future? What are the main challenges?

We picture green, quiet, clean, smog and traffic free, connected cities where there are endless options when it comes to mobility and transportation is powered by zero emission vehicles. Public transport will come in all shapes and sizes from driverless electric pods to double decker e-buses. Autonomous electric fleets will make deliveries, car and ride sharing will be the norm, and e-scooters and e-pods will be readily available in every major metropolis - reducing the number of accidents, traffic congestions, making the streets quiet and more accessible, and the air fresher.

Governments all over the world, from the municipal to the federal level, are trying to control emissions through various initiative and incentives. These actions are great; however, there are many challenges that need to be overcome to make the transition to electrification.

From a charging standpoint, problems include:

- Lack of charging infrastructure
- Inadequate grid capacity for vehicles such as electric buses
- Low charging speed
- Range anxiety

These problems are especially troublesome for certain vehicles. Car and ride sharing fleets cannot afford to stop halfway through the shift, for a 1-3 hours to recharge their vehicles. Teo Taxi in Montreal, Canada, with a fleet of 450 electric taxis went bankrupt due to underestimating the time their drivers needed to spend at the charging stations each day.

What role does your company play in building the smart city?

GBatteries can make car and ride sharing more profitable by drastically reducing charge time. By implementing our technology, gaining approval to enter new markets may be easier since the monopolization of public charges will be significantly reduced.

Our technology can also make electric fleets economically feasible sooner as opposed to “over the life of the vehicle.” We can allow fleet operators to abandon fossil fuels, which will reduce operating costs and virtually eliminate all greenhouse gas emissions.

Spaceti

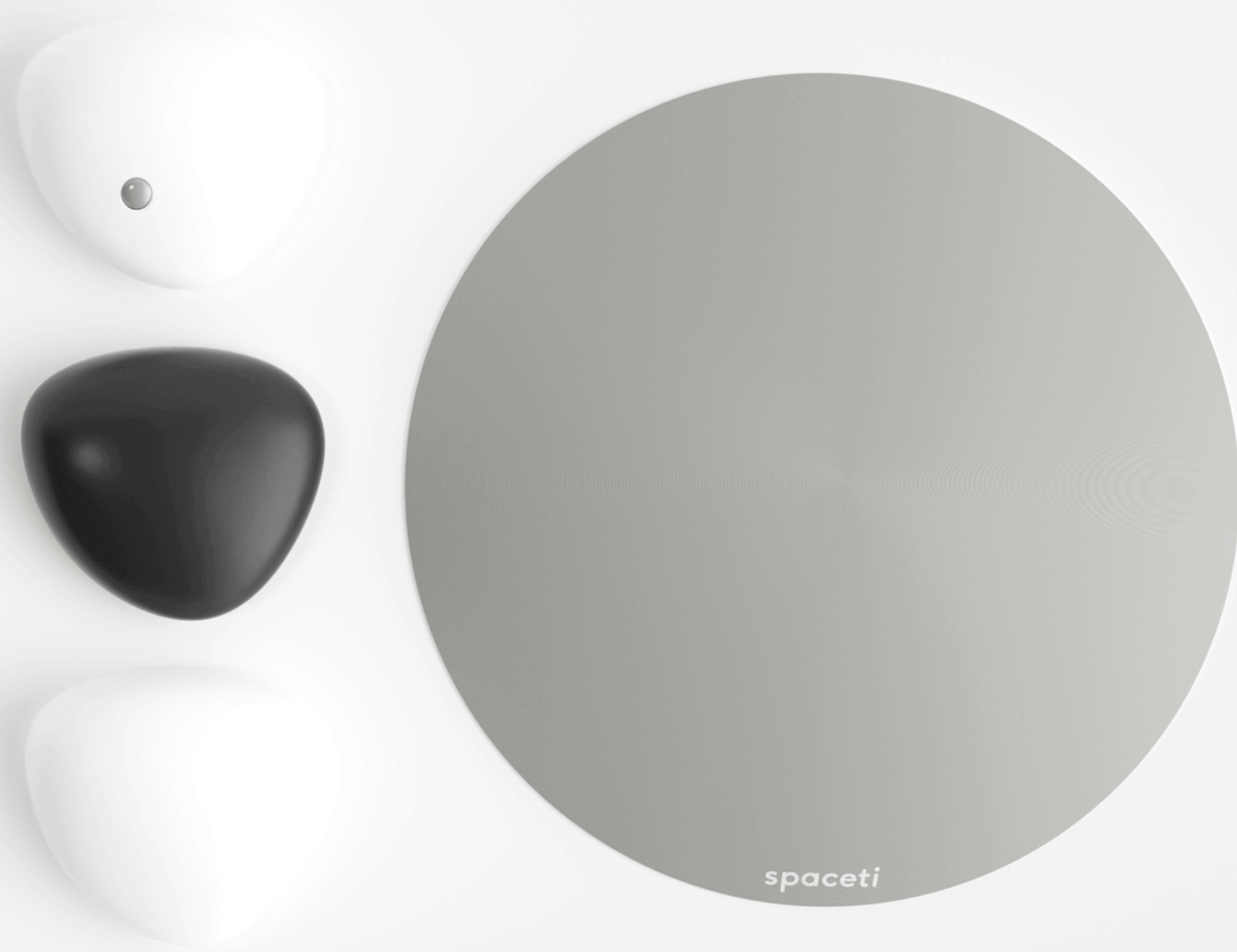
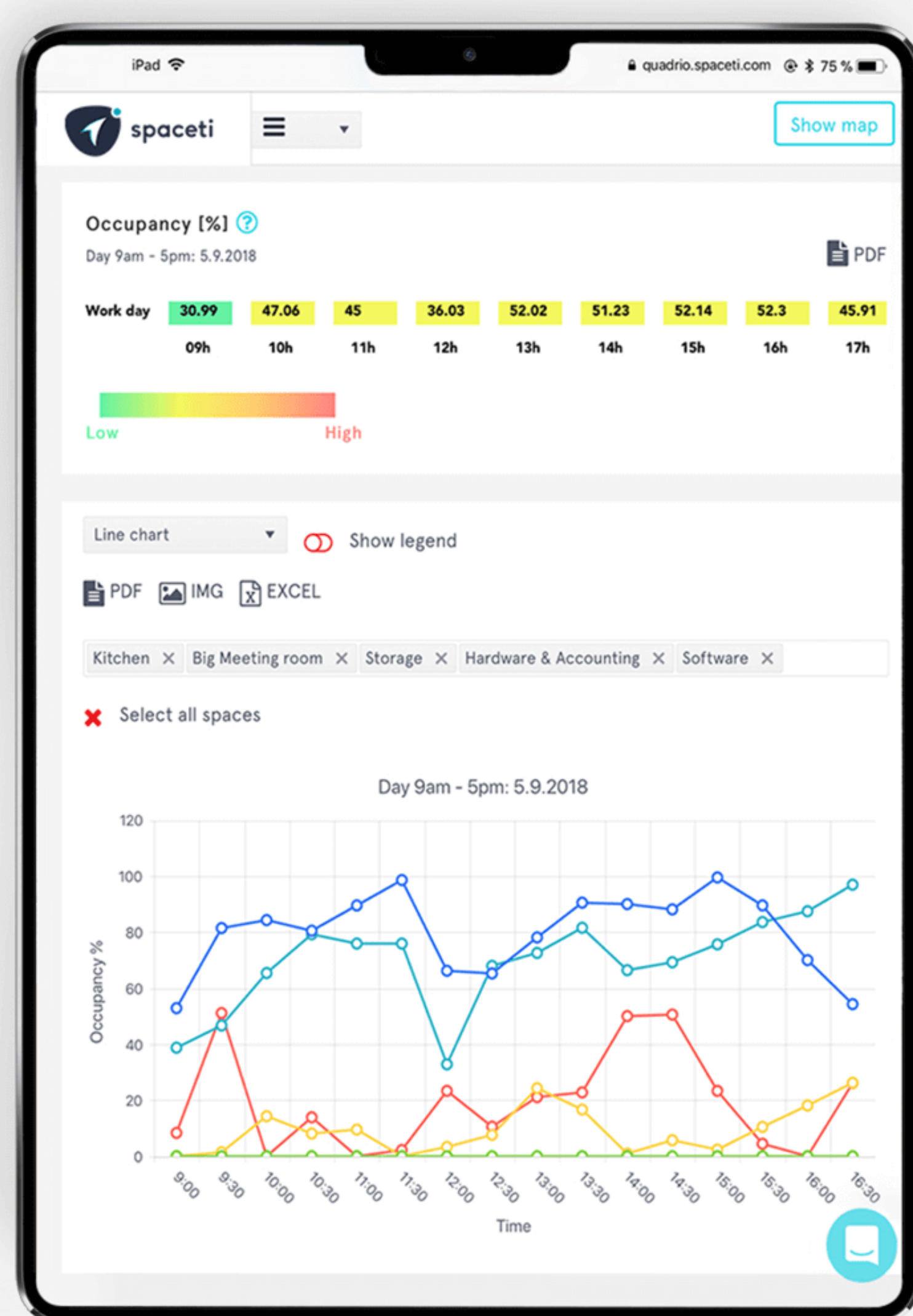
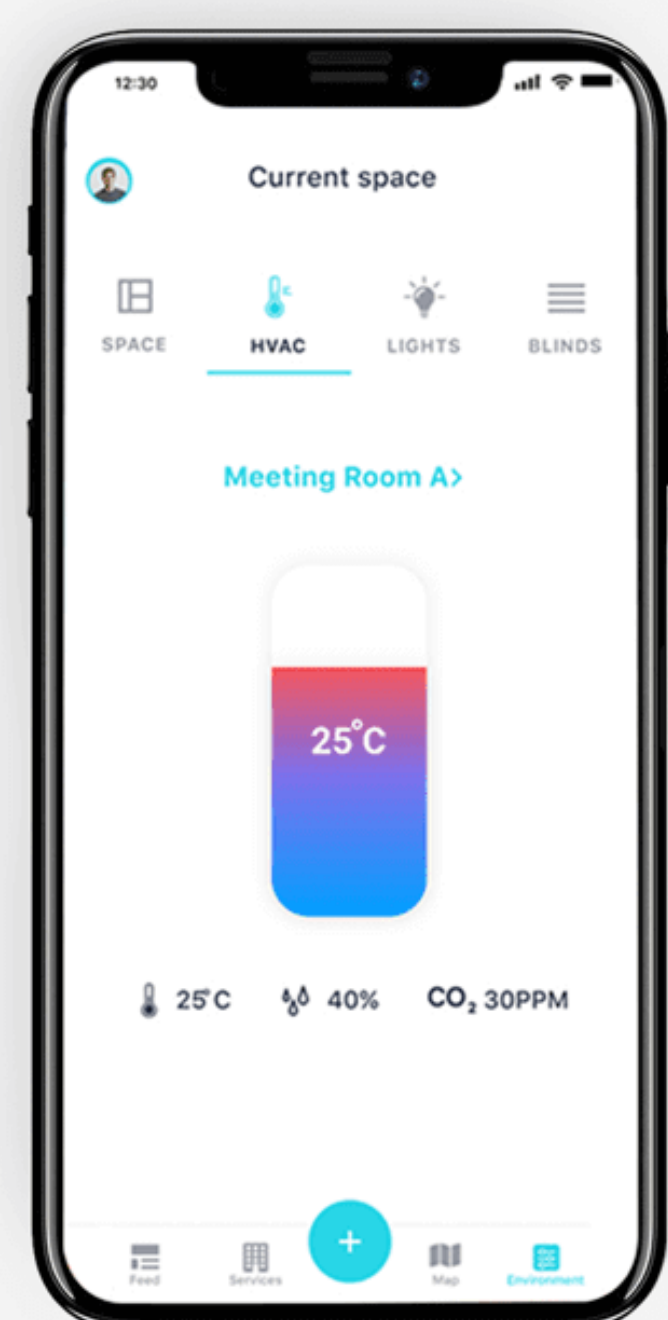


Pierre Garrigues

Data Partnerships Director

CARFIT has developed a technology that reads car vibrations to understand usage and anticipate maintenance needs on wearing parts such as tires, wheels, brakes and shocks. Those parts lack sensors and monitoring, which leads to no or very little information available to the entire industry and drivers.

car.fit



How do you picture the city of the future? What are the main challenges?

In my view, the city of the future will definitely be energy-efficient. It might even produce energy instead of consuming it. It would be great if future cities were self-sustainable, meaning that they should produce the energy they consume. The main challenge for this is convincing companies and governments to invest more in this area.

Also, property technology is increasingly viewed as an opportunity and an enabler, bridging the gap between the physical space and the vision of self-sustainable cities of the future in terms of solving urban development problems, improving sustainability, energy efficiency, decision-making, and communication between people and organisations.

What role does your company play in building the smart city?

Property technology is booming in terms of installed smart building IoT devices and total investment in urban development. Our company plays a bridging role in the smart city through making people more productive at work and providing them with a more comfortable life within buildings.

I think this is highly important, as people spend a huge amount of time at work, and the environment in which they are supposed to deliver results greatly influences them in terms of their satisfaction and wellbeing. Generally, I'm glad to see more a human-centric approach to overall smart city development as it supports inclusiveness, sustainability, collaboration, and efficiency.

Carfit



Daniyar Tanatov

Partner Account Manager

Spaceti is an award-winning property technology startup, founded in 2016 in the Czech Republic. They build and provide integrated solutions consisting of its own proprietary sensors, a data analytics platform, and a mobile app that enhance the satisfaction, productivity, and wellbeing of people in buildings while improving the bottom line for organisations.

[car.fit](#)



How do you picture the city of the future? What are the main challenges?

Mobility is changing with the arrival of new mobility providers, and the evolution of what traditional suppliers used to offer.

Platforms such as Free2Move from PSA Group are one of the symbols of this transformation, gathering car sharing, car renting, taxi hailing and leasing solutions in one place. With this, you can offer end-users a large range of mobility solutions in one place and release them of the obligations of owning a car. As a consequence of this transformation, cars are going to face a more intense usage than ever with an impact of their wearing.

What role does your company play in building the smart city?

CARFIT technology offers both individuals and fleet managers a solution to optimise car maintenance based on usage. This fits with new usage of cars in circulation and helps car owners to better manage their cost of ownership while making the roads a safer place.

Do Not Leave Without Reading These...



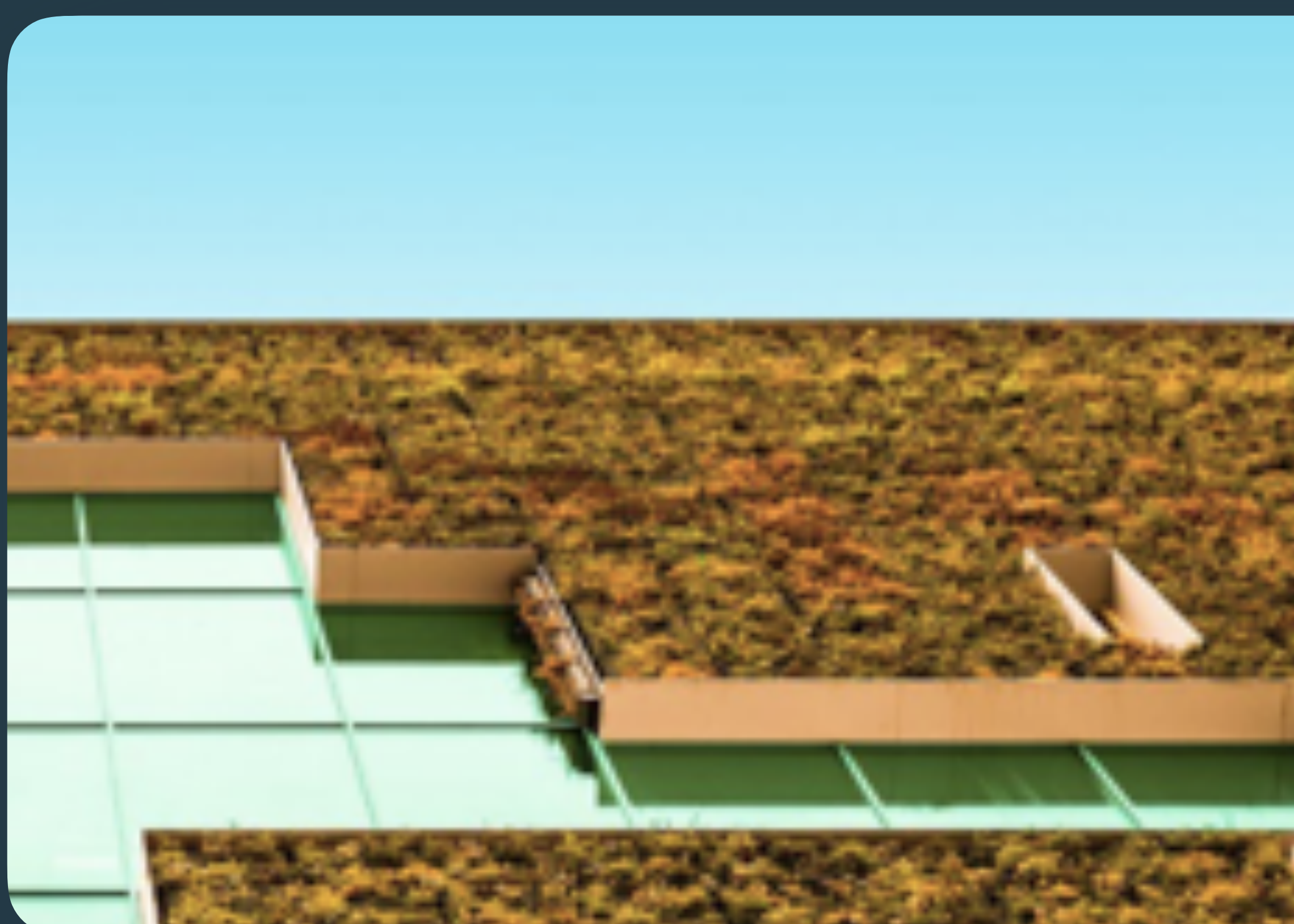
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