The Flow of Urban Life – a podcast by KONE – Transcription
Connected Cities: The Robot Helper

Sam Hughes 0:02
By 2045, the world's urban population is set to increase to around 6 billion people. Each new inhabitant will have their own reasons for being in the city. But over time, pressure can build on the services that keep our cities going. From city cleaning to supermarket deliveries, to medical professionals and other frontline workers, services play a key role in making our cities more pleasant, more productive, and healthier places to be. With fast-paced urbanization, some people are turning to technology to help meet that growing demand.

Sam Hughes 0:45
Welcome to The Flow of Urban Life, a new podcast by KONE that explores how urbanization and digitalization are transforming the way we live, work and commute in cities. I'm kicking off this new podcast with a three-part miniseries that examines how connectivity can improve urban living. I'm your host, Sam Hughes, and today we'll be talking about how robots can have a positive impact on our lives.

Sam Hughes 1:10
Now, when we think of robots, we often think of machines that look a bit like humans. In fact, there are robots today that do some of the very human things we do, such as making gestures, or mimicking emotional reactions. But robots are capable of so much more than just a raised eyebrow or a clunky high five. Today, robots take all shapes and sizes and do a bunch of things that can actually improve our lives. They can streamline the way we work, improve the cleanliness of our surroundings, and transport goods between places. Robotise, a Germany-based startup is on a mission to introduce service robots into people's everyday lives. Their robots help with day-to-day tasks in hotels, offices and hospitals. If you've heard of the term 'the last mile', you know it's used to describe the last leg of the journey before goods reached their destination. Robotise have taken this concept one step further. Now the last mile becomes the last meter.

Sam Hughes 2:06
Imagine a little stack of drawers on wheels moving around a building autonomously. That's Jeeves, a delivery robot that transports goods within offices, hotels, and hospitals. In hospitals, it stores items in its drawers and makes the journey from a storeroom or pharmacy to different service points throughout the building. It makes sure hospital staff always have the supplies they need within easy reach. By taking samples from the ward to the lab, Jeeves assists busy doctors and nurses by reducing the time spent walking miles of long corridors. In essence, Jeeves gives medical professionals some time back so staff can concentrate on the really important jobs, such as caring for their patients and helping them improve their level of care. I spoke to Oliver Stahl about how Jeeves is helping people in hospitals, hotels and offices.

Sam Hughes 2:57
Welcome to the show, Oliver. Thanks for joining me.

Oliver Stahl 2:59
Hey, thank you. It's a pleasure to talk to you, Sam. Hi, good morning.

Sam Hughes 3:02
Good morning. It's a pleasure to have you. Now Jeeves is an interesting name for a robot. What was the inspiration behind the name? Is it the obvious?

Oliver Stahl 3:11
Well, the name Jeeves was inspired by this iconic character know from the stories and novels by the English author Wodehouse. Actually, it's a byword for the very best, most discreet service. What you typically associate now with a butler. So we believe the name perfectly sums up what our service robot is all about and what Jeeves stands for.

Sam Hughes 3:31
Yeah, perfect. And what does Jeeves look like?

Oliver Stahl 3:33
Well, unlike, you know, robots you might know from movies, he does not come with a head or eyes or arms. He is highly functional, very well-designed. He won a Red Dot Design Award, for instance. He is a servant who takes over tasks and he automates services. So he has a huge touch display on top, which makes any interaction with him very smooth. It's like, you know, you go into McDonald's and you order a burger on this new touch display. So that's it, how easy it is. And he has drawers, which slide in and out and those drawers are cooled. So I think still, as of today, it's the only service robot on Earth which comes with this cooling functionality.

Sam Hughes 4:13
Yeah, it's very multifunctional. Now Jeeves transports goods in hospitals by carrying things in those drawers. If I walked into a hospital and opened one of those drawers, what might I find in there?

Oliver Stahl 4:24
So in the hospital setting, now consider he is serving patients. So it might be you find in the drawer: newspapers, snacks, drinks, and basic amenities. So what you can typically find, you know, in a kiosk. If Jeeves is serving an operating room, you might find surgical instruments: ties, canulas, and all types of supplies needed in the operating room setting. And then if Jeeves is servicing a specific hospital station, you might find blood samples, serum samples, drugs, medicines. Those which are delivered, from an in-house pharmacy up to a specific floor. And he even might just transport patient records. And those records, the drawers can be locked, so they can be transferred very safely from A to B. Jeeves in itself is very secure. He can interact with toddlers, or older people. And another thing, which is I think critical now in times of corona; all surfaces are anti-microbial. So actually antiviral. So there's peace-of-mind whenever you interact with Jeeves, you're safe.

Sam Hughes 5:36
That's excellent. And how do the patients and visitors react to Jeeves? It must be quite unusual for them to see Jeeves moving around the hospital.

Oliver Stahl 5:44
Good question. I mean, you find, I would say hundreds of videos on TikTok, Instagram. We get thousands of positive feedbacks over the over the years. Actually, it's unbelievable; I mean we have done thousands over thousands of deliveries. And the feedback overall was always very positive. People like to take selfies, so you might see them standing next to Jeeves in their pajamas taking a selfie.

Sam Hughes 6:11
That's amazing. And what did the staff think as well? How does it help them?

Oliver Stahl 6:15
You know, demand on staff – whether in hospitals, elderly care homes, hotels – it's enormous. I mean, to the extent exhausting nowadays. Especially now, during times of corona. A new mantra has evolved: touchless services. There are all sorts of requirements, which need to be implemented with regards to social distancing. Here comes Jeeves into play. And let me give you an example: A typical nurse walks in average, four to five miles, sometimes up to six miles during an 8–12 hour shift. And those routine and repetitive tasks can be easily taken over by Jeeves. It frees up the time for such staff, and they can look after patients in a hospital setting or serve guests in a hotel setting.

Sam Hughes 6:58
And you also mentioned about people communicating with Jeeves earlier. Can Jeeves talk? How do people communicate with it?

Oliver Stahl 7:04
It's more like a chatbot. Let me give you an example. Consider an elevator situation. Jeeves is one of the very few service robots which can travel in elevators. And so he wants to enter the elevator cabin. So he calls an elevator, for instance, a KONE elevator. He enters the cabin and there are already other people in there. So he goes up one or two floors, and he wants to leave the cabin, but the person is in its way. So his capapble, in a nice voice, to let the person know that he wants to leave the elevator cabin. Or imagine Jeeves is in front of the hotel room, and you might interact with him, then

for a prolonged time you have not interacted – not reacted – or somehow Jeeves realizes you're dissatisfied – so he can answer questions and guide you. So yes, we have implemented certain – what you might call artificial intelligence – which is basically an intent-matching algorithm, for him to react and kind of communicate with another person.

Sam Hughes 8:02
That's incredible. That is really, really cool. But Jeeves can also be used in hotels and offices, right? So what does it do in that case?

Oliver Stahl 8:10
Actually, it all began with Jeeves providing services at hotels three years back. And that was our home turf – and still is. So Jeeves can replace the minibar, do room deliveries, take over back office tasks, such as delivering soap or shampoo or bed linen from storage to a specific floor. Or think about food from a cold storage room, to the kitchen in a hotel; To make it more concrete, imagine you are hotel guests, you're sitting in your room and you want to have a cold drink – a coke and a hamburger – so you go over to the hotel phone, you just punch in a short dial and then does the automatic voice and you can interact with this voice. Jeeves might be already on its way. And the moment he arrives in front of your hotel room, the phone rings again, and an automatic voice – could be a woman, could be a man – tells you 'Hey, I'm in front of the room'. So you go out, you open the room, and you take whatever you might have ordered.

Sam Hughes 9:10
There must be so bizarre when people whow are first experiencing that just opening the door and there's this little robot with drawers and everything.

Oliver Stahl 9:16
Indeed. I mean, it's another service, right. But more and more people could use to it. Now even in times of corona, you might be a little bit scared if suddenly another person is standing in front of you and giving something to you. But you know, there's this robot and he does it in a non-threatening manner. And you're just interact – and he's not asking for any tips.

Sam Hughes 9:42
Even better. Wow. So that sounds like a huge help. Where could we expect to find these robots next?

Oliver Stahl 9:48
We continue to focus on hospitals, rehabilitation centers, care homes, hotels – such settings. I mean, there's a huge opportunity here and we stick to it. You might see him next at airports. And you might also see soon – how to call it?, maybe a sibling of him a smaller version – for smaller hotels, for smaller hospitals – just for smaller settings. And you might soon also see our new UV robot – ultraviolet robot. His purpose is to disinfect surfaces – maybe in offices and even in retail shops – and it just gives you peace of mind; because you know that the surfaces are disinfected and in times of corona, it's just additional safety you might be looking for.

Sam Hughes 10:36
Yeah, so much more reassuring.

Oliver Stahl 10:37
Yes, indeed.

Sam Hughes 10:38
That's fantastic. Thanks for joining me today, Oliver. It's been an absolute pleasure.

Oliver Stahl 10:41
Thank you so much. I enjoyed our talk. Thank you.

Sam Hughes 10:45
Robots can be a big help for people at work. What if they could support city residents in a similar way? Forum Virium has been finding out what it would take. Their company specializes in innovation, and they've been busy creating a suburb where people and robots coexist. Together with the City of Helsinki in Finland, Forum Virium is on a mission to create the most functional smart city in the world,

one suburb at a time. One suburb in particular has been getting a lot of attention – from self-driving buses for the commute home, to delivery robots that courier groceries to your door. Helsinki's new smart city district is the ultimate pilot project for such innovation. We caught up with Kaisa Spilling, a development manager at Forum Virium, to find out what she's been up to lately.

Sam Hughes 11:32
Thanks for joining me today, Kaisa. On the show, we've been exploring the way robots can have a positive impact on our lives. We've discovered how robots can improve the quality of care in hospitals and even deliver room service in hotels. Now, Forum Virium has also been working with robots – but before we get to that, can you tell me a bit about Forum Virium and what you do there?

Kaisa Spilling 11:51
Yes. So Forum Virium Helsinki is the city-owned innovation company. We help the City of Helsinki to create the most functional city in the world, as well as help them to reach the sustainability goals by becoming carbon neutral by 2035. So we work with the city, residents, companies, academia for co-creating futures with the help of digitalization. I work as the Development Manager for Forum Virium Helsinki, with a background from marketing and branding. My responsibilities are related to our innovation living lab activities, and I really work to make Helsinki an urban laboratory for testing smart solutions.

Sam Hughes 12:29
Fantastic. Now there's one particular suburb in Helsinki that's been getting a lot of international attention. Tell me what's so special about the Kalasatama district?

Kaisa Spilling 12:37
Well, 'Smart Kalasatama' is the district in the east end of Helsinki. It's a former brownfield area – developed into a residential district. Currently, there's about 5,000 people living in the district, but by 2040, there'll be 25,000 people living there and about 10,000 jobs. The district and development is a pioneer Smart City district in Helsinki, and it’s also an urban lab for smart and sustainable solutions. And since 2013, us Forum Virium Helsinki, we've been orchestrating the innovation platform activities in the district. So we do experiment and co-create with residents and the innovation community.

Sam Hughes 13:18
That's amazing. So one apartment building in particular has been causing quite a stir. Its residents are serviced by delivery robots that courier groceries to their door. How does that work?

Kaisa Spilling 13:27
Well, it's actually part of the pilot coordinated by Forum Virium Helsinki. So the friendly ASUM-1 courier robot delivers meals on demand from the local K-Supermarket to the high-rise building connected to the Redi commercial center in the heart of the district. So it really works in a simple way; the residents place an order via the building's smart living service on their computer or mobile device, and then as the order reaches the supermarket, the goods are packed, and the robot delivers the order to the door. It does pass through the public space to the elevators leading to the apartment building. And it was really run as an experiment – an agile pilot. It's a great way to co-create and trial new solutions and technologies.

Sam Hughes 14:13
Nice. So where did the inspiration for that idea come from?

Kaisa Spilling 14:16
So, Forum Virium Helsinki has been exploring the topic of 'last mile' in several projects – from carbon-neutral-friendly alternatives for solving the last mile, to how autonomous helpers may ease the everyday. And actually, when we talk about autonomous mobility, it's not totally new in the Kalasatama district; the residents have been test driving a robot bus in the residential blocks already a couple of years ago. And when it comes to the last meters, we had already been in dialogue with SRV, the main real estate developer in the district, and KONE, about the topic of last meters earlier and knew that they would be interested to collaborate. We had a perfect setting to explore how autonomous mobility would work in the public space, commercial services, and residential buildings.

Sam Hughes 15:08

Cool. So when you talk about last miles and last meters, what do you mean? What are you talking about there?

Kaisa Spilling 15:15
If we talk about 'the last mile', so actually, that's kind of a very general topic when you talk about city's carbon neutrality and smart solution. For example, as we want to make the cities more functional, and more carbon neutral – so if we think about the last mile transportations; so we want to find new solutions that use more carbon neutral alternatives, such as e-vehicles. There are many new solutions where kind of autonomous mobility can be used to make the last mile transportation to run better. But also then, in the last meters, there are new options how that can be used to serve the everyday of the users in a new way.

Sam Hughes 16:07
Awesome. And I have another question, actually. I'm really curious, what did the robot look like?

Kaisa Spilling 16:12
Okay, the robot was actually very industrial. Because it was made to carry the food. So it was kind of a packaging, you know, where you put like, cold stuff. But in order to make the robot more user friendly, we had some visuals that were created by the design company Muotohiomo.

Sam Hughes 16:36
Yeah. So what are the benefits of this program?

Kaisa Spilling 16:39
So this was really a proof of concept – a pilot sprint – and in an optimal case, a delivery robot would serve several commercial players in the center. However, in this pilot, the aim was to learn as much as possible. And all parties learned about first of all autonomous deliveries in public spaces as part of smart living and retail services. Also about autonomous mobility and accessibility of robots, and the whole service experience. The pilot provided concrete insights on the last meters with smart autonomous mobility. We also gained learnings about how important it is to embed the 'smart' in future buildings, and what we can do to take that into account.

Sam Hughes 17:26
Amazing. And what kind of challenges would you face with this? I can see so many problems that can arise with a robot trying to get from the supermarket to someone's door.

Kaisa Spilling 17:34
Well, there's of course the safety, first of all, not having the robot demand into someone. But that was tackled with the whistling of the robot so that people were aware that something is coming. Then of course, the safety of the residential buildings – so that no one who's not supposed to come in with the robot could get access. And then there's everything that's related to the service at the supermarket and on the service end, for the end customer, the residents. So actually, the pilot tackled in a small time, many things, and all the partners were able to learn as much as possible.

Sam Hughes 18:13
And what did the residents think of this?

Kaisa Spilling 18:15
They were engaged from the start. It was very well received by the residents. They were happy and mostly interested in a wider product selection. The whistling and chatting robot was greeted with smiles – both by the residents and the passers-by at the Redi commercial center. And also, the polite comments from the robot when entering the elevator, were also found funny and nice.

Sam Hughes 18:42
So it also spoke as well as whistled.

Kaisa Spilling 18:44
Yes, it did.

Sam Hughes 18:45

What kind of things did he say?

Kaisa Spilling 18:48
For example, "Sorry, I'm leaving on the next floor" or "I'm on a mission". It was delivering the packages and saying something for the end user – just to make the social interaction.

Sam Hughes 19:02
But that's really, really cool. That's a nice addition that I wouldn't have thought of adding to a robot that's just delivering food. So how could robots like this change the way we live in cities?

Kaisa Spilling 19:12
First of all, I think the smooth mobility and last mile solutions of the future will definitely change our everyday in ways we cannot imagine today. We've already seen how last year changed our everyday and logistics as well. Trialing and experimentation is a good way to learn what it takes to make the future services happen. We're also thinking a lot about how the future buildings will have to be planned with smart embedded, and how the city infrastructure will also need to be planned by taking into account the autonomous helpers and their accessibility. But well, the technology is developing fast. Smart services and business models will need time to evolve – with the user always in the center.

Sam Hughes 20:01
Wow. So the future is closer than we think. But there's still some work to do before we get there. We'll definitely be keeping an eye on what you do next, Kaisa. Thanks again for chatting with me.

Kaisa Spilling 20:09
Thank you.

Sam Hughes 20:10
A little extra help can make a big difference. Robots can help with errands like fetching groceries, getting office supplies, or restocking medicine in hospital storerooms. This can save time at work and be a lifeline for people at home, especially people that have difficulty carrying heavy groceries. Gaussian Robotics have also created a robot that helps people with everyday chores, their Ecobots have already covered 50 million square meters of the earth – and they're ordering one very essential but often overlooked task: cleaning.

Cleaning is a labor intensive job. The demand for high-quality services has increased with strict COVID-era guidelines. Instead of putting extra pressure on our hard-working cleaning professionals, Gaussian Robotics' floor cleaning robots can help cleaners meet higher cleaning standards while reducing their exposure to the virus. Ecobot co-works together with their human colleagues, who create and manage tasks for the robot on-the-go. By doing the more repetitive tasks, this robot frees up time for their human counterpart, allowing them to focus on more intricate work. What's really special about these floor cleaning robots is the way they move around.

As humans, it's easy to forget just how complex it is to navigate our surroundings. But for robots, obstacles such as railings or barriers can appear out of nowhere, the floor can give way to a flight of stairs, and people can move in and out of your path. Ecobots use specialized sensors and advanced navigation software to navigate their surroundings. Smart obstacle detection helps them move around things that might get in their way – even in busy public spaces like shopping malls or universities. I spoke to Crystal Hu, a marketing manager at Gaussian Robotics, to find out more.

Sam Hughes 21:53
Hi, Crystal, thanks for joining me today.

Crystal Hu 21:55
Hi, Sam.

Sam Hughes 21:56
So how are these cleaning robots better than traditional cleaning services?

Crystal Hu 22:00

Actually Ecobots are reliable co-workers to upgrade the traditional cleaning. Ecobot simplifies cleaning operations for cleaners to have more time to look after higher-value tasks, instead of doing tedious repetitive work. It's not about replacing people – it's about higher cleaning standards and giving an automation solution under the current challenge of global pandemic.

Sam Hughes 22:26
Okay, I see. So what are some of its most challenging tasks?

Crystal Hu 22:30
In general, I will say highly dynamic and complicated environments are most challenging – even for us back to 2017. It's a difficult problem to perform well in these scenarios, especially when clients have such strict expectation for both safety and efficiency.

Sam Hughes 22:50
Okay, and what other tools does it use to overcome these challenges?

Crystal Hu 22:54
As mentioned, Gaussian Robotics utilizes machine-vision to extract semantic information, upgrading data-association from traditional big-cell level to object-character level. As we test this over 1 million miles to fine-tune and have them navigate as naturally as they do today. This sets them aside from the other cleaning robots today that focus more on parts like blinking eyes, we concentrate on the performance and efficiency to deal with the most dynamic situations.

Sam Hughes 23:27
Fantastic. Now, you said before that Ecobot is not about replacing people, but about working with them. So how does Ecobot co-work together with a human?

Crystal Hu 23:36
Yes, Ecobot is easy to integrate into daily cleaning operations. Because our Ecobots are designed to walk alongside teams and support with repetative tasks, the operator can easily operate the robots. Mapping, editing, and task creation can be done by the operator on the robot without external assistance. So we think it’s the co-worker every cleaner would like to work with an a dream to deliver the best performance a human can do.

Sam Hughes 24:06
Awesome. So how do people react when they see an Ecobot? For example, in a shopping mall? Are they surprised?

Crystal Hu 24:13
That's an interesting question. Nowadays, most people actually are no longer surprised. I think only some children are acting a little curious if they're seeing the robots for the first time. Our Ecobots always give a credible, trusted, and safe first impression. So some people will stop in front of the Ecobot to interact with the machine; our robot will automatically stop and turn in other direction in order to avoid them and continue cleaning. Sometimes our customers dress them up with an animal or other cultural figure to decorate the cleaning robots and to make it look more friendly – or spread a commercial message.

Sam Hughes 24:54
That's nice. I like that. So in your opinion, then, what's the next step for robots of this kind?

Crystal Hu 24:59
So our thinking is to become an important part of smart buildings. So, we are now constantly working on making our robots become a critical part of smart building ecosystems and integrate with other IoT facilities such as KONE elevator systems. Ecobot will become even more precise in their cleaning task, just like cleaning-on-demand and communication with IoT systems. We think this will make them more efficient. And also, we will make it so that the work of the robots, cleaners, and property managers can be seamlessly interlinked by combining with Ecobot with AI IoT to form an intelligent cleaning operation ecosystem. So please keep following us to see what we will bring the next year. We are only at the beginning of what is to come.

Sam Hughes 25:51
We definitely will. That's very exciting. So how could this change the future of our cities?

Crystal Hu 25:57
On one hand, I think with the increasing aging population, we already have a shortage of cleaners, especially for long-lasting repetitive tasks. So Ecobot can release the pressure on cleaning staff – making it extremely efficient at securing healthier, cleaner environments. On the other hand, under the influence of COVID, we will certainly have higher hygienic standards. And because the cleaning industry is labor intensive, and relies on a large number of people to clean, it's not very appropriate for people to do work with high exposure risk. Our Ecobot is a natural and progressive way to support and deliver the measures needed, and improve well-being for the hygienic environment. That is to say to co-exist, collaborate, and to co-work cohesively with cleaning teams – picking up the manual and repetitive tasks.

Sam Hughes 26:54
There really is a lot to look forward to in the future then. Thank you for joining me today, Crystal. It has been really fascinating. And it's been great to understand the ways a robot – doing a seemingly small task – can have a big impact on our lives.

Crystal Hu 27:05
Thank you, Sam.

Sam Hughes 27:07
As we welcome people into our cities, we gain a diversity of perspectives and an opportunity to transform our urban environment into something even better. But more people, and other world events, can also put additional pressure on the services that keep our cities going. We've discovered how robots can reduce the pressure of demand and increase the quality of our experiences, helping us live happier and healthier lives. And as we've heard from Kaisa, seamless services delivered by robots could soon be within the reach of every city-dweller.

Sam Hughes 27:39
Hey everyone, this is Sam. Thanks for listening to The Flow of Urban Life. I hope you enjoyed this episode. It's one of a three-part series about connectivity and urban living. Be the first to listen to the next episode in this series, where we'll talk to a leading futurist about their vision for the future of connected cities. Subscribe to The Flow of Urban Life, wherever you listen to your podcasts.