Sam Hughes [00:00:00]
Since their earliest iteration, smart cities have been using data to imagine a better future for urban inhabitants. In 2022, enhanced digitization continues to help us identify previously ignored waste, new avenues for business growth, and greater opportunities for citizen participation within built environments. By incorporating new data streams into service and buildings, both public and private sectors can deliver improved ammenities that accommodate rapidly shifting end user demands accurately – and with added foresight. But as the next chapter of digitized, urban living continues to develop at pace, how can we ensure that the technology facilitating this shift is used ethically, delivers sustainable solutions to genuine end user problems, and creates greater opportunities for all?

Welcome to The Flow of Urban Life, a podcast by KONE. I'm your host Sam Hughes. We're joined by Greg Lindsay, futurist, journalist and senior fellow at MIT's future urban collective lab and partner at Futuremap; and Tessina Czerwinski, director for Smart and Sustainable Cities at KONE. Together, they have decades of experience advocating for and consulting on the subject of smart cities.

In this episode, they'll discuss the current state of data-driven smart city planning, reflect on obstacles to ICT adoption, and examine how the technology is helping us create more resilient, responsive, and sustainable future cities.

So perhaps we can begin by discussing how smart cities have developed in recent years and look briefly at key trends in technological advancement. Tessina, would you like to start?

Tessina Czerwinski [00:01:39]
Thanks, Sam. There are two very important angles to the topic, I see. Firstly, on how the concept has evolved in society. And secondly, where the technological advancement is actually headed, and what are new opportunities that have arisen to further develop the framework.

So, to begin with the push for smart cities grew out of the smart growth urban movement of the 1990s, which argued for planning urban expansion around transit, mixed use development and densely populated neighborhoods. Something actually that is quite similar to what we have today, right? But back then, we also have this, gradually the terminology shifted as tech giants like IBM and Cisco began touting their data crunching abilities to government officials.

And from there I see perhaps three major waves: First the optimization of background operations. This means vendors will support governments by helping to reduce urban complexity with data analytics. So, challenges around mobility, energy waste, water management, for example, will be met more effectively through the marriage of physical assets and advanced technologies, digital technologies. And then we have the second wave of smart cities: The active reorganization of public private sector partnerships powered by accelerated government understanding of the technology. The move will be will met by demand for improved vertical interoperability between sectors and better incorporate data and simulation into traditional city planning processes. You see new bodies like G20 Global Smart Cities Alliance, Open and Agile Smart Cities, which facilitate this development in a more ethical and sustainable fashion. And then third wave is a kind of smart city rewilding of the built environment that sees new tech players pursuing greener practices and a general return to the citizen as the focus of smart, urban development.

Sam Hughes [00:03:53]
And what happens after those three waves?

Tessina Czerwinski [00:03:55]
And that's basically where we are today, right? It's not any more, just the smart cities, tech providers or software providers, but everybody's part of it. Whether it is developers, architects, elevator companies, retail, supply, deliveries – all of that becoming part of the larger ecosystem of smart cities

and especially human centricity. And at the end, the goal is really to extend the lifespan of a building, to make the urban environment better for future generations and whether it's planning for renovation or existing building stock, sustainability intelligence, accessibility, and adaptability become key topics for all the players in the built environment.

Let me give you an example of how smart technology has developed. In Helsinki, we were involved in a case with our customer where an autonomous delivery robot delivered food from a supermarket to people in a nearby high-rise building. And the robot used our KONE API to call the elevator and move freely vertically to reach the end customer. We're constantly looking also for something more specific, a definition of what kind of building it is. And in turn, what type of services are to be expected – and many trends have accelerated, and it could be argued that cities are becoming smart because people's expectations are also higher.

Sam Hughes [00:05:24]
Yeah. Nice. And what do you think, Greg? What do you think about the developments in the key trends?

Greg Lindsay [00:05:30]
I love Tessina's sort of three waves there. A few thoughts: There's sort of the, the decade of the smart city and sort of two bookends to it. In 2010, I visited the Cisco pavilion at the Shanghai expo and Tessina's point there with the tech giants, you know, and the centerpiece of that was the heroic Chinese city planner with his shirt sleeves rolled up with a holographic display of Shanghai as a typhoon rolled in. And it very much signaled that sort of centralized control of the smart city. And then that era ends with, in a way, the announcement of the end of Sidewalk, Toronto, which was going to be Sidewalk Labs', (Google's), smart city project there. And that ended after a pushback from citizens, partly because the government abdicated its responsibility in deciding what kind of smart city it wanted to be and left it in the hands of the vendor. So, I think the sort of interesting phase we're in now is in addition to companies understanding they're part of this ecosystem as Tessina described.

There's two other factors that have come in: one is governments are finally realizing they need to write their own smart city applications and code. I'm very heartened for example, by Los Angeles, where the department of transportation designed their own protocols for monitoring scooters or the autonomous delivery bots Tessina mentioned to, you know, to basically send instructions and send commands. And to receive data back from them. And Selena Reynolds who runs, LADOT likes to say that, code is the new concrete. I love that phrase. Like, that's sort of the future of regulating the public realm so that it's, so that it's there for all that. We avoid a tragedy of the commons. And then the second part of that is also citizens as well. I mean, I think we're on the cusp of a new form of smart city, that we could see in the very early days of the pandemic two years ago, where we saw, you know, thousands of parallel flowerings of mutual aid groups as people used group chats and messaging apps and Slack and Google docs to organize food deliveries and organize medicines for their elderly neighbors, (that) created a sort of smart community that was necessary because of the early lockdowns. So I'm curious about how that evolves as well. So you have this sort of interplay of public and private, government and citizen and, you know, perhaps new flowerings and new kinds of combinations.

Sam Hughes [00:07:38]
Yeah, so am I.

Tessina Czerwinski [00:07:39]
Interesting there, as well, is that you have the smartness coming in different scales of the city, which brings us actually back to more traditional ways of developing cities, right?

Sam Hughes [00:07:51]
Yeah. And like you say, it started off as passive background, technological assistance, but now it's very active. It's engaging with the people. And it's really great to hear from you there saying, Tessina and Greg, about the government getting more involved, and how they're suddenly kind of being like: actually

we need to be a part of this. And so are businesses, so are people, it feels really nice to hear that everyone's coming together for this.

Greg Lindsay [00:08:14]
Absolutely. I mean, it's, it's going to be fascinating to see how these kinds of new value chains form. I mean, again, sort of – mobility, because I've spent more time there, you know, watching networks of cities form the Open Mobility Foundation. Which is sort of an effort to create sort of open-source software for managing, you know, transportation delivery bots elsewhere. And you know, and they're partnering with private companies as well to build out these frameworks. It's what's happened forever in software industries, but now it's actually happening in the built environment as well. And we need a lot more of that versus a single company. IBM or Cisco a decade ago, trying to create smart cities, or Meta now trying to dictate whatever the metaverse will be.
You need those consortium's. You need all of those players together to define what those frameworks will be and they should be open and they should be, you know, everyone should have the possibility to create themselves.

Tessina Czerwinski [00:08:59]
It's interesting to see, you know, if you think about government activities, they're inherently location-centric. So accessing and understanding location related data is quite critical and where we started, maybe for instance, from a transportation angle, the government is also reviewing where to get the data from the connected city.
So yes, like new players, the last-mile mobility providers give them very useful data to understand these breakdowns of different scales. So, how are people actually commuting to work? And that could actually help city planners improve public transportation. but then again, thinking about retail, like these large supermarket chains, they have such a strong understanding about the consumption behaviors in certain neighborhoods or certain streets and how they're connected. and I think as, as Greg was mentioning what would happen with really the topic of sustainability and, you know, accessibility if we were to share with our datas between organizations and between private companies as well, to help government plan their improvements.

Sam Hughes [00:10:12]
Yeah, definitely. And speaking of data, it can always be a bit of a controversial topic, especially when you know, the general public hears the word data or data sharing, There has been quite a lot of negative surrounding that. And so smart cities run on data obviously, but the automated harvesting of human behavioral patterns to improve day to day life can be a double-edged sword. Is enough being done to protect residents?

Greg Lindsay [00:10:36]
Well, certainly a lot more can be done there. I mean, you know, the fundamental flaw of kind of that first decade of smart citizen and almost all, you know, internet businesses at this point is that they're all bulk data collection companies. Sidewalk Toronto, for example, never even arrived at what their business model would be. They just simply knew that if they collected enough data, business models would arrive in time. And so that, that whole paradigm needs to change. And I think, again, I fall back on government regulation there, but stronger standards and understanding how to protect citizens is, is necessary. And particularly for marginalized communities. I mean, there are, there are some technologies, I think that should be. Uh, effectively regulated as if they were weapons of mass destruction, including things like facial recognition. I mean, facial rec…some compared it to plutonium – it has very limited uses, but it's very dangerous and we should be very careful about how we use it. but that said, you know, the, I mean, obviously there is a use for data and that is, as you said, the underpinning of smart cities, I mean, you know, using that data to understand traffic patterns and understanding how the public realm is used and understanding how these scarce resources in cities or buildings are used is critical.

I mean, so one example that I've been very interested in for awhile is you know, we filled our cities with tall buildings, skyscrapers that even before the pandemic, when they were used, as offices were rarely ever full, you know, occupancy rates were never that high. There's an obvious opportunity here that if companies can convince their workers that by collecting data from them about how and where they move inside the office, who they collaborate with, who they speak to, if they can use that and create a

pact with their employees, that that will be used to enhance their work, then perhaps they can, that can be powerful and getting them back into the office. You know, here in north America there's this increasing tension between companies that want their workers back and workers who want to stay remote. How can we use data from these spaces to understand that space and space design creates value that enhances performance, because that's the only way these companies, I think, are going to actually well, justify their investments in real estate, but also get people back there and be excited to be back in the office because so far they've never really made the case that it was that important. So there's a lot of, there's a lot of questions that data can still help us prove and understanding like how physical space creates value for all of us.

Sam Hughes [00:12:47]
And what do you think about the fact that maybe employees don't want to be tracked around the building or, you know, what, what is that kind of angle?

Greg Lindsay [00:12:54]
Well for good reasons. And that's ultimately not about the data in many ways. That's about management and it's about how data is used. I mean, so for example, you know, a friend of mine, Ben Webber, formerly of MIT has created a company that creates these kinds of sensors to use that. And, you know, Ben has pointed out that, you know, it's incredibly, self-destructive for say a grocery chain to put sensors on its staff and monitor them
Restocking shelves. Like it's, it's destructive to morale. It increases turnover. It's, it's a bad economic decision. And yet the tendency of managers to, to micromanage to understand exactly that data, it leads to those terrible outcomes. So we need to see how people use data. I'll give one more example of This which I think is very telling, a few years ago, uh, Was part of a anthropology delegation from a large automaker visiting the large bank in the United States. And that bank was collecting that data from its staff about who was working the latest or who was high-performing and their head of facilities And head of people told us that they had proven that the people who worked 20 hour days were not the highest performers in the bank. And they had made that case to management over and over, but management needed to be re convinced every 18 months. I thought that was very telling that they wouldn't even believe the data, the culture, mandated that they sort of had to think that those, those peoples chained to their desks with the highest performers. We need to have a sea change in how we use that data. Culture is still important and, and firm politics is still important too. So hopefully managers will learn to trust the data more. We, we still haven't. We still haven't done the best job we can.

Sam Hughes [00:14:21]
So it's the respect for data that's also an issue…

Greg Lindsay [00:14:23]
I say data data-driven decision-making is a phrase that sounds great, but rarely if ever do people trust the data – and of course data has its own politics as well, how it's collected, how it's used. So, you know, we need to build new cultures and new politics around the data we collect in addition to new and better streams of collecting it.

Sam Hughes [00:14:40]
Definitely and Tessina, what do you think about the ways we can protect people as part of making smarter cities?

Tessina Czerwinski [00:14:46]
I like also Greg's last angle. You know, at KONE, for instance, we only collect the data about the equipment behaviour. And then we extrapolate the understanding of the building. So not individual passengers. We have no idea who is actually riding in the elevator, for example. So we, we try to create patterns out of, you know, the understanding of building usage: How often it stops, where, in which floor, and we have quite a bit of activities actually around the user experience. So how can we improve,

you know the understanding of the building? As Greg was saying to bring for instance people back to the office and, and I think on a city-wide scale, the same logic applies.

I think if you think about servitization, the process by which, you know, companies add a service to their product offering to create additional value. Servitization is rapidly changing urban life in our neighborhoods, and it's also a great opportunity to marry technology and data with user experience and sustainability. So what can you do with the data that you collect from equipment for also other players, and especially in dense urban environment by, you know, how do you create more out of the space? Going back to Greg's example with the, with the office: What if out of the data we collect, someone can do something else with that office floor? That is, you know, have a, I don't know, gym studio or whatever for a temporary activity or program into that building, that would give many participants along the building life cycle new opportunities to also react more In real time to what is happening with the urban fabric or the real estate field.

Sam Hughes [00:16:40]
Yeah. And do you think showing these people the power of the usage of that data will encourage them to participate more?

Tessina Czerwinski [00:16:45]
I do see this trend in the industry. Like, if we're thinking of the construction and building industry: Many builders are trying to understand how, the concept of placemaking really accepted now across the industry. Right? And there's also an understanding that for placemaking you need to be more reactive to certain needs because we don't plan and design anymore for a lifespan of 50 to 100 years with the same program. So at the end of the day, it's also about that. How do you allow for your inhabitants or your tenants to participate in the design and the development of let's say a campus or larger complex or urban regeneration project?

Sam Hughes [00:17:27]
And what about in terms of aesthetics? What role does that play in smart cities? Because we've talked a lot about optimizing the environment to better serve inhabitants, but is data also driving new perceptions of attractiveness in architectural design? Do citizens respond better to experientially pleasing environments?

Tessina Czerwinski [00:17:43]
I think that, that goes back to one of the topics we said before. Right? We should not forget the perspective of what is, what are cities and what makes cities, you know, attractive, or why do we love them? What are the key characteristics that define what we've always loved over centuries? And that's the incremental growth. And, and I do believe that the data plays a role in that, but also matching it again with traditional skillsets of city making, placemaking. And that goes back to what I mentioned before with when we're conceptualizing the smart building, we need to make sure that a key objective is enhancing the sustainability and quality of urban life that feeds into the design process, encouraging us to create environments that are pleasing for human inhabitants.

Sam Hughes [00:18:32]
Nice. And what do you think, Greg,

Greg Lindsay [00:18:34]
I'll take that question in a different direction. Because I think it's interesting what data and particularly, sort of, algorithmic programming can bring to this. So, you know, in addition to, you know, many of the thoughts around small human scale spaces, the work of Jan Gehl in Copenhagen and others, which can be so contentious. I do think we would all agree that we all respond implicitly to cities where many, many hands have had a role in making them, you can feel a sense of human scale to it. Certainly, like when I'm in Venice, I was in St. Marks, the cathedral and was in total awe because of like the gold mosaic, thinking about the millions of man hours required to do that. It's almost impossible in modern

society to devote that, but there are some interesting experiments about what you can do with parametric design and 3D printing and you know, creating a sort of new algorithmic Rococo. I think there's a really interesting whole field that's about to open up in terms of building design and aesthetics of what we can do, where we bring together AI and machine learning, which if you think about it is a way of sort of deep time, right? It can do millions and millions of iterations. It can evolve very quickly – giving the, arming those kinds of intelligences with tools to allow it to produce its own creativity… It'll be very interesting to see, you know, what kind of new grottoes and filigrees and sort of things we can produce with that. So I do think there's, you know, there's going to be an interesting role that the smart city can play, particularly in that sort of construction tech role in, in terms of how we design our buildings and how we, how we build them out. So a different direction from what Tessina is talking about, but, but yeah, potentially like a new aesthetic for the remainder of the century as these tools evolve.

Sam Hughes [00:20:07]
That's very interesting. So you think the buildings we see over the next 50 or so years even could just be completely different?

Greg Lindsay [00:20:13]
I think so. You know, going back again to one of the archetypal smart cities – Songdo, South Korea, which I've written at length about. You know, Songdo was designed very consciously by a team of talented architects at Kohn Pederson Fox, but ultimately a team of 40 or 50 architects can only do so much. right? There's like a level of resolution you might say, that they can't get below. Because there's just, they're people designing buildings. But if you can, you know, bring in advanced intelligences into that to get even deeper and more granular, you can start to, you know, you can start to maybe cross an uncanny valley of being in a place that feels too new or feels too, pre-made, kind of thing. And start to feel worn in, or perhaps feels completely alien in a different way because it's programmed by machine intelligences. So I, yeah I think it will be very interesting to see if, you know, you can start to build out at a scale that was never achievable before, or, or achieve a level of resolution that would have required that kind of like you know, millions of hours by artisans over centuries, the way we built the old cities of Europe and so forth.

Sam Hughes [00:21:10]
Yeah. We could see some really crazy architecture in the near time.

So we mentioned earlier that there are barriers to the adoption of smart city technology at both the government and citizen level. But what about the key issues with adoption and then potential roadmaps to improve digital maturity? What do you think about that, Greg?

Greg Lindsay [00:21:28]
Yes. Well, I think I alluded to this earlier when I said, you know, I think. You know, when it comes to software, how it's usually done, there's consortia, right? You see public and private players come around tables to find standards, hash it out. You know, the science fiction author, Bruce Sterling verses this 'wrangling'. There's endless wrangling over this. And, you know, we haven't seen as much of that in smart cities. We haven't built out the protocols, the standards that, you know, that would be needed to think about a open, interoperable, built environment that's enhanced this way. And you know, things like the Open Mobility Foundation and some of these others I think are pointing towards that. But, you know, no one has advanced that kind of roadmap and, and, you know, I think there's a crying need for it. I don't know if this is, you know, needs to be an EU Commission led effort or whether we'll see some sort of, you know, open source consortium come together around this. I'm still waiting for signs of it. But, but I think that's like the sort of first critical piece. Like what, what is, what is that consortia? What is the web three consortia? And, I don't mean Blockchain. I mean, sort of the, you know, the, the committee that originally built out the worldwide web – we haven't yet really devised that for smart cities.

Tessina Czerwinski [00:22:29]
I think there's a move with, you know, Open & Agile Smart Cities because we see it as well as a company when we talk to, to city governments that are curious about our open API, you know, so how

can we integrate it into theirs and how can we as well – there's a benefit as an organization to place that then into other cities because governments want more interoperability. And I think there's an increasing trend, as Greg was saying, where we will face that from the private sector as well. But another point maybe with the barriers is the limited resources to bring that progress, right? Roughly one in six cities can self fund the required infrastructure project. So I think when we're talking smart cities and the barriers, that's also certainly one aspect. Going back to what we discussed before, is there's data from other providers as well, that could really benefit creating this multi-layered city, but we haven't gotten there yet. And, and trying to start to think, okay, what are the benefits actually of these shared services?

Sam Hughes [00:23:35]
Yeah. And I'm very curious as well. So you kind of saying on a city level here that, you know, cities will start sharing with other cities, whether that'd be data or technology. And then once it rises, surely it becomes country to country and it becomes a global standard that we need to find. What do you think Greg?

Greg Lindsay [00:23:51]
A thought I had on this in terms of like defining those standards: I mean, and going back to sustainability, I think if there's a real impetus, there's gonna be one thing that drives the impetus for creating those standards across this It's going to be the sustainability argument. I've been thinking a lot recently about Scope 3 emissions. I was just reading a report that just came out from the NewClimate Institute on 25 of the world's largest companies where most of their missions, 87 percent, hide elsewhere in their value chains. And it struck me like this is finally, we have the argument that regulators are going to put teeth into to create those kinds of data formats, to allow us to have that interoperability, to understand and exchange data and value up and down our value, So we can reduce those kinds of emissions. And I will be curious about whether if they, if that regulation finally comes from somebody like the US SEC or, or something else that gets mandated in place, that companies have to collaborate on this and they have to work with governments and this to understand where those emissions evolve. I've been waiting for that, that impetus that really forcing function to do that. And I'm curious about whether this will be it. We've been waiting for a year for the SEC to make rules in the United States And apparently there's a fight over how strict to make them. They're not, not how lenient to make them. So, you know, maybe, maybe that'll be it, but yeah – to your point about government to government, that would be the argument how, you know, the EU and it's its own sort of carbon regime, the United States and others.

Tessina Czerwinski [00:25:05]
You know, when you start thinking of how cities are looking into their sustainability agenda and how to track it and how to scale it up, something new came up, which is a net zero neighborhood. And, and that, I think we will see more and more coming from private public partnership. And that's really the smart city of the future: starting to think more locally, like what can maybe bigger players that are involved in the built environment, whether it is retail or delivery or postal mail, if that still exists in that specific city or, you know, the big ones like DHL and so on. What is their role in actually contributing to the net zero neighborhood?

Sam Hughes [00:25:46]
Yeah, definitely. I really agree. And I'm thinking back to what we were saying earlier as well, and I hate to kind of circle around the same subject, but do you think one of those barriers is that there will be pushback from some companies like DHL and things like that who are maybe a bit afraid of digitalization?

Tessina Czerwinski [00:26:01]
Yeah, I think that what Greg mentioned before, I would probably not agree that it needs to be an imperative from government. But I think there's smoother ways to engage. I think a lot of companies like ours, like others, we don't see yet the, the value of the data to the full extent. And that goes back to the topic of digital literacy across industries, like, and understanding how we can actually contribute to, improve the quality of the urban environment and the sustainability aspects. So, yeah, definitely. I do see that it will, it will require it more, you know, co-creation, more partnership, but on a more tangible

level than, than just, you know, the policy-making level. If you have all these different industries participating in this new vision of what is the connected urban environment, you start also to create opportunities for, if you look at the construction of the building industry – they're struggling with the aging workforce, and digital services combined with the opportunity to provide new perspectives could make it more compelling for a younger workforce to join what can often seem like a slow moving industry out of touch with the future.

Sam Hughes [00:27:14]
Nice.

Greg Lindsay [00:27:16]
Yeah. I mean, it is there, there are limits, I think, to what some industry players will want to do, because, you know, ultimately when it comes to cities, when it comes to living, you know, There's policy decisions, we want to make, we want to encourage people to live densely in the cores of cities, because it decreases their carbon footprint and it can increase quality of life and, you know, and so, you know, there'll be companies, for example I've written recently about a so-called quick commerce or 15 minute delivery that the European and Us companies like Gorillas and Jokr and others that promise near instant delivery of your whim, you know, ordering ice cream from your couch. We can't have a world of infinite convenience for the same reason that we can't have a world of infinite personal car ownership in cities. Ultimately, when you scale up that individual desire, it has bad outcomes at the collective scale. So, you know, I think what this is, you know, we need to find these ways to use data and to basically make the arguments just as Tessina's original point about the smart growth movement about why urban density is good, why Smoother public transport is more desirable than personal car ownership, you know, creating this new form of carrots and sticks in terms of policy arguments to enhance urban life at, at the individual scale and also at the public scale of that.

Sam Hughes [00:28:27]
Yeah, I suppose you still have to sell the fact to them that they're going to get that personal reward, even with the greater good improvement, rather than a personal focus.

Greg Lindsay [00:28:34]
Exactly.

Sam Hughes [00:28:35]
So, I mean, cities are vast networks, right? With deep and storied histories. So it's not possible to describe an end goal per se, but in terms of the mid to long-term, what are your predictions for the evolution of a smart city tech in our lifetime? Like how will this, how will the connected city look and feel in 2050 For example?
Greg, what do you think?

Greg Lindsay [00:28:57]
Great question. 2050 feels so far away. Well, I was just thinking, you know, one of the opportunities or developments that I am most excited for and potentially afraid of, depending on how it plays out is the looming change in the interface of information. Right? The smartphone era is 15 years old. Apple is supposedly working on augmented reality glasses, Snap, and others are working on this. If we're going to build a metaverse, I think it'd be much more interesting to layer information on top of the built world versus vanishing into a VR headset. And if that happens, then it raises all sorts of incredible potential to activate spaces that are otherwise hidden.
And so just as example, obviously the place in here, one of my favorite cities to visit in the world is Tokyo because in Tokyo, invariably, like the hottest coolest bar is hidden behind a men's clothing store on the seventh floor of a mid rise skyscraper. They have an incredible use of these interstitial spaces. How do we take these tall buildings, these single use office buildings and others, and make them more varied, interesting places. And how do we make the information available to see them? And this is where, you know, augmented reality and others could come into play where we could see, and look out

to 2050, that perhaps one future of the smart city is this incredibly varied ultra-mixed-use environment where there's all sorts of interesting pleasures and surprises hiding between it, where AR interacting with those kinds of open APIs that Tessina has mentioned, allows us to wayfind our way through cities, through elevators, through buildings to find these desirable places.

Sam Hughes [00:30:23]
Nice. And what about you Tessina?

Tessina Czerwinski [00:30:26]
Well, I'm an optimist. So, you know, like traditional buildings, smart buildings should also trigger good feelings, such as pride, belonging, safety, and wellbeing. People live and work in smart buildings and smart cities, so the focus should really be about the holistic experience, as Greg mentioned, and rather than really focusing or seeing occupants merely as users of building or an infrastructure, or smart buildings merely as a context to introduce technology, because within the life of occupants, their experiences are not just restricted by the walls of the building, but instead they reach beyond these physical boundaries. So, the act of bringing these quite separate streams, you know, let's say the smart city, the smart building developer, closer to one another can, can benefit both initiative, and, and ensure also that investments, create a maximum amount of impact.

Sam Hughes [00:31:24]
And so we talk a lot about the smart technology enhancing the city's resilience as well, which in light of the ongoing pandemic, of course, but also in terms of future threats to our societies, can we just kind of discuss how smart cities might be better equipped to help us overcome these issues? What do you think Greg?

Greg Lindsay [00:31:40]
It's interesting, you know, when you say future threats, you know, obviously climate change is the one that I think the most about, you know, whether that is of course designing better weather systems, for warning and hazards of impending storms or sensing, you know, sunny day flooding in coastal communities or temperature sensing. Obviously there's a huge program to be made there, both the local level, you know, of helping citizens understand when there's dangers and threats and creating that sort of sensing and instrumenting armature, I think is powerful. And then there's a whole other effort there to, I, you know, I'm actually working with my friend Parag Khanna, we're developing software called Climate Alpha, which is there to public officials and investors to understand areas of opportunity in a climate changing world that perhaps we need to think of different geographies, different patterns, different places with water, with cooler temperatures. Obviously, the Nordics come out very well in these, by these measures. So, I'm longing for Finland to say the least. But I, I think, you know, that's the kind of thing where we need, when it comes to your point about new cities, we need to think about how do we build out the cities in the sort of what Parag calls climate oasis'. And so I think that's one area of importance and it will be interesting to see, what is the legacy of the pandemic? You know, it's interesting that we're at a moment here ,where many nations around the world are lifting all restrictions, giving up on their contact tracing, You know, it seemed for awhile that we would live in an era where we would all be tracking our movements forever in the name of public health. And now it seems it might go the same pattern as the Spanish Flu of 1918 or they'll, you know, the pandemic of 1957, where it doesn't leave much of a mark on society, that perhaps we forget some of those lessons. So it will be interesting, you know, it's been a dress rehearsal for climate change and underscores the need that we need to build early warning systems of all stripes for city inhabitants And for nation states and think about these longer-term issues of resilience and you know, where are there areas of opportunity?

Sam Hughes [00:33:29]
Definitely, Tessina what do you think?

Tessina Czerwinski [00:33:30]
I think that, you know, in the past cities have responded to crisis by becoming cleaner, better and connected and more sustainable. For example, The Great Stink in Victorian London, led to the building of a modern sewage system. Then New York's Cholera epidemic in the 1830s resulted in the building of Central Park. And we've discussed how smart technology in modern cities is already delivering huge benefits on a day-to-day basis through connected public transport or traffic monitoring management, water level and flooding monitoring, or connected streets lights. So what the pandemic has shown us is that this technology can be further developed to help us adjust quickly and effectively to new constraints on urban living. So, from advanced people counting, that ensures, you know, health and safety measures are met, to rethinking office and retail spaces when users plummet from a thousand a day to 20 users in a building. I was also thinking about how vital certain services are in the city. And that's what we've done now. So, with a big collaboration with the Financial Times recently is trying to understand what our elevator data can tell about city patterns and what is mission critical infrastructure in a city. And especially when you look at certain, you know, building types or building segments like hospitals, you can't afford down-time. And that's where, for instance, predictive maintenance that preempts malfunctions are literally lifesaving. And a key takeaway from last few years is that smart cities with emerging and innovative tech applications have witnessed faster and more effective, you know, testing and reporting also in the pandemic now, and they, that allowed them also to have You know, more localized strategies, how to deal with the pandemic. And I think we've seen this significantly in Europe, how different countries, different cities have dealt with the pandemic based also on leveraging the data. And for instance, take Switzerland, Zurich - we have no more COVID restrictions, no more measures, no more masks, kids, schools, everything is normal. And that allowed for essential infrastructures to keep running. So we need to create more of these type of resilient futures, really considering at the end, who's the, who's the end customer and that's citizens and the public service that needs to be addressed also to them.

Sam Hughes [00:36:12]
Fantastic. And I think that's a brilliant note to end on as well. And I have to say it's been an absolute pleasure speaking to both of you today. I've learned so much.

Tessina Czerwinski [00:36:20]
Thank you, Sam.

Greg Lindsay [00:36:20]
 Thanks so much for having me.

Sam Hughes [00:36:22]
Hey everyone. Thanks for listening to The Flow of Urban Life. A podcast produced by KONE. You've been listening to Tessina Czerwinski and Greg Lindsay discuss the future of smart and sustainable cities. I hope you enjoyed this episode. Be the first to listen to the next episode in this series and subscribe to The Flow of Urban Life wherever you listen to your podcasts, see you next time.