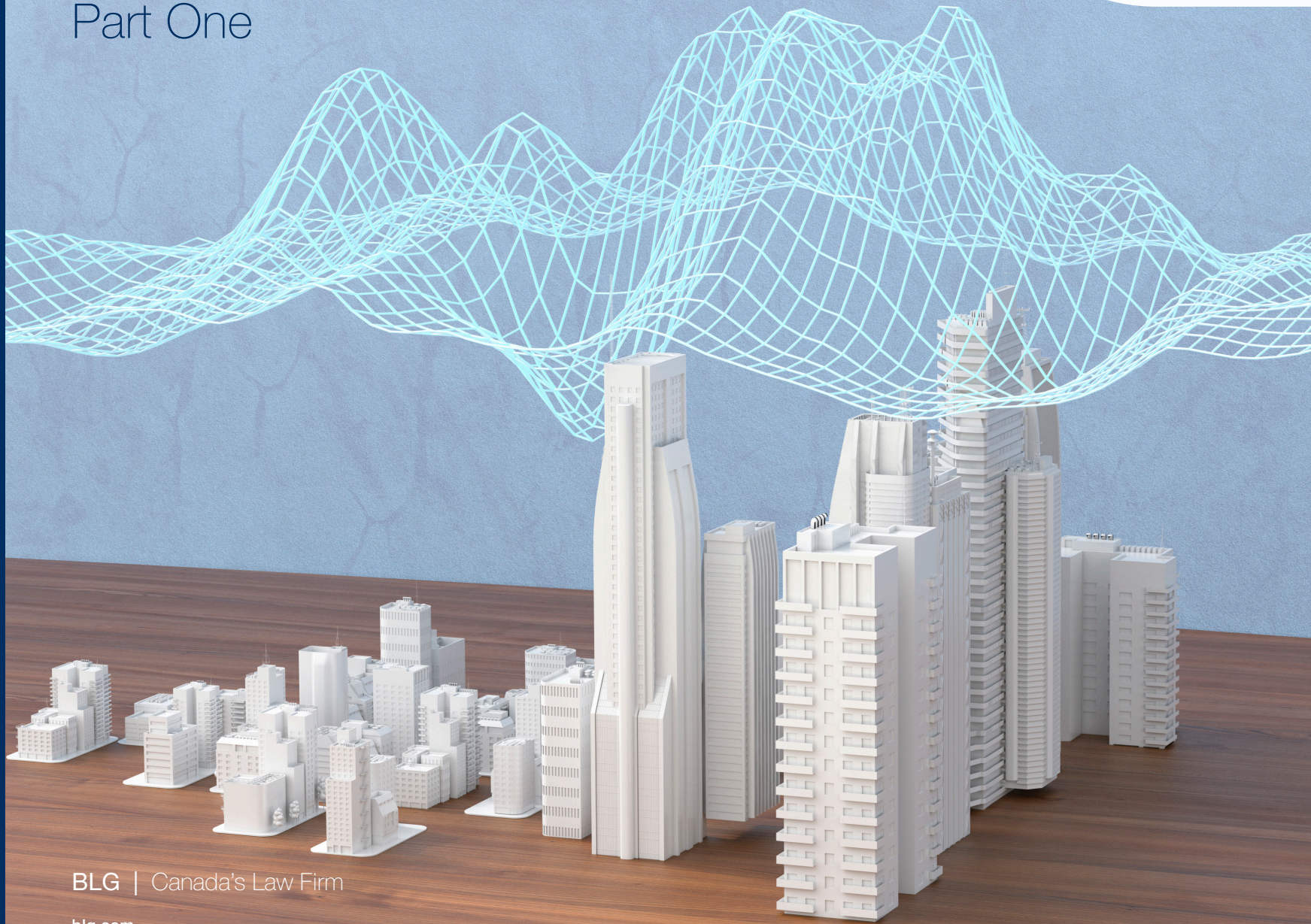


Smart Cities Round Table – Part One



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PERSPECTIVE

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The municipality of the future will be radically redefined by current transformative technologies, including AI, robotics, IoT, smart infrastructure, open data systems, and autonomous and electric vehicles. One of the most pressing issues facing any city is how much the future will be shaped by the companies driving the technology, and how much by the municipalities themselves through planning and adoption frameworks.

Canadian municipalities of all sizes are in the nascent phase of a complex and potentially confusing journey toward the “smart city.” As municipalities pilot and deploy connected infrastructure projects in partnership with technology providers/partners, they will face new challenges that current policy and legal frameworks are not yet fully equipped to address. These include implementation logistics, obligations regarding cybersecurity and the use of citizens’ data, contractual arrangements between municipalities and technology providers/partners, and how municipalities will manage associated risks and liabilities.

To better understand the legal frameworks that will need to be put in place to address the municipality of the future, we assembled a round table of experts from a few of the larger Canadian municipalities, technology providers and other organizations whose mandates directly address these areas. The result is a dynamic three-part conversation that examines what it takes to progress from pilots to a well-regulated vision of the complete smart city.

Change is coming, but who will be in the driver’s seat?

Roundtable Participants



Anthea Foyer
Project Lead,
Smart Cities, City
of Mississauga



Sanathan Kassiedass
Sr. Advisor, Innovation &
New Mobility, Metrolinx



Nasir Kenea
CIO, City of
Markham



Erin Leslie
Smart Cities, City
of Toronto



Vance Lockton
Manager, Digital
Governance,
Waterfront Toronto



Nathan Muscat
Solicitor, Planning
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Tribunal Law, City
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Fahad Shuja
Coordinator, Ontario
Good Roads Association,
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Vehicles in Ontario



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Nasir Kenea
CIO, City of Markham

Part One: Regulation and Public Engagement

Moderator: What regulatory issues have you run into with pilots or long-term projects?

Nasir Kenea (CIO, City of Markham): You could start out with building inspectors, who inspect buildings and approve for occupation or the construction quality itself. The building codes they follow and enforce are so prescribed, and often written 40 or 50 years ago. Now that technology has evolved, the assessment of future buildings will be different, but the code hasn’t necessarily caught up. So how do we bring our own staff up to speed even if the regulation itself is not catching up? Wherever it’s possible, some new ‘smart’ technologies have been implemented, such as lighting and sound systems.

But to get a clearer sense of how we need to catch up to existing technology, look at the Quayside project in Toronto. Many of the materials and technologies the developer [Sidewalk Labs] talks about implementing all have implications in terms of these codes.

Vance Lockton (Manager, Digital Governance, Waterfront Toronto): Yes. If you take a certain lens on it, they’re putting forward almost an entirely new governance framework. Sidewalk, for example, has proposed to create its own transportation management authority, an open space authority, an entirely new building code [for the neighbourhood]. Which raises questions for the public like: “Why do we need a transportation management authority when the city has one?” From Sidewalk’s viewpoint, you could say they were trying to solve for the objectives that Waterfront had put forward in its RFP. Without trying to speak for them, it seems like one of their big thoughts was, “We need to find a way to streamline an awful lot of the approvals processes, around things like buildings and how roads work.” If nothing else, it at least exposes what a major U.S. private sector company feels is a significant challenge.

Anthea Foyer (Project Lead, Smart Cities, City of Mississauga): I’m not sure if you have all seen this, but according to the UN, there are three stages of smart cities. The first one is company- or private sector-led, the second one is city-led, and the third would be citizen-led. That’s considered the evolution of a smart city. By that logic, a city’s evolution is far along when it’s your citizens that are really deeply involved with things like code and regulation.

In the case of Sidewalk Labs, they keep saying they’re the first ones to do what they’re trying to do. But if you look around the world, I don’t know that this is true. This has happened several times around the world: big companies come in and they push and then the citizens push and the governments push back. That’s where it starts to get interesting because that’s when people start to realize that things like data do matter, they do affect their lives. The interesting part will be to see where government and citizens can pull back within these regulations. Right now, that company is just kind of domineering and coming in and going, “We know how to do this and you don’t.” Which isn’t true. Toronto is a very big tech city. There’s lots of smart brains in this city. But it’ll be interesting to see how fast we can push through to those other two levels of smart city.



“The public conversation we’re having around smart cities now is a good opportunity to look at how government can work differently with citizens and businesses and make transformations to help build public trust and understanding of data.”

Anthea Foyer
Project Lead, Smart Cities,
City of Mississauga

Nathan Muscat (Solicitor, Planning & Administrative Tribunal Law, City of Toronto): I’m interested in the latter two — the city-led and citizen-led. Forget about smart cities, cities in general are supposed to be driven by what citizens want. But city planning is largely the product of a top-down regulatory framework. Nasir makes a good point with building codes — something may be good or the standard 20 years ago may not be sufficient today.

I work in a litigation context with development proposals. Increasingly, residents who come to speak at these hearings are now asking questions about the applicability or implementation of smart technologies, like, “Are there going to be plugs for my electric vehicle?” These are things that city planners in the past haven’t necessarily thought about right away. I wonder if the impetus could be a change to legislation to allow for a clear definition of what a complete community may be.

Anthea Foyer: I’ve been working closely with our planning and building department and you quickly realize that many new technologies are all so new to them. They’ve never had to deal with questions like what big data means for a community. So we haven’t traditionally included them in our discussions of what a complete community is. How do you see that being able to shift within the planning department so that that could get integrated? Because I know it’s a bit of a hard fit.

Vance Lockton: Speaking about that citizen-led piece, that’s one of the critiques, obviously, of the Sidewalk project — people saying that they didn’t ask for all of this. As part of our initial RFP, Waterfront Toronto put forward a series of objectives that we wanted our innovation partner to hit, and we wanted to know how they would do so. But if people are raising these issues, you have to ask whether those were the right objectives in the first place, or if there is a disconnect about how the innovations will achieve those objectives.

Robert Wood (BLG, EMER): *Are they even the right objectives that you’re trying to hit? Is the lesson to bring the citizens [into the consultation process] as early as possible to make sure theirs is the voice deciding what a complete community is, and how it should be regulated?*

Nathan Muscat: Do citizens have to be convinced that a smart city is going to be a good, livable city? Where is the space for citizen engagement? I’m all for technology and autonomous vehicles from here to Windsor. But is it citizen engagement that’s driving this or is it just big tech and telecommunications companies? It’s hard to tell where we’re at.

Vance Lockton: We try to avoid using the phrase “smart city” because there’s the assumption that it’s all about adopting new technologies. Instead, we use an “intelligent communities” framework. It’s simply about recognizing there are problems that could be solved in smarter or more intelligent ways. Whatever you want to call it, I don’t necessarily think everybody has bought into the idea that it’s technology that’s going to solve our problems.



“...autonomous vehicles are just one consumer-facing product, so you can wrap your head around it. When it comes to smart cities more broadly... did residents ask for this?”

Sanathan Kassiedass

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Metrolinx

But there is this sense that the problems we’re facing are not inevitable or unavoidable, so we should be having discussions about how can we best solve them.

Edona Vila (BLG, IoT/AV): *What I’m hearing is that there are two streams to approaching this subject. You’ve got an intelligent community or smart city as your starting point, like Quayside, and putting in the right governance structure for that. How do you then build that en masse? The other stream might be more incrementalist: how do we take the infrastructure that we have today and make some of that intelligent? Maybe it’s some lighting systems, or a few water mains where we could add sensors. Is it a case of seeing how pilot projects are working and then letting that inform the smart city vision, from-the-ground-up? Does some of the movement that we’re seeing in the marketplace inform the more long-term objectives that cities have?*

Anthea Foyer: It depends on what city you come from. Mississauga was only incorporated as a city in 1974, so we’re a young city without much legacy infrastructure, meaning we’ve been able to incorporate new technology as it comes along more easily. Peel Region, which Mississauga belongs to, has the largest publicly-owned telecom network (PSN). So we have our own internet. We have an IOT network across the whole city. We have 95 free Wi-Fi hotspots in all the buildings, all the community centres, all the libraries, in parks, and other public spaces. With older cities like Toronto, the challenges are that much greater because so much of the city is already built out.

Having said that, infrastructure projects can be expensive, and these technologies or systems are often untested — you don’t know if it will soon be out of date or even it’s the right thing for your city. So our model is to first do piloting within a community, inviting citizens into the process. Because if something doesn’t work we’ll know fairly quickly, rather than if we just went ahead and rolled it out across the whole city. And we take a different approach than usual with RFPs. We don’t say, “This is the answer to our problem; please replicate it.” We say that this is the challenge we need to address, but we don’t know what solution you’ll come back to us with. Hopefully that both gets us better answers and is more cost-effective.

Fahad Shuja (Coordinator, Ontario Good Roads Association, Municipal Alliance for Connected and Autonomous Vehicles in Ontario): One of the problems with the idea of “smart cities” is that the term has turned into a cliché. And there’s no true gauge on what a “smart city” really is. But when you talk specifically about autonomous vehicles, for example—

Nathan Muscat: People understand what that means, right?

Fahad Shuja: Well, today the term “smart city” is very loosely defined, if at all, which is not good. Compare that to the specifically defined vehicle automation standards by the Society of Automotive Engineers, SAE, that much of the world has been referencing when talking about autonomous vehicles. The SAE levels range from zero through



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five, each clearly defined. In levels zero, one, and two, the human driver is still involved; levels three, four, and five are where the vehicle has the ability to progressively take over control. At level four, the car can get you from point A to B, without the driver having to touch the steering wheel — this is where Tesla is trying to get. Level five is where the steering wheel is taken off.

The implications of AVs are huge, when you consider how much the car has shaped our cities in the past 100 years. They go beyond just the road and into the built environment.

Hearing you all speak, it would seem helpful to articulate a set of standard criterion that make it clear what the levels of “smartness” for a given vertical are. This way, rather than each municipality defining the term “smart city” subjectively, a gauge of sorts can be established that could serve as a very tangible, reasonable, self-administering but provincially-accepted “checklist” of “smartness”. Otherwise you can’t really achieve anything when the topic, “smart city” itself is not well defined.

Sanathan Kassiedass (Sr. Advisor, Innovation & New Mobility, Metrolinx): But autonomous vehicles are just one consumer-facing product, so you can wrap your head around it. When it comes to smart cities more broadly, I would pick up on the earlier point — did residents ask for this? As a baseline, I think we can say that people accept the internet, or connected networks, as a platform we can all leverage for different uses. Applied to the idea of smart cities, it can help make the city more efficient in how it’s run and the services it delivers. It’s about achieving goals. The customer gets the benefits without them necessarily realizing you’ve improved.

Nathan Muscat: Yes, I agree with you. If you ask someone tomorrow whether they would object to having their sewage monitored, I don’t think they would care. But the basics of that infrastructure are already there. Introducing sensors probably isn’t offensive to people. Where it becomes a bit more nebulous with the concept of a smart city is: where does it end? Has it begun? Apparently it *has* begun and it is evolved to the point where that becomes an issue.

Nasir Kenea: From the perspective of government and providing municipal services, broadly speaking, there is a responsibility to find ways to better serve the public. As a citizen, I’m just the recipient of that service; I might not necessarily care how I get it. And I probably don’t even look closely at trends, or what something might mean in 10 years. But government must understand the trajectory of what is happening today, as population grows and stresses on infrastructure increase, and constantly find ways to deliver those services more efficiently and sustainably.

How do the infrastructures we have today sustain and support the needs of the public and the community — whether it’s roads, water pipes, lights, whatever it might be? So we, as government, have a responsibility to find a way to keep up services with that pressure or stress on the system. Coming back to your point, infrastructure investment is very costly and they have life cycles. Sometimes you can’t afford it or maybe the timing isn’t right, and you’re better off waiting for the next iteration of replacement of the infrastructure with newer technology.



“One of the problems with the idea of “smart cities” is that the term has turned into a cliché. And there’s no true gauge on what a “smart city” really is. . . . The term “smart city” is very loosely defined, if at all, which is not good.”

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Pilot projects are a good approach, like the one the City of Markham is now doing with Bell. It allows us to learn how the system works or doesn’t work, and how it can be more efficient. The next question is, once we learn a number of things from this pilot, how do we scale it up? It’s a learning process for all of us at this stage. And we need to engage the public as well, so that at the end of the process we own it together. You might have a few loud voices at public consultation that dominate a planning discussion but that doesn’t mean the loudest voice is necessarily in the best interest of the broader community. As public and municipal officials we still have that responsibility to balance what the outcomes should be with best interest of the public in mind.

Erin Leslie (Smart Cities, City of Toronto): Picking up on Nasir’s comment on life cycles, one of the challenges cities now face in life cycle planning and budgeting is that the equipment that may have been good or desirable at the beginning of the planning process is outdated by the time you install it, because technology moves so quickly. And so municipalities are struggling to be nimble, effective and innovative at the same time.

And to respond to your question, Edona, about the best practice in overcoming some of these challenges in a smart city theme? A lot of municipalities are looking to create incubation-type labs, as we see in Markham and Mississauga. Start with small iterative ideas, build fast, and then demonstrate user experience so that we can really relate the project to the environment that they’re building in.

As for the topic of definition, “smart city” is a term many are getting a bit tired of using sometimes, because it has so many different connotations from private to public to citizen. Some people think smart city and they think of projects that lack resident input but benefit private organizations. But there are smart city examples that residents actually lead, through grassroots organizations, that do tremendous things. But they don’t get the exposure that private smart city projects achieve.

Ultimately, the “smart city” is about building innovation for residents, visitors and businesses that drives the benefit through community interaction and engagement to really understand, as Nasir said, all of the voices in the room as opposed to the louder voices. So we have to create a space where we’re enabling those smaller voices that want to be heard and want to be engaged, even if they’re not subject matter experts.

This is a first in a two part series of BLG’s Cities of the Future Roundtable. Visit blg.com to read future editions and stay up to date on industries trends and legal perspectives on issues shaping our world.

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