campuses, and of portions of cities. And it just evolved into more focus, at least for me, at the scale of the city, and the region, and the district.

Steven Ludwig: It's got to be very satisfying to see a plan you've worked on for a long time. And then you see it like, "Oh, this took a few years, or however long, and now it's done and it looks cool."

Monty Wilson: It's very satisfying. It's also a bit scary. It makes you stop and think you better be careful about what you put down on paper, or what you write down for a client, but it is. We love doing the big vision plans and the big strategies, but we want to have impact and see things built, and so that's the real test. And it's, I guess my clients might not want to hear me say this necessarily, but there's some experimentation that goes on in cities. You're evolving. You're testing. It's not going to be perfect, so how do you deal with that at a strategy level, so that the city can continue to grow and evolve over time?

Steven Ludwig: Cities need to have that flexibility, don't they? Because as human animals, we're not always as predictable as we'd like to think.

Monty Wilson: Very true. I mean, we like to draw parallels between how a city functions and how an ecosystem functions, for instance. So, cities are systems of systems. Although we haven't always thought about them that way, certainly haven't designed or built them that way. But if you really step back and look at it, and that's a lot of where, I think, the industry and the conversation has gone today, is around this systems thinking approach to cities, and how you really have to look at that organic component to it and recognize it from every aspect.

Steven Ludwig: So, one of the latest things that is happening in that line of work is this idea or notion of a smart city. What is a smart city?

Monty Wilson: It's a great question, and it's one that's being looked at by folks from every background and every corner of the world right now. No mayor wants to say that they don't want to be a smart city.

Steven Ludwig: Yeah. I'm not a mayor of a dumb city.

Monty Wilson: Yeah. Right. So, it's really a fundamental challenge. And so, how do you think

smart city, is it's typically viewed strictly through the lens of technology. And while that's critically important, because we have it at our fingertips, it can make a significant difference in the lives lives of citizens, in the lives of a plant operator, or a transit system leadership team. We cannot lose the other side of that equation into what really does make a city livable and functional, in the most holistic sense, smart.

Steven Ludwig: What's some of that technology people are talking about, and how would that be deployed? So, how does, because yes, it does sound like when you say smart city, one would automatically assume it's talking about some AI, or some machine learning, or everything being connected to the internet. But what technology do you see as helping cities become more efficient, I suppose, or more livable?

Monty Wilson: Well, the one that comes to mind maybe first, not the only one, but top of mind is certainly the question of autonomous and connected vehicles. You can't have a conversation, or read an article, pick up a newspaper, it seems, without that topic being there. And it's from every angle, and by all accounts, we're headed in that direction. And so, one thinks about the benefits that would provide citizens, especially in a metro area that doesn't have robust mass transit. Now they're going to be able to spend some of their time not worried about driving, being able to maybe take care of some other tasks or do other things, and that'll improve their efficiency, if you will, from a livability standpoint. There's also the question about safety and security. So, how do we deal with traffic perhaps more efficiently? Everything you hear, especially once 5G makes its way into the market, that the vehicles are far more safe than the human driver, because there's no human error involved.

So, that's one aspect where we're seeing potential benefit. I think when you think about, another area is a lot of discussion around smart corridors, smart streets, smart districts, and where you've got sensors in the public realm on light poles, on signals, certainly communicating with the vehicles, but also providing wifi hotspots, providing other detection services, if you will, sensors that are detecting gunshots. So, there's a safety issue, sensors that are detecting air quality, other things that allow city operations to communicate better with one another.

So, how is it helping first responders? How is it providing better connectivity for the citizens again? Then when you look at the economic side of it, better connectivity to those that are trying to communicate, let's say, with the public at large, for a service or a retail. You're walking down a street, and all of a sudden you get a popup because now you're close to things that you typically like to frequent. And now you know that you're in an area where you can go access that. So, there's a lot of areas where we're moving towards efficiency and better service, but there's also the big side from a city operations standpoint and safety security, and some of those issues as well.

Steven Ludwig: Are you seeing municipal leaders leaning in that direction, or is that something that still has to be thought about, because of the competitive nature is like, I need my city to thrive in that I'm going to win against this person?

Monty Wilson: I think there are still certainly some examples where you're not seeing the kind of cooperation you would want, but there are probably more stories today than ever, at least in the US, where metro regions are looking at problems, whether it's the passage of a transit bill, looking at issues around affordable housing, looking at issues around technology and deployment, where they're looking at it collaboratively and figuring out what the collective win looks like.

Steven Ludwig:

operating the city, you've got more information at your fingertips and more decision support as a result.

Steven Ludwig: Now, it seems like larger cities would generally have greater budgets to invest, although they have a lot more infrastructure to take care of, and whatever updates they need to make a smart city. But it seems like smaller, mid-size to smaller communities, that could really use the extra cash from the savings that a smart city would likely provide, might not have the resources that a larger community has. How do you work with them to like, "Yes, these could be some things you could implement," how do you talk to them about that if they don't have the money at hand?

Monty Wilson: Another great question. And it deals, the issue of capital is the critical issue in this conversation. Because you said it yourself, no mayor wants to be leading-

Steven Ludwig: A dumb city.

Monty Wilson: A dumb city. But what do they do about it and how do they define what they're going to do with the data they're going to gather? So, there's so many aspects to it. And even if they've got the aspiration, and let's say they can afford the initial capital outlay, how are they going to deal with the fact that in three years, that sensor's going to be outdated and need to be replaced, or how they going to deal with long term maintenance? Can't keep going back to the citizenry every 18 months for more tax money to do that kind of thing.

So, what we're seeing, and we've got some really strong partners in this area, are folks like Smart City Capital, that are bringing capital to the equation. And bringing that from global sources, that are in interested, that are bullish on the smart cities market. And that are bringing creative strategies to cities where we're able to bring the engineering, and program management, and technical expertise, Smart City Capital is able to bring the financial structure that allows the city to see real improvement in the particular things they're trying to solve for. And they don't have to, they get their return over time. They get access to the data, they get all the benefits, and then the consortium is able to also appropriately benefit from the relationship, and everyone wins.

Steven Ludwig: Sounds like a good partnership.

Monty Wilson: It is, and I think it's a trend that you're going to see more and more of. And to your p1 724(t)-5?(n:)]cuhbullish on the

Steven Ludwig: One of the things that was interesting when mobile phone technology came out, so communities that didn't have a robust landline infrastructure, leapfrogged that and went to mobile phones. And that had a huge, for mobile payments and economic development and wellbeing of very small businesses was incredibly helpful. Are there cities that are in the developing world, could they leapfrog into a smart city environment, if not fully flushed out, somewhere to, "All right. We missed this part, but we're jumping to the future." Is that possible?

Monty Wilson: I think it gets back to your prior question around capital. So, with creative strategies on bringing capital to the table, and again, scale of solutions might be another interesting element of that conversation. I mean, what does it mean to be a smart city? Does to mean that every linear kilometer of roadway has to be connected or not? Can we think about it in terms of districts and neighborhoods. In certain aspects of the city, you see a lot around microfinance and things that have happened in the development world. So, how can creative strategies around capital with creative delivery strategies on the engineering side still help a city make improve movements and become smarter, perhaps just at a different scale as other parts of the world?

Steven Ludwig: So, if I'm hearing you correctly, where you start is really dependent upon where you are today. So, if I have a midsize city, my choices for helping become more, quote, unquote, smart, might be area A. [inaudible] I'm a big city, Area B, and a small city, Area C? Does that sound like it's all dependent on what's going on in the local area?

Monty Wilson: Yeah. There's a unique flavor to each municipality. I think you're seeing consistency around the vehicular side of this. Autonomous vehicles and connected vehicles is pretty much a common theme in any smart city conversation. Then you might overlay the whole public safety piece, as another common thread. But then inside of that, it's dependent on what each city and what each administration's trying to achieve. What's unique about their economic landscape, what's unique about their citizenry, the things that make their city special, those folks are trying to solve for specific problems inside this discuF2 1(y sp)iF2 11 Tf0 1 36eyt1 0 0 ity t city sb8y folks are trying to

the local area?

which is the whole story around speed. What's the time between when I hit the button on my phone, and I get a response?

Steven Ludwig: And I'm more impatient than ever. And I have all the access to human history in my hand, but it's like, it's not fast enough, which is ridiculous. But I get what you're saying.

Monty Wilson: Yeah. Give it a minute. It's going to outer space, coming back. So, but what they're telling is that that's going to be transformational. So, when you think about thousands of vehicles on a city street at any one time, communicating as it moves down a corridor with every street light, with every traffic signal, the speed with which that can happen is going to allow that to be safe, and allow it to be trusted, so that the three of us don't have a problem with going and getting into one of those cars and feeling okay about it.

The same thing when it comes to the volume of data that's being brought to the table and needing to be distributed through a system. So, think about a city with hundreds and thousands of connected street lights, that's gathering, sensors are gathering all kind of data, what are they able to do with that? How are able to process it? So, again, with the non-technology hat on, and I admit I was a bit of a skeptic at the beginning as well, trying to understand, well, what are they really talking about? Everything's leading to this is step change, transformational, for

going to do with the data that they're going to gather. So, it really illustrated to me how far on the frontline we still are with this conversation.

Now, a lot's changed in the couple years since that meeting took place. And we're seeing creative partnerships and we're seeing a lot of momentum. A lot of momentum in Canada right now. A lot of momentum in other, as I mentioned, tier two and tier three cities around the US, as well as the big folks, innovation districts in Houston, Texas, or strategies in New York, and I mentioned London. So, a lot's changed, but we still are on the front end. And I think while all the prognosticators want to talk about where we're headed, it's going to be interesting, but none of us really have a clear picture of what it's going to look like.

Steven Ludwig: And I think that's the only fair answer. Yeah.

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says, "Hey, you shopped at Target the last three days. There's a target around the corner, or a Starbucks down the street." I think that represents another place where you're being tracked. And like we're seeing with some other apps that we maybe use now, where we buy things and an ad pops up on your social media. So, it's an issue. I'm not, again, the legal expert in the conversation, but I think it's yet another example of the complexity that this represents.

Steven Ludwig: And a designer, that's why it's important. I'm sorry to interrupt, but it's like, that's why designer is important, because the tech guy might just be, "This is great tech. Let's use it," the tech person. And the designer might go, "Well, we have these. We have to think about this, and we have to think about this." Does that sound? Yeah.

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