



Adam Giambrone:

Public Transit agencies should adopt to changing riders' behaviour

EPISODE #041

Adam Giambrone (00:00:00):

Transformation is difficult in anything. And that's true for employees and it's true for riders or just people living in the area, right? People get used to it. They're happy. I mean, unless there's a big problem where they're really making something, generally it works. And so part of this change management is you've got to figure out how you can push things aggressively. So you want, while at the same time, because again, we talk about people being the greatest strength or the greatest weakness. If you get it wrong, you may have the great technology. I think Uber found this and some of the micro transit they've been calibrating and there's still a lot of controversy around that. But how they going into cities and how they adapted and it worked for them in some areas and in other cities it didn't and sometimes they were shut out.

And this is more true of scooters. And so I think there's, what I found on especially things like micro transit is it can be really granular in terms of how they adapt. So you've got to figure out how it actually practically integrates. Well, it's not just growing in there. And so that's an example where fundamentally it comes back to the basic principles of engaging with people, working with them, change management, both for staff and riders. And that's a people thing and people want to feel included in part of the journey. And so I think a lot of these things where we've probably as an industry made mistakes at sometimes is around how you communicate, how you bring in this change and because otherwise you do face a backlog.

MIL (00:01:36):

Welcome to the Mobility Innovators Podcast.

Jaspal Singh (00:01:43):

Hello everyone.

Welcome to another episode of Mobility Innovators podcast. I'm your host, Jaspal Singh.

Mobility Innovator Podcast invites key innovator in the transportation and logistics sector to shape their experience and future forecasts. In this episode, we will be discussing role of transit in mega cities.

Our today guest has spent 20 plus years working in North America, Africa and the Middle East. He has held senior roles in all three regions. Currently, he is Infrastructure and Transportation Project Management lead at HDR Middle East.

Prior to this, he was the head of Land Mobility and Road Transportation at Neom, a new city in Saudi Arabia. His son is General Manager at Saudi Public Transit Company (SAPTCO) from 2018 to 2021. He also spent 7 years with the Toronto Transit Commission (TTC) including 5 years as the Commissioner and Chair of the TTC (Toronto Transit Commission) from 2003 to 2010.

I'm so happy to welcome Adam ga, infrastructure and Transportation project management lead at HDR Middle East. It's time to listen. El Hey. Hello Adam. So good to have a fellow Canadian on this podcast. You were trying to record it and finally we are doing it now.

Adam Giambrone (00:02:56):

Yeah, I know we've talked and talked often about lots of transit topics all around the world and it's good to actually focus in and have a specific check this time.

Jaspal Singh (00:03:06):

Oh great. And like I was mentioning to you when I was researching about your profile, I found it pretty impressive. And in fact, I am also somebody who not ever studied transit or mobility and came into this space and love it. And that's what I found when I was learning about your profile.

You did your bachelor in Archeology and Anthropology and African study from McGill and then you were working with Royal Ontario Museum for quite some time. Eventually you landed in Sudan for archeological mission and there you took a jump and moved from archeology to transportation and start working with this company called Khartoum Mowasalat Bus Company in Sudan. I'm very curious why this jump from archeology to mobility and I see your journey is pretty impressive so far. So we'd love to know more about how your journey so far in transit space.

Adam Giambrone (00:04:00):

Well, I grew up at the museum. I say that I attended classes, they had classes on Saturday, they did things in the summer. And so I attended classes for a long time there and sort of became one of those kids that was really involved in the museum. And I had a job at the museum. I mean nothing special. It was a summer job with teaching kids and things and helping clean up, but that really led to a connection through archeology and being given the opportunity to go on a Royal Ontario Museum mission to Sudan. And I tell the story, I won't bore your listeners now with it, but I think I was their last choice. I mean, at the time I was still a teenager and I remember asking about going and they were very nice, but said no. And then later came on and I think eight or nine people had to drop off the mission.

Adam Giambrone (00:04:50):

And so I got the opportunity to go and it was really a fantastic opportunity in Northern Sudan. Of course the country today has some real serious problems, the Civil War, but at the time, no security issues really in the north of Sudan. And they had a great mission excavating at the time, a Christian site, but throughout the north they had a series of excavations. And so that gave me my first chance to do archeology. But what I liked about archeology besides the research is it involved being with people a lot and you worked with people. That's when I started learning Arabic and jumped quickly to the cartoon opportunity. After I did the first one, I came back to Sudan to learn Arabic and stay in cartoon. I was with a colleague who was another archeologist, but they were all about my age going to the University of Cartoon.

Adam Giambrone (00:05:44):

And it gave me an opportunity. And in Sudan, as you probably know, is in many parts of Africa and actually Asian around the world, a lot of the transport sector is informal. So there are in the case of Sudan or at the time there was licenses given to a bus operator, but then they're free to provide services wherever. But it doesn't quite work out that way. And interestingly, Columbia University did a study of these informal transport and there is a network. And so in Sudan, this company, because it was through a connection, had a series of what they called Hala or mini buses that ran roots and the roots, well again, theoretically they're free anyone they've developed into very core roots. And in fact there's hand signals that they called them a commissioner, I think it comes from an old British term. But they will there and they'll call out a location and also give a hand signal.

Adam Giambrone (00:06:36):

You might not see it, so you then flagged down the bus. So they're running. So this company actually, although it wasn't required, ran a series of basically routes that were always the same, pretty much

running 20 hours a day. And it gave me an opportunity to sort of be thrown in there and learn bus operations different than what we would do in North America or perhaps elsewhere around the world, but still actually fundamentally the basics were there, right? You have to provide service, you have to be somewhat reliable, right? Or else people aren't going to choose something else. And so some of those really basic principles, even though no one sat me down and said, okay, here are the planning principles, here's our operation principles. Everybody there working on it knew them. They've learned instinctively, and that's how they operated the service. And it was incredibly reliable service. You could get anywhere. And I still, whenever, well up until the point where the civil war in Corona was when I was back in cartoon every year doing archeology, seeing friends all through my time at the Toronto Transit Commission. And still the system still works very well and you would know how to use it just from the hand gestures.

Jaspal Singh (00:07:50):

That's amazing. I mean, I think you share some very important point. One point which you mentioned is the transit is about people. And any business which is about people is like transit. You touch the life of people. And the second point you mentioned is it doesn't matter what kind of a bus you're using or service you're using, it has to be reliable, it has to be fast. And people should reach from Point A to Point B because even in Sudan they have those minibuses or informal transport, but they function very well and they made people very quickly

Adam Giambrone (00:08:21):

And they have, I mean there's 40,000 operators or there was at the time. And so it's a huge service and 85%, I mean we learned this afterwards, not at the time because I did some work on a bus rapid transit system for Sudan with the interim government that came in after the revolution. And we found 85% of all trips were made on public transit, which is incredibly high number, not unusual for other cities similar to cartoon, but still compared to North America or Europe.

Jaspal Singh (00:08:54):

We always give example of Hong Kong, which is near saving a very high percentage of public transfer mode. But you rightly mentioned some of the city, we don't consider them, but a lot of people rely on the public transit and it's important. Now I want to discuss your last adventure, which was in Saudi Arabia. Now because it's a city which everybody's very excited about because it's count as a future city, city of the future where they are implementing a lot of technology, a lot of work, and you had two crucial role. You were managing head of mobility and then you were head of road transportation. So would love to know more about your role. What were you doing in Neom and how do you see this whole concept about building this city or future? What is the overall vision of this project, how they want to change the city landscape?

Adam Giambrone (00:09:47):

Well, first of all, so Neom is much more than a city. It's 26,000 square kilometers about the size of Belgium. And what it's trying to do is be that part of that transformational part of Saudi Arabia where it operates under a separate legal code. Then from the rest of Saudi, easy for business to operate, people to feel comfortable coming from all over the world to do business in the Middle East, close to Europe, middle East always serves that split between Asia and Europe and Africa. Very easy. And Neom is supposed to make it easy and it's focused. They've made some principles, long-term being sustainable, focused on technology and livability. So you found this interesting mix of taking new ideas or trying to

try out new concepts, but then also falling back on the basics that you need a city that works for people today. And so what was interesting for me through this journey in transportation is we started as the mobility people both working with a lot of these challenging areas like the line, which is the city,

Adam Giambrone (00:10:55):

170 kilometers long, 200 meters wide, about 500 meters high, and how do you provide transport? And again, there's no cars in the city and part of the line because there's no place for them. And lurking through, we evaluated things like Hyperloop, EV tolls, which are all these future technologies that may have a role in the future, but today, and even in the NEOM of say 2030, they're still not going to be ready for a large-scale deployment. And so what we ended up falling back on interestingly is some tried and tested modes that have been updated. So High Speed Rail Metro, interesting things. Automated Metro, although not that new, I guess the first ones go back to the 1970s in France, but they had this concept of how we were going to adapt these traditional modes into a building. And one of the biggest challenges was not horizontal travel but vertical.

Adam Giambrone (00:11:54):

So if you're moving down and do you really want to go down half a kilometer, get on a metro travel three kilometers or a short trip and then up the elevators? So there were a lot of challenges both with logistics, you have to get food and people's packages to this building. And so a lot of the traditional modes, everything being employed, micro transit, everything. For example, even we were thinking of Funiculars going up at angular planes and really this challenge on taking these traditional modes and adapting them to a new use, but it was not just the line. There was also the interesting thing about Neon is it had these regions, so I won't go through all of them with you, but you think about Octagon, which was a port and had a floating city. So one of the fun things was I've done a lot with LRT.

Adam Giambrone (00:12:43):

Well now the question was they originally thought about, okay, they're all going to be autonomous pods, but if you have almost 95% modal share towards public transit, other than walk-in as a mechanized transport, you can't use mobility like these pods and as I used to call them. So these pods have four wheels, they're moving around, so they're kind of like either a taxi or if they're bigger, they're a bus. And at the end of the day, you just can't have taxis, can't provide them. I think we had a one point needing 9,000 people per hour per direction. So we fell back, we went through this whole long arch of all the technology and fell back on an LRT system. And then the fun thing about this was we wanted to put it, they have a floating platform. Well how do you get LRT? I mean, normally railroad tracks don't like to move up and down with the water.

Adam Giambrone (00:13:32):

But I remember talking to my colleagues in Stockholm who had worked on Light Rail and they brought up some interesting bridges in the US and Seattle that actually has a floating LRT bridges that uses the same technology as they use for buildings for earthquakes. So it can move, I mean it doesn't move that much, but it has to be able to move. And so just thinking about how we, so taking a relatively older or established technology and figuring out how to do it fully with batteries and also on a floating platform. So there were lots of examples like NEOM of that happening where we actually had this opportunity to really rethink some of the traditional modes. And my experience through UITP, for example, I remember very clearly the Tino, which is the mountain region,

Adam Giambrone (00:14:18):

Had to get people up 2,500 where the Asian winter games will occur in 2029. So we had to get people from a train station, put them on a bus for an hour and a half, this was the first thought, put them up on a funicular and then on a gondola, well Leon in France, line CI think it is, is a unique Alstom and stead combination train, which goes at 80 kilometer or up to 80 kilometers in a traditional metro setting. Then the old line C had a funicular incorporated. So this train goes up, comes down with a cog wheel, goes up and then can continue on way. So it was like one of those examples where you'd seen something in the past that's only, this might be the only one that was very applicable for consideration in a place like Geo where we had to get from a metro station for 60-70 kilometers up a mountain and then you want to continue. So there was sort of that interesting mail of totally new and then the very traditional technologies that are employed.

Jaspal Singh (00:15:18):

Yeah, it sounds like your time was quite fun at NEOM because having new challenges and going back to the drawing board, experiencing what is other cities around the world are doing and bringing those best example to one place. And I was not aware that NEOM is size of Belgium, which is huge. I mean Belgium is not a small country.

Adam Giambrone (00:15:42):

No, but interestingly, the other end, it's just a random statistic, I looked it up, but Belgium has I think 116,000 kilometers of roads. We had about 4,500 kilometers. We were going to add some for residential areas. So I think we probably would end up somewhere with a network around 7,000, very different profiles. Obviously, Belgium, 95% of NEOM is kept in its natural desert state. And that's actually where most of the mobility, I call it revolution came. So yeah, technology can play around, but just by planning the communities, I mean this is classic urban planning where you're going to have dense communities where even in 45 degrees maybe you're using the shadows so you can walk a short distance cooling and making sure those communities were connected by public transit. I mean these are not, the implementation may be radical, the ideas are not, they're very go back well over a century.

Adam Giambrone (00:16:38):

But it was interesting how you take those very traditional notions of urban planning, meld them with a mission to sort of, and a challenging climate where summers are 45 degrees and try to make them work as a comprehensive public transit mode. And then interestingly, my role shifted initially to drafting the legislation. So NEOM will be in autonomous region, and so it means it'll have its own transportation act or legislation and then thinking about how you build in issues around autonomous vehicles, how you give the government in that case the power to ban certain fuels like fossil fuels when the time is right and ban or severely limit or put charges or all the legislation that you need in order to reduce or eliminate private car use. And so this whole legislative package was then the next thing. And so it's an interesting where you take the planning, the review of technology, the thinking of that and having to bring in people who are experts and then melding it with a legislative framework that supports all that. Because one without the other, and this is what we see in North America where build these large subdivisions and then somebody comes by and says, well, what about public transit? Well, it's very hard when you've got these. And so that whole thing maybe in fact, that's one of the unique inspirations, although other cities like Singapore are well known for planning the urban transport, linking it with transportation and lots of other cities too. But that may be in a sense from ground zero up doing it in that way. So that might be one of the unique elements of neo.

Jaspal Singh (00:18:17):

Oh, that's amazing. And you rightly mentioned about the solution is not these individualized individual ports or small cars. The solution is going back to the basic these LRT solution or railways or having buses, and now we have bi articulated buses and bigger buses. So the ultimate solution is going back to the basic, we can still innovate, but it doesn't mean that traditional mode will not sustain or survive. I think they have their own rule.

Adam Giambrone (00:18:46):

Yeah, I mean railroads are over 200 years old. I mean obviously been changed dramatically from the early 19th century, but the principles are still there. And I suspect, although I haven't done my history, all my history reading, but I suspect some of the same planning decisions they were making then still apply today. And again, even though they're subsidized, you do want to try to make a most efficient transportation system. You can both for the riders but also for the government from a budget perspective. So yeah, those two principles I think have probably remained the same for a while.

Jaspal Singh (00:19:18):

Yeah, I don't know, history repeat itself. So your archeology and mobility is the best combination. Now you mentioned a little bit about the line and line is one of the exciting project I would say in NEOM or I would say the most advertised or most attractive project in nim. You mentioned about Okta gun and other project, and I know there are many other things that are happening in, but The LINE is getting a lot of attention from public because it's very radical building a city in a line. And like you mentioned, it's a 200 meter wide, 500 meter long wall and then people will living in that line. Although now the cutting down the size earlier they were planning 170 kilometer like you mentioned, but now I think I read some news which saying they want to reduce the size for time being and then expand it phase.

Jaspal Singh (00:20:06):

What do you think about this whole project?

Adam Giambrone (00:20:10):

Look, it's incredibly ambitious, right? And I think in this you see often in the Middle East, and it is actually is I think an interesting trait where the goal has been you push as hard as you can even maybe in the back of your mind if you know that they're somewhat unrealistic targets. What the goal is push as hard as you can knowing that that way you'll get more than say the normal build. But being honest perhaps with yourself, and again, I don't speak to all of the decision makers, but I suspect being somewhat honest because they've been around the block, they've been there for a while that you know, probably won't achieve that. So yeah, so what they've seen is they started with a very ambitious target that had a lot of challenges for constructability. At one point you would've needed something like 400,000 construction workers working at once and how do you house them all?

Adam Giambrone (00:21:02):

Feed them all. So yeah, they pushed off the timelines for it. But today, I mean the plan essentially stays the same. It's just the implementation. This is the story I think of every transport or almost everybody's transport or every transport professional's lives is how to keep projects being realistic, being honest with the public about the timeline and budget, but also recognizing that there are unanticipated things that come up. And even the best plan project, the best executed often runs into various challenges be supply chain issues with constructability or something. And NEOM is no different. So if you show up

there today, you'll see a lot of the base infrastructure going in water, electrical because there were very few people who lived in this area. So the networks were not designed to deal with a population. I guess their new projections are up to 9 million by 2050, so still years out, but they're building a network, it's hard to go back and upgrade things. If you can plan for it, that's better. So they relay all that basic infrastructure that will then allow the support for future development.

Jaspal Singh (00:22:11):

And you rightly mentioned, you always need to dream big. If you start dreaming small, then there is no ambition. You have to dream big and then try to reach for it and there will be some failure, there will be some delay, but ultimately the goal is to reach there. In fact, I visited the new city, Nusantara in Indonesia where they're building a new capital city and it's look quite ambitious project, but slowly bit by bit they're building it and let's see how things will be in next 30-40 years

Adam Giambrone (00:22:41):

Exactly. It had some delays too, but I think that's, I mean sadly, or just being realistic, almost every project suffers delays and maybe it calls on us as transport professionals to be a little bit more realistic or at least better position people for the reality of the fact that nine out of 10 there be or something, there will be some delays,

Jaspal Singh (00:23:03):

There will be some delay. Now you work in Middle East for quite some time and you spent a lot of time, you mentioned in Sudan as well as in South Arabia, you were a General Manager for SAPTCO, which is one of the largest parts operator there. And a lot of people question like Middle East is earlier considered as oil countries, so they were exporting oil. Oil, it's very cheap. Everybody has a car, but there is a lot of movement happening in public transport. So how do you see the public transport and mobility spaces changing in the region in term of the development, a lot of cities are adopting, like Dubai is a biggest example now. Dubai has good metro system and buses and they're expanding it and Southeast is building ambitious project in Riyadh and all. So how do you see the landscape chain and also how do you see the technology is playing a role? Because when you visit these cities now you see they're investing a lot in technology. So in next one, two decade, what can people expect?

Adam Giambrone (00:24:05):

Well, I think the region is changing very quickly and it's growing. I think the region, we're speaking about a number of countries, so it's hard to generalize, but most of them understand that there is a future at some point with less reliance on oil and gas and whether that's 20 years, which might be ambitious, whether it's 50 years, which might be a little bit of unambitious, but somewhere in that range they recognize that this, and Dubai is a classic example. I mean Dubai has almost no petroleum revenue

Adam Giambrone (00:24:36):

Now the Emirates, the other ones have more revenues from oil and gas, but they started early and I think a lot of cities are trying to make that push. So they've seen the need to use, they've got a decent revenue stream now it's an opportunity to invest. And public transit is only one. I mean they're trying to diversify economies, but transportation is one of the key things. And of course as we know, when you have a small city, sure everyone pretty much can drive, maybe have taxis or some very small public transit generally kind of works as you approach cities like Riyadh, which is now or close to nine coming on 9 million people. Even if you have no other concerns about environment or you don't really care

about anything else, just practically, you just can't build enough express base. And I know in Toronto we used to say the young line, which is the busiest metro line we have in Toronto, replaces something like 28 lines of or 28 lanes of highway.

Adam Giambrone (00:25:34):

So even if again you don't care, you're just going to, and of course that's 28 lanes going and you have 20, so you'd have a 56 lane highway and of course road ops will tell you that will never work and then you'd have to park all the cars anyway. So I think cities like Riyadh, which have embarked and are about to open the single largest build in public transit in the world. So I think they issued a contract for over \$23 billion to build. I think it's somewhere around 86 stations, like 170 kilometers plus my numbers are going to be plus or minus a few there, but it's big. And yet just using that as one example, Riyadh is a region of 3,500 square kilometers. So it is like sort of Mexico City. Mexico City has the second largest metro in North America, next to New York and it's got some good capacity, it still only serves as one third of the metropolitan area.

Adam Giambrone (00:26:29):

So Riyadh, again, BRT, they need to think about it and other things. So obviously Doha had the World Cup that they had to get a metro up and running in a system. Dubai, we talked about Bahrain, Kuwait both have plans, Cairo and new Cairo and Cairo itself has a metro. All of these cities and things like Amman and Jordan where they have a BRT being realistic, I think they're realizing that for both practical reasons and other objectives, maybe environmental and city building, that they need to develop public transit. So a lot of money is going in there now. Look, it's like places in North America and Europe that designed it for the car. Transforming them is very difficult. And so hence I think places like Neon where they say, well look what if we can start fresh? Any things happen, put everything that would've happened in the past and it's a lot easier.

Adam Giambrone (00:27:23):

But despite that, all of these cities are investing heavily in public transit, to be honest, I think everyone would acknowledge they have a long way to go. And then what Dubai learned is you can't just build public transit, you have to come back. And actually I was at UITP in Dubai over 12 or 13 years ago when they were opening it, and I remember trying to get to the metro stop just to use it to get to the UITP Congress and I had to climb over a fence and it was hot. And to be honest with you, I took taxis the rest of the time, but then when over the last couple of years when you go back to Dubai, you see it very differently and they invested heavily in pedestrianism and walkability. And so I think that's also the next revolution on transport in the region. Sure, you put in the big infrastructure and now you have to come back and do some of those retrofits if you will, to make it practical to actually use.

Jaspal Singh (00:28:14):

Yeah, no, I mean a lot of people don't believe that I was there in the while last couple of months back and it's a walkable city now. The weather is a problem. Afternoon, you cannot walk. But if the climate is good, especially during wintertime, everybody's on the road, the people sit and people walk and like you mentioned, they are focusing now on pedestrianization walking, last mile connectivity. Scooters are heavily used, their bicycles are used, same Riyadh is looking to do. I think the challenge is a lot of people tell me, oh, it's very hot, but I said, okay, Toronto is very cold to walk, but still people walk so it doesn't make any difference.

Adam Giambrone (00:28:55):

You see this in a lot of cities. I mean where cartoon being a good example, I mean cartoon hits 45 degrees in the summer and you still have 85% modal split. Now that's predominantly frankly economic just reality. But those basic fundamentals, I mean if you put it in place, and again maybe it's shades things really basic concepts don't make it perfectly comfortable. 45 degrees is still warm in the shade, let's be frank. But it does, if you're getting on an air conditioned vehicle, you have a stop that's close to you, you can probably manage it. And so that's why being just realistic and practical about it, it's interesting to watch these evolve in the region

Jaspal Singh (00:29:38):

And you don't need to use one more a hundred percent of the time. And that's what we tell people, don't use car a hundred percent time. So it's similarly, you don't need to take train a hundred percent of the time, but it's always good to mix use. And like you mentioned, some of these cities are becoming so big, it's impossible. I mean to travel by car in the city, you cannot have 28 lanes.

Now you are Canadian by birth and by heart. So that's the first place important to you. And I think Harum was a launching pad for you in mobility, but TTC was the scale up or I would say which help you to really grow up in mobility. And you were at TTC for seven years as a senior position, also as a chair of TTC. What were some of the biggest challenge you faced when you were the chair of TTC and what were your learning when you worked there? Because like I said, TTC actually really helped to scale up your knowledge and build your profile in mobility.

Adam Giambrone (00:30:38):

Look, I mean I became the chair and head of the Toronto Transit Commission, which is the multimodal operator in Toronto, operating the metro transit and streetcar and buses as well as the adaptive transit for people with mobility challenges in 2003. I remember at the time it suffered from a lot of the challenges that I think a lot of transit agencies go through, period depends. They go up and down and one was there was underinvestment in the state of good repair. There was I think both an underinvestment in service but also an attitude because to deliver good service, you have to have obviously buses, you have to have some of those, the core elements, but you also have to have the right attitude of employees in terms of how you deliver service because you can deliver it well with buses or you can deliver it poorly.

Adam Giambrone (00:31:34):

I mean it's a little easier with metro and things where you have your dedicated right of way. But the whole concept, and I think the agency at the time had been set with budget cuts and then was sort of hunkered down and part of this was the attitudinal shift around being able to do things. And it didn't always mean just huge investments, right? Everybody likes to talk about new subway lines, new metro lines, LRT, but at the heart of it is some of the basic fundamentals, right? Getting bus service working at the heart of it no matter in Toronto's case and other cities are different with bigger metro networks, but Toronto is unique in this that 70% of the surface transit riders at the time transferred to one of the core metro lines. So without going into tons of details, basically Toronto uses a core network of these metro lines that then are fed by buses.

Adam Giambrone (00:32:26):

And these buses at the time, some of these would carry 30,000 - 40,000 people a day. And in fact, one of the tram lines maxed out somewhere a number of years ago before covid and at over 80,000 people,

the King Street car. So these are workhorses and they're feeding the metro lights so you get very high peak capacity. So on the young line at the time you would be looking at over 30,000 people per hour per direction in the peak hour. So you had this network but it was tired, it had had I think morale issues. And so partly was taking it looking for those big investments so that you can't take credit for that as a transit professional other than making the case and pushing for and communicating and governments coming to the table with more money. And so at the TTC, that was a lot of what was the focus on introducing at the time, and this was years ago, next vehicle information, customer facing elements like that that could be done while at the same time renewing the fleet, new street cars were bought, new metro cars ordered, updating the buses to being the largest at the time hybrid fleet I think in North America and then transitioning to the electric and then keeping going.

Adam Giambrone (00:33:42):

And we also of course tried to change the shift from metro only. Of course metro has its role to light rail and really on argument that not only could you build five or six times as much light rail for every dollar that you had because it's cheaper, but also in certain communities and a lot of Toronto has a dense urban core and then a suburban area. You can actually get the type of development you probably don't want to build or neighborhoods don't always want 50-stories towers along the road, but eight to 10-stories with a good urban light rail system work. So there was the network of light rail that was begun and is under construction today. Again, Bette was some delays in construction, but that transformed I think some of the thinking in the regions and neighboring municipalities like Mississauga for example, also adopted in further afield. So I think those were the focuses of my time at the Toronto Transit Commission.

Jaspal Singh (00:34:44):

I'm curious how old you were at that time when you took over the chair position?

Adam Giambrone (00:34:48):

So I was appointed at 26 to the TTC, and I think if my math going on the years, I think I would've become chair and head of the TTC at 28. Yeah, no, and it also was a very good learning example on a professional. I mean I've taken a lot of lessons from 360 reviews because your management teams were a good 20 to 30 years older than me. And so there was a lot of that figuring out both the transit stuff but also how to lead at the time of 14,000 persons organization and deal with all the challenges that come up every day on public transit, which I guess will be recognizable to any transit professional around the world.

Jaspal Singh (00:35:36):

No, that's impressive. Like I said, the more I learn about you, the more I feel really inspiration story and quite inspiring. I would say journey so far in term of now you're working globally, you are not, I mean you're based in Saudi Arabia, but you're seeing the system around the world and one of the key challenge, in fact what you mentioned people were facing in 2003 is also they're facing now, the ridership is a little lower, the cost is rising state of good repair is a challenge. You need to invest money, you want to expand the system, but at the same time you need to maintain what you want to do. The morale is a little bit down because of when the things are not going well, you doesn't feel happy. So it's the same story. Now again, I think every transit agency is facing some kind of a challenge. What kind of a challenge you want to share with transit agencies to navigate this time period? Because like you said,

there is always a boom and bus period, so I'm pretty sure there will be a boom period soon. But during this bus period, what kind of a lesson you want to share because you went through that phase earlier?

Adam Giambrone (00:36:45):

I might challenge your question a little bit in the sense that thinking around the world, there are large places around the world which are doing heavy investment in transit. So you think of China, which continues to invest massively. And I visit Beijing and Shanghai years ago, but I know there's over a hundred cities in China with over a million people. And so in most of them, I can say all of them have a public transit. I mean they've moved towards the electrification of their networks, but also metro. And so you think of, and you mentioned the new city in Indonesia, Cairo building new capitals, there's investments all around the world. So I don't know, it's interesting, of course traditionally been focused in North America, the Middle East has this boom on. In fact, I mean percentage wise, I think transit ridership going through the roof, I mean it's a mathematical issue though.

Adam Giambrone (00:37:37):

You have a very small case. So any growth, but no, I mean for some of the longer term networks, the ones that have been around for say a hundred years in Europe, north America and elsewhere, there is this challenge where you have these at the same time major shifts in how people live, right? I mean I think in these legacy cities, I don't think we fully adapted to the fact that yeah, there's still a rush hour, but whereas before we would pull off a lot of service. In a place like Toronto, you have people working four hour shifts in the morning in some cases and four hours a split shift as we called them because we needed really, we had two peaks. The afternoon peak was a little less, but still exists.

Adam Giambrone (00:38:18):

I mean you can still see the blips, but you also have this ongoing ridership and interestingly weekend, which for us used to be as we counted, two days were worth one day in terms of the numbers. Now that's very different, but yet I think, and again we're talking, we're generalizing across large numbers of transit agencies for the most part, they're still focused on the same sort of service delivery and mentality. So I think part of the challenges are here is how does this adapt to the new realities? And it's still, we're a few years out from the pandemic, we will see how trends come and go. But I think the focus has to get back on really thinking about where the riders are, how the systems need to change, and which could be, I mean you're always constrained by your peak hour.

Adam Giambrone (00:39:08):

So if you have a smaller peak hour but greater ridership spread out, in some ways that's the perfect scenario. So there may be some real opportunities there, but I also think it's time transit agencies have to adapt and talk things like AI, thinking about how you use them. I remember in cartoon we were doing some also work with the national railways and just learning the ability between the use of drones, AI, being able to assess infrastructure and using it for bridges too, where the cameras, the AI, it's not perfect yet, but it's allowing you to, what would've taken us, I think in that case it was 5,000 kilometers of rail being able to do it in about a month and most of the delays of that month, which will change, were on the computer running, so it collects all the data and it's such a massive program.

Adam Giambrone (00:40:01):

It literally has to run for three weeks of computational time. So that obviously will change this. Computers continue to develop. So all of this, I think we're always struggling and probably this is true in

other industries, I don't know, but where you're trying to keep up with everything that's going on, and I think probably in public transit we need to do a better job of really embracing testing some of this change. Again, it's going back to you have the same fundamental modes but it major way of updating it. And that's I think the challenge that's going. But when it comes back to it, and I don't really care whether it's an autonomous vehicle, whether it's an EV toll or they flying vehicle, they're still going to come back to reliability, predictability and travel time and comfort to a greater extent. And then cost, I mean all those things in that order generally are what's defined transportation for the last couple hundred years and I suspect will going forward regardless of how it looks.

Jaspal Singh (00:41:06):

Yeah, no, I think your point is very important is the travel behavior is changing and we need to adopt to that new change rather than just doing what we were doing last 20-40 years. And weekends are changing, people are more out because you don't go out during the day, although a lot of offices are now calling employee back to their office back in person, but still we will never have a hundred percent. So in fact, a lot of cities say that riders are back but not the ridership. So it means the people who are using transit are back, but they're not using the transit the same way. So they have changed the style they are using. And your point about, or we should not have this misconception that buying more buses or beautiful buses or electric buses will bring ridership. The ridership will come by reliability, comfort and punctuality and like you mentioned more connectivity. So that's the main,

Adam Giambrone (00:42:03):

I'll give you one example on bus technology. If you go back, and I know because I extended bus 1982 as GM buses back in 2008 and they were already well over 30 years old and we extended it for a few years. But part of the issue is if you took a bus from the 1970s and the cost escalated at inflation, that is now half the cost of a current bus. And partly that's because different commodities raise at different rates, but a lot of it is that bus from 1982 had no GPS had no cameras, wasn't air conditioned, didn't have the automatic braking in some of the new autonomous level four that's beginning to introduce, had a much dirtier engine system. And so it's interesting on those things. So we do find that things like your bus costs, again, not obviously inflation, but they go well above that.

Adam Giambrone (00:42:56):

Now having said that, the service a bus today offers you is much better and the service and some of them now have WiFi on board, but all of those things cost money. And it's probably another way for the industry as autonomous vehicles come as 85 or 90% of a budget is labor. So if you eliminated drivers, but my experience from these things is that it then shifts. So that bus that even if it doesn't have a driver now it needs a WiFi technician, it's got to have a technician, all those different one now no longer has someone carrying cash to empty it because it's a tap, but now you have IT people to manage.

Adam Giambrone (00:43:37):

It making more than the people who were carrying the cash out of the vehicle in the old days. I don't know, these are all big. Every industry does this like labor force projections. My gut tells me is that you're going to have similar numbers of people, but your service, what you come to expect will actually be higher than again what you would've expected either today or going back. So there are a lot of these changes in the industry and of course we have to adapt to them because you have this technician or this driver, well now you need a computer technician. And so they may be the same person maybe, but they

are a very different profile so that it's, you may end up with the same number of employees, but I suspect the profile will be very different.

Jaspal Singh (00:44:21):

Yeah, no, that's what I experienced. So in China, there are a lot of city now that have the autonomous vehicle and there was no driver. And I said how they monitor. So they have people in the control center, so one person monitor four to five vehicles, you don't have a one dedicated to one, but then you have three shifts and then you have technician, you have people who are taking care of, like you mentioned, technology, cybersecurity, GPS. There are different kind of profile you have, but the number is same.

Adam Giambrone (00:44:52):

And for example, for your propulsion, so when you're moving it on gas or diesel, you've got a bunch of workers extracting it, shipping you the diesel. Well, now you may be even producing some of that power locally, but now again you have the technicians on the solar panels or the battery retrofits when they have to come in, all those different things. And so this is why this is interesting on how the industry will transition. Again, new people, same people retrained, but that will be I think a fundamental shift.

Jaspal Singh (00:45:26):

Yeah, we will see a lot of shift in the society in coming year. One topic I want to discuss with you, and again it's again want to take some knowledge from your experience. So one of the biggest challenge now Canadian cities are facing is housing. And there is a lot of issue with the housing and Toronto is lucky in that sense because they were early to develop DOD mixed development, both residential and commercial. So people are living in the city, whereas in us, most of the downtowns are commercial. So now it's empty and at the same time they're facing this housing challenges. So how do you think that this urban development in Toronto help TTC or TTC help to do the urban development in Toronto? So how they help each other, the transit and urban development, and what are your thought about the future of transit-oriented development? How city should think about it?

Adam Giambrone (00:46:24):

So one thing we didn't mention is I worked in New York City for the city of New York as LRT and Streetcar. And what was always interesting in the US context is they talk a lot about transit oriented development. Now that happens a little bit that conversation in Europe and Asia and Canada, but often times we never really, to be honest with you, use the term transit-oriented development. It was just sort of part of how the city had developed. Now that's oversimplification. There are large parts of the suburban areas which are very traditional suburban areas, but if you think in the downtown core where they built the city took over the Toronto Transit Commission in 1921 in order to provide better service. And one of the first thing they did is redid the streetcar lines, get them operating new fleet, all that. But the city really, if you actually look at how the city developed, it did develop along street car lines or the late 19th century, early 20th century.

Adam Giambrone (00:47:23):

And then that picked up with the subway lines, which essentially followed the two busiest street car lines in. Again, oversimplifying it a little bit here. And then when you look at the satellite, and you could do this for some of the early aerial photos from the twenties all the way up today, I mean basically a lot of the development, the higher density development followed these core lines now, not perfectly. And there's lots of parts where unfortunately new subway construction has never didn't provide high density

that they're hoping for and there's lots of potential to go back and retrofit. But there really was that focus. And in Toronto's case specifically was the use of buses to feed the subway lines, which is not unique. I mean this is not a brilliant concept, but if you look at many cities and Toronto has a nice grid system laid down, so it makes it easy for buses to operate.

Adam Giambrone (00:48:15):

One bus goes north, one goes south, it's very easy to understand, but it does more so than a lot of other cities in terms of using surface transit to feed the subways. Now the drawback, and people will tell you this in Toronto, is that means they may be stuck on a bus for half an hour before they get to a metro and people would rather be on a metro or LRT than a bus. But it does create this opportunity and it also creates a grid that's already established. So what you're seeing over the last 20 years is a really going back into traditional neighborhoods and densifying and those are already next to either a subway or a very high frequency bus route. So it means that more reliance actually ironically, will come on in buses in Toronto as the people move. Again, if you're a 15 to 20 minute walk from a metro stop, that's not bad.

Adam Giambrone (00:49:05):

On a beautiful day, our evidence tells us that people are usually not much willing to walk much more than five or 800 kilometers, so say 10 minutes. And so they're going to be on a bus. So even though they're relatively close, if you look on a map, you see the line, you say, but actually they're going to rely on a bus to get them to that subway station. So it will mean that we need to do better jobs. And this is true New York's going through this again, the other CI worked in and trying to increase bus only lanes using technology for enforcement, those sort of things are going to be critical to allow transit to support the density that's coming. Really no other alternative.

Jaspal Singh (00:49:46):

And I think both need each other. The transit need density and density need transit. So it's important. A lot of city need to rethink about the model they were using earlier, the suburban area. But I think in future, if we need to build more housing, we have to think about this vertical growth and then build transit around it. Like you mentioned about nim, that's what they're thinking.

Adam Giambrone (00:50:10):

But we probably do in many cases, have to get smarter about how we do this. Now there's great models like in Hong Kong where they've been able, they own the land, they can do a combination, but in a lot of with the cost of transit that just continues to go up for the construction of it, we probably need to look to places like Spain, which have kind of figured out how to, and now every area of the geology, labor rates, it's sometimes very hard to do that. But I don't think you just dismiss that saying, well, okay, it's all different over there because there we may not always need that. We've done the most of our subway construction in the last 20 years in Toronto has basically been is well over capacity. They're going to areas that are relatively low density. Now they will densify, but we don't need to necessarily to run the same size trains all the time or design the system. I mean, once you have it, running a five or six car train is not really, there's not much difference. But in thinking about how we build the stations, and again Toronto, that was the discussion around light rail as an alternative. But there are many things between light rail and subway, all these different sort of in-between and versions of that may need to be a little bit more, we need more tools in our tool chest in order to meet the demand at a reasonable cost to construct, but also to maintain.

Jaspal Singh (00:51:27):

Yeah, and you Riley mentioned we need more tool or more tools in our chest. So in fact, one of the emerging opportunities, autonomous vehicle, and I tried the autonomous vehicle in last one year in San Francisco, in Seoul, in Beijing, in Ganja. And I must say in some of the city, the technology is pretty impressive. It's quite developed. If you try Waymo in San Francisco, you never feel any difference. You feel like a human driver. And in Beijing, in Ganja, they're doing a commercial operation. So I think autonomous vehicle will be there sooner or later. I think next 10 year will be game changer, but a lot of cities are not ready and a lot of cities are not yet thinking about it. And like you mentioned, we need to really think about the buses will be feed to the rail and we need to provide. So how do you see urban mobility evolving in the next decades, especially for this rise of autonomous vehicle and how CT should be ready for it?

Adam Giambrone (00:52:26):

Well, again, I think the basics will come again. The first time I got on an autonomous bus, which was at a UITP event, this was pretty cool. It moved, it was. But the 50th time I get on that same bus, it's just the bus, right? I mean, at the end of the day, the same things. I've got a meeting to get to, I've got my job again. It's kind of cool when you don't see a driver, but the basics will still be there. It'll be a rubber tired vehicle moving along. Now hopefully it's got a dedicated right of way. Maybe they're using some smaller vehicles in certain contexts. But what we found in transit is most lines don't just have a standard pattern. They have a peak. So even the smaller vehicles, most agencies don't do that because if you need a bigger vehicle for one hour a day, well, you're not going to swap out and maintain a fleet for that one hour.

Adam Giambrone (00:53:18):

And the reality is once you're running it, and maybe if it's electric, it's even easier today. And especially if you take out labor costs, whether it's 12 meters, six meters or 18 meters, the costs are not that hugely different after you've purchased the vehicle. And so I suspect some of those basics continue in terms of, again, and we've seen this with autonomous vehicles, if you don't put them in dedicated rights of way, I mean maybe they're a little bit more efficient, but until you get this full training or connected vehicles, all of them, and I think, again, I'm not an expert in this, but I feel like the idea that we're all going to have every car will be autonomous. I think we are decades out until we get to that stage, not until we're using them. And I think actually interestingly, you may see more things on light rail, right? Because there you have a dedicated right of way. So not totally exclusive, but it should theoretically be easier to run an automated vehicle in that context than it would predictable stops than it is with buses. So I think those will happen. They will begin to come in.

In fact, some of them it's level four autonomous is an interesting, well, even level three because that gives you drivers automatic braking, some steering assists, those things that are safety oriented that cars already have. It hasn't really fully transitioned into bus technology, which could be very useful for the same reasons, maybe operations in a bus garage. So you don't need people to move the buses around in those things. So once you get to level three and level four, which is sort of like drone, and you talked about one where you've still got somebody there, I look, and again, just from what I read, and I suspect we are a few decades away from a fully autonomous, absolutely autonomous fleet, but I think where the really interesting things are, and probably the most increased percentage wise for safety is level three and moving to these drone type operations, especially for systems like BRT, right?

Again, where you have dedicated right of way, I think those opportunities are huge. And I think what it means is because labor costs are 85 or 90%, maybe our biggest barrier to adding more ServiceNow,

sometimes it's capital buying the buses, but often it's of course the operation. So if we're able to basically take the same number of staff and do more, it means we're able to drive even better service into these neighborhoods for essentially the same amount of money. So I think that that's the exciting part of where autonomous vehicles are going is that it may allow us to offer new services that were previously just not economically feasible.

Jaspal Singh (00:56:02):

Especially like you mentioned, it can be more service in suburb area or where there is low density and once you purchase a vehicle, the operation cost doesn't make huge difference. So then you can run the service more frequently and more reliable. And I agree with you in some of the city, they are actually piloting doing this autonomous vehicle operation in Europe, in Sweden, some of the cities are experimenting with this. And in fact, UITP is doing one project on E-BRT. So idea is how to use autonomous vehicle for BRT operation because you have a dedicated lane. So it's just like a rail system, like automated rail system. If you have a dedicated lane, why can't you use autonomous technology there?

Adam Giambrone (00:56:46):

I also suspect that when we talk about autonomous, but there are also all these other systems, like whether we are able to do better bus maintenance, right? Because we have not autonomous systems, automated systems that allow the buses. Again, this has been true for 10 or 15 years where you're able to sort of the plug and play, right? So before if you had a problem with an air conditioning unit, send it over to be reflected. Well now you pull out the air conditioning unit again, this is not that new anymore. You send the air conditioning unit for refurbishment, put in a new one and the bus goes out. So whereas before you would've had, say before 15 years ago, you would've had a bus out for three or four hours minimum. If someone fixed the AC unit, now it's 15 minutes in and out, the bus goes back to service and somebody else goes and works on the AC unit.

Adam Giambrone (00:57:34):

And that's true on the, again, not bat new, but things like that. An ability to actually use systems to do predictive failures like how we can improve that. Analyze tires, rail, all of those things. Again, they're coming and they're all using or increasingly using automated technology, right? Computers. And so you can do a lot of that, which should allow you to more efficiently deploy your maintenance resources and do it safely. And that again, because cost comes at the, if you can keep a vehicle running longer, if it's in service more so it spends less time in the garage, you maybe need a smaller fleet and maybe you need less mechanics, but now you have more vehicles, you've got all these new autonomous vehicles and so you've got more mechanics. But because even if with the efficiency, you've got all these new vehicles. So a lot of that, and again, we saw this with automated fare technology, great, now we can remove all the people from the stations.

Adam Giambrone (00:58:31):

I mean some have, right? And it's hard.

Jaspal Singh (00:58:36):

It's crazy because sometime you go to station you see nobody and then you feel lost.

Adam Giambrone (00:58:40):

I would feel lost maybe in certain cities you feel less secure, you have questions. And so a lot of these things, and this was, I remember the London Underground, I don't think, my understanding is they didn't actually decrease staff at all. But what they did is they changed them. So instead of the person making change for your ticket, you maybe need a different person, different training. They're out there keeping an eye on things, noting some problems, talking to passengers. So you've increased the quality of service.

Adam Giambrone (00:59:07):

It's cheaper in the sense to provide and you've upped the or the same price maybe, and you've upped the quality of service. So I think all of those innovations and all in these different areas all combined to really make a lot more pleasant, easy to use, reliable. At least that's the hope. And that goes back to some of the earlier comments I've learned. You've got to have a motivated staff. You have to have people who really want to be there, who are excited about this. And in turn, you probably have to mean that as transformation goes, you're working with your workforce. Because if people are worried, why would you push to bring in new technology if I'm just going to fire you? Right? So you've got to think, but this is classic organizational theory.

It has nothing like how do you lead this organization in a period of change, which is fundamental and the basics no matter what, whether it's autonomous, whatever, you still need good people who are working hard, who have a passion for delivering public service and public transit. And that's how your agency, because technology is not going to solve these problems for you, they'll help. But if you still, you're still going to have people somewhere in the organization and they're going to still be either the strongest link or the weakest link depending on how you do it.

Jaspal Singh (01:00:28):

I think that's a very powerful statement. People are either can be your strongest or weakest link because they make the difference, not the technology. You can have a best of air collection system, best of buses, but if nobody's using it and nobody feel happy to use your service, no service. And I think the public transport orientation need to be changed. And I was talking with the president of New York City Transit and his LinkedIn line was that the customer services is their North Star. So you need to rethink public transit just as a vehicle company to customer service company and how to serve the customer. So that's very important what you mentioned.

Adam Giambrone (01:01:09):

Yeah, no, and fundamentally I think that's true around the world. I mean slightly different practices in each city. People behave slightly differently, but more or less people are people and you see the same patterns all around the world. It's just very minor differences.

Jaspal Singh (01:01:24):

And you studied history, so they remained the same for over the period of time. So they never changed.

Adam Giambrone (01:01:29):

That's true.

Jaspal Singh (01:01:30):

So that's amazing. Now, you mentioned briefly in the middle about your role at NIM and you were head of road division working on the policy. And I think one of the key thing we are seeing in the society, the mobility landscape is changing very fast. So I tell people the 2007, the first time Uber launched, so the mobile phone, Uber launch, it's changed the on demand landscape in 2016 - 2017, we see these scooters and again now the last mile connectivity change. And I am hoping that by 2027 we'll see major push in autonomous vehicles and eVTOL and other kind of technology.

So again, we will have a next decade of change. But the challenge is you were lucky in nim, you started from a blank slate. You can put any policy, any infrastructure, any kind of processes. But a lot of cities, they have this legacy and challenge to change the policy. So want to understand how do you see if you're working in an old city, how you can overcome these policy. Like you mentioned, it's all about people, how they feel motivated to do something new. A lot of the city people, they are little behind to understand how the technology landscape will change.

Adam Giambrone (01:02:47):

I think, I mean look, transformation is difficult in anything. And that's true for employees and it's true for riders or just people living in the area. People get used to it. They're happy. I mean unless there's a big problem where they're really missing something, generally it works. And so part of this change management is you've got to figure out how you can push things aggressively. So you want, while at the same time again, we talk about people being the greatest strength or the greatest weakness. If you get it wrong, you may have the great technology. I think Uber found this and some of the micro transit they've been calibrating and there's still a lot of controversy around that, but how they go into cities and how they adapted, and it worked for them in some areas and in other cities it didn't. And sometimes they were shut out.

Adam Giambrone (01:03:31):

And this is more true of the scooters. And so I think what I found on especially things like micro transit is it can be really granular in terms of how they adapt. So you've got to figure out how it actually practically integrates. Well, it's not just throwing in there. And so that's an example where fundamentally it comes back to the basic principles of engaging with people, working with them, change management both for staff and riders. And that's a people thing and people want to feel included in part of the journey. And so I think a lot of these things where we've probably as an industry made mistakes at sometimes is around how you communicate, how you bring in this change. Otherwise you do face a backlog, a pushback. And I think fundamentally the basics come down to cities are congested, they've got very little bit of space and you have to have that conversation about how you carve it up.

Adam Giambrone (01:04:36):

In some areas you are able to fully pedestrianize streets or fully transform them into public transit. But in most cities, and this isn't true just in an issue of Europe or Asia, these are the same debates that go on all over the world and they're the same. We've got pedestrians, we've got micro mobility, we've got public transit, we also have shipping. I mean it's roads, but cars, all of this stuff has to go. And in most cases you're not free to just bulldoze, to widen the road even if you wanted to, which is, but so you're fundamentally, you've got all this technology, but if you need reserve lanes for buses, again, autonomous vehicles that are operating in mixed transit, basically they're just more traffic. And in fact they may increase traffic because people can watch a video instead of having to drive. So they might be willing to sit for 45 minutes.

Adam Giambrone (01:05:27):

So they themselves are not going to solve those fundamental problems. You're still going to have this debate that has to be mediated where you come in, okay, we still need a bus lane, whether it's an autonomous vehicle or a bus. So how do we get that right? And that does mean we probably are taking a lane away from traffic like cars or from parking or maybe wider sidewalks. I mean you can have that debate too. Maybe we should have wider sidewalks. So all that, and that's not a technology debate, that's a community discussion about how you manage it to get that. In Toronto, traditionally it was pedestrians were first cycling and micro, second transit, third car, fourth. I would often go into meetings and get reminded because my job was to push for public transit, but being reminded that well cars are number four, the last, I'm number three.

Adam Giambrone (01:06:24):

So how do you improve? And of course all transit users are pedestrians so they're not in conflict. But those sort of things aren't mitigated by technology. Maybe we can model, we can do nicer images and give you a video walkthrough about how it will feel. That can be kind of cool. But the fundamental parts are still going to be this discussion about how you manage the people, how you do change. And again, I suspect if we come back and have this discussion in 2050 Bel that there will still be vehicles that have flourish wheels, they will be moving around, they will probably carry around 30 people or depending on the size, and then there will be other vehicles that will operate in dedicated right of way. Maybe they're using mag love technology. My guess is that they'll still be using rail in most cases because generally you can still do high-speed rail.

Adam Giambrone (01:07:18):

So you come back to this world where if you took somebody from 1890 where the first electric streetcar having come in, they'd probably be flabbergasted about a lot of things, but they'd still see the tracks on the street if they see a stop and they'd probably know how to get on that new fancy vehicle that came. And they might be amazed at how it moves because it doesn't have a wire connected anywhere to a pantograph, but those sort of things. But I suspect fundamentally those basics will remain the same and there will probably be new things and EV tools might be part of it, but at neon we expected that EV tools to do only 0.01, and that was with a massive adoption 0.01%.

Jaspal Singh (01:08:01):

That's right

Adam Giambrone (01:08:03):

So an interesting one, and great for people in some cases depending on cost, but even in full scale deployment with relatively unlimited budgets, you are still looking at part of it. And so those traditional modes, even I suspect in 2050, when you have the Audi EV tool overhead, you're still going to end up with the basic fundamental modes that exist today.

Jaspal Singh (01:08:28):

And you rightly mentioned pedestrian, cyclist, transit and car and the city needs to prioritize. It's not about technology, it's about what city prioritize. And I think mentioned a lot of cities are now stopping the cars on the street, like Barcelona is a good example. They have these super blocks where they are giving back road to the pedestrian. And I think it's a lot of people don't understand that the walking is

good for health. So it's not only about transit or traffic jam or condition, but from personal health point of view, it's a good way to keep your body active and healthy.

Adam Giambrone (01:09:07):

It's interesting going back to Saudi Arabia for a minute. One of the largest examples of having to move people, and I think it might be the largest, is the hodge which occurs every year and it's 4.5 million people. And traditionally, again, just very quickly, I think there were 30,000 buses required to move people. And the fact is it's very challenging. The numbers are so high, people are doing basically the similar route. You follow a very prescribed route that's been the same for over 1,400 years, but now they're trying to shift to a public transit model because it's a lot more efficient. But in some of the corridors, they've got to figure out how to move 70,000 to 90,000 people per hour per direction. And so in some of these cases there's just no transit technology. So you go back to the fundamental, well, what if we could make this walkable for people now or people who can't walk?

Adam Giambrone (01:09:59):

And so there's all those things, but you come back to some of the fundamental modes and cities have been defined by walking mostly Rome could only grow so big, they only really had walking, right? So you've always had this thing where people are willing to commute about a half an hour. And again, it's interesting. So half an hour by foot, half an hour by horse, half an hour by bus, half an hour by metro, and then you get these weird cases more than half an hour, but the super commuting in Europe or in Asia where people can go two and a half hours on high speed trains. But if they only do that twice a week, I think if your math goes, it still comes back to on average half an hour each way for work. Now they're going twice a week and they're traveling 900 kilometers. But so all this technology is high speed rail, but you still find it come up to these interesting numbers that seem to always be no different from ancient Rome in that people were more or less able to walk or travel half an hour by some mode. So it's how all these fundamental things sort of come back to some things that don't really change and culturally around the world are also very pretty similar.

Jaspal Singh (01:11:11):

Yeah, no, that's quite a good analogy to put. It's fundamental need is to travel half an hour in different direction, different mode, and that's a way to live a life. Now there's a lot of discussion going on about this AI and Generative AI and then AI will change a lot of industry and I think there will be a lot of changes we see in public transit. Some of the cities are already using AI for customer care experience and there will be no barrier for language. You can chat, you can speak in any language. What are the other thing you see AI or Generative AI or can help mobility space?

Adam Giambrone (01:11:50):

Well, so a transit agency or a transit company is at the heart of it, a large enterprise depending on how big it is, and it has all those functions. So if you think about, I always remembered at the TTC, we always said we had almost one of everything, including at the time of blacksmith. And this wasn't that long ago, it was still efficient to hammer out. I think that has changed now, but you have all these HR functions, you have to buy billions of dollars worth of tires, rail, and you have to manage your inventories and match them up and you need to do all this analysis. And so I suspect where you can see it's not even really focused on public transit, but if you can do procurement better and you're buying a billion dollars worth of items a year, well small savings at 3% savings on that could be tens of millions of dollars.

Adam Giambrone (01:12:43):

And then you have 14,000 employees are now I guess 16,000 in the case of the TTC. How can you manage that? You have your large HR departments, just it's a people function. Can that be cut down? And then you talked about the interactions with customers, how can you improve? So that may not even be a savings. I mean you might be able to cut down a call center a little bit with ai, but you also improve the service quality because people can interact maybe 24X7. You have none of those issues. You've got a lot of those things. I think AI will help us probably do better maintenance, analyze things better. I think it will probably help us plan and predict and do look for patterns that we weren't able to see and might give us to improve bus service, changing locations of stops. Again, we've done all those things traditionally, but normally in the past you take a couple months and a service plan would really think about a bus route and go out and talk.

Adam Giambrone (01:13:46):

Well, now it might be if we can look at the last 50 years of data and combine all this other data sets and throw it all together, well, we might be able to look at those changes a lot easier to do and to make them, and that would make it more efficient or faster. And so I think things like that. And so I think there will be some customer focus things will allow us to do, but I think at the fundamental, it will allow public transit to be more efficient and more better aligned, especially on things that you can move around. You can't really easily move metro lines around, but you can do it with buses and things like that. And so thinking about all those different questions, and I think agencies haven't yet fully grasped that. I mean they're beginning to, but AI still not the idea of ai, but the current capacity of AI is still relatively new.

Adam Giambrone (01:14:42):

And I certainly have been thinking that I need to do more of this sort of research and figuring out what can you do with this? I mean, I have ideas and you hear things and talk about it, but at the heart of it though, it will go back to having employees in service planning or in maintenance who are interested and excited and want to try new things. How can we do this? How can we use this? Again, it won't be for me to tell an engineer probably how to use AI or somebody specializing in track repairs, right? They've got to be passionate. You've got to direct people there who will be like, wow, they can talk to people and they come up with new uses or figure those things out. And again, you have so many functions, accounting, these huge payable, all of those things. I guess you'd ideally want to have passionate people who are in their little area figuring out how to do that. And then cumulatively what you do is you ideally get a better, more efficient system with better results, better maintenance, better customer interaction, better bus routes, all of those different things.

Jaspal Singh (01:15:49):

No, I think that will be the biggest scene because I was talking to some other people. They say there will be no AI department in the company because every department need to have ai. So like you mentioned, accounting, procurement, maintenance, operation planning, scheduling, customer care. So each function within the automation need to use some kind of AI function. And probably it'll not reduce the manpower, but it speed up your action. You want to relocate the bus stops or you want to design the new stops. You can do much faster and your procurement can be much faster. You don't need to wait for three month or four month cycle to evaluate and bid, and you can compare it very faster.

Adam Giambrone (01:16:31):

I think again, I remember at the Toronto Transit Commission, they used to have a program where we'd pay for innovation. So if someone came up, and my favorite very simple one was there's the exit signs and somebody figured out it costs something like \$15 to buy a replacement piece of glass, but we have a glass shop, so we could produce that for 25 cents and one guy in a day could produce the next five years worth of these glasses for 25 cents, and they split the savings with the employee. But that again, that's very analog. I mean that was classic analog, but that innovation tempered with somebody. So maybe you have a few people with the programming, but you want that person, that innovation, right at the very simplest one to figure out how to do things like that better. I mean, again, that one didn't fundamentally reshape transit, but that sort of passionate and hey, wait a minute, we can do this ourselves and a lot cheaper.

Adam Giambrone (01:17:31):

That's the sort of thing you kind of want, and I think you've got to get people thinking that way. So instead of using glass cutting today, right now we're going to talk about how we could maybe do a program. And even if that person doesn't understand all the AI asking the question, so then maybe you have the programmers and whatnot that work with a person like that to come up with a new way of doing something. And again, it's probably going to be these little small things on how we, and again, it might also be new materials, all of those 3D, 3D printing, there's all these things, but at the heart of it, you've got to have someone who really thinks about each little part of it and figures out how to use this new technology effectively.

Jaspal Singh (01:18:17):

In fact, Metro North in New York, they are using a lot of 3D printing for parts because some of their trained rolling stock is like 40-year-old, and a lot of these manufacturer has stopped building, so they don't have those parts and they cannot fabricate it outside because I mean, you need five or six item or 10 items, so you are not going to fabricate and create something. So now they have a 3D printer in their workshop and they need some part, they just print it there and use it. So like you said, it will become part of a day-to-day life and use these technology tool to expedite and do your job faster.

Adam Giambrone (01:18:54):

I assume it never stops, right? Because it just keeps going. And then when you do everything, if you ever got there, you would then go back to the beginning and see if you could even make that one more efficient or whatnot.

Jaspal Singh (01:19:04):

Why not? No. Great. Thank you so much, Adam.

I really enjoyed our conversation. Now this is my last question, and it's basically about your personal journey. You had such a remarkable journey from art launch to mobility and then TTC, SAPTCO, NEOM, and now you're working with HDR. What are some of the key lesson you have learned from your career in transit and urban planning that could benefit the new generation or people who are looking transit as a carrier or people who are not looking transit as a carrier, why they should consider

Adam Giambrone (01:19:35):

It? One thing that I've come to love about public transit is, especially when you're on the agency side, is that because it's part of every debate or every discussion, so obviously it's part of climate change, key city build, livability, safety, social mobility and integrating communities, little bit, all these things. So really while you have a very defined function, your job is within a public transit agency, you end up being sucked into all different discussions.

Adam Giambrone (01:20:13):

And even when a city's talking in Toronto and New York, they're one of the couple largest users of electricity. So now when we talk about changing the grid, I mean just to produce one example, well, you've got to have the transit agency at the heart of it, usually after the water department, the largest user of electricity. So you get sucked into that discussion. So I think from everybody who will come into the industry, they're going to come in maybe as an accountant, right, in that which isn't driving a bus, isn't planning a bus route, but has a part of it. And as they go up in an organization, they begin part of these bigger discussions going back, how much is it going to cost to redo with the grid? How is the transit? So you get part of all of those. And I guess mean my only thing if I was going to go back to it and you could change something, is to think about, so my degrees, I have an MBA, I have an undergrad, I almost think I'd go back and do engineering or something because when you get to a senior level, of course you have to generalize across.

Adam Giambrone (01:21:18):

And even if you're an engineer, you've got accountants, lawyers, all those things. But I think part of the, it's a little bit more of a struggle in the industry if you don't walk in. And one reason I went back and did an MBA partly was to learn fill in gaps, all those things. It was a good experience, but also it demonstrates you've got some core competencies. And so that would be one thing in terms of thinking about how people come into the industry. And again, it's changing, exciting, everyone talks about the new technologies, but as we've talked about in this discussions, it's still, there's going to be still fundamentals. And whether you're working from home three days a week or in the office, you're still going to be addressing a lot of these things. And I think it is an exciting place and it is growing. There's way more transportation systems per capita in total around the world. So maybe even the opportunities are greater now than they would've been over the last several decades.

Jaspal Singh (01:22:17):

Yeah, no, I think what you said is very interesting because that's how kept me in mobility and transit space is like when you work in this space, one day you will be talking to a mayor because the transit impact city, and second day you'll be talking to a shopkeeper because the transit has impact on his shop or his shopping. And third day you'll be talking to a passenger who is looking to get his bus home and back home and the next day you will be talking to grid company or procurement or bus manufacturer. So it's a space where you don't just do one thing, but you learn about different facet of life and you different level of people. So I remember my meeting with some of the mayors and then you feel so excited because you're talking to them and discussing about transit.

Adam Giambrone (01:23:07):

It's a fun place to be.

Jaspal Singh (01:23:08):

It's a fun place to be. No, great. Thank you so much, Adam. I really enjoyed our conversation and generally we end this podcast with this rapid fire question round and idea is to learn a little bit more personal side of you. We now know about your experience in different parts of the world, but we want to know a little bit more about you. So if you're ready, I'll start with my questions.

Adam Giambrone (01:23:29):

Okay, shoot.

Jaspal Singh (01:23:31):

Okay. So my question will be if you were not in transit or consulting or archeology space, what are the profession you had selected?

Adam Giambrone (01:23:39):

Oh boy. You kind of cheated just by you. I thought wasn't in transportation. I would be in archeology if you forced me, you blocked me from those two. I think what I probably have gone is gone back and got a degree in urban planning and probably stepped into that area. But no, if I wasn't in transportation, I would be in archeology.

Jaspal Singh (01:24:01):

Archeology. So that's a favorite space. Now you travel around the world, which is your favorite city in the world and why?

Adam Giambrone (01:24:08):

So I think for me, I'm very much a Toronto kid. I've worked in probably 10 or 11 different countries and traveled to other ones. I think at home I always find myself being very fundamentally, it's interesting, you can never, I think, escape where you grew up the other place. And I think it's for the same reason I've worked in Montreal, one of my favorite cities to be in is Montreal. It's not that from Toronto. And I think it is probably a product of the fact that when you came of age in university in Montreal, it's some of the first jobs, all of that stuff. It's a place that I go back to. And I always was proud when people in Montreal thought I was from Montreal because the non-Canadian listeners, you'll know that Montrealer's kind of don't like Torontonians. And so being kind of a classic born and bred Toronto, I was always kind of proud to when they assumed that I was from Montreal, I guess you can feel the passion of city, but I love being in cities. I'm sad about what's happening in cartoon. It's a place I also have a soft spot in my heart having spent a lot of time for. But yeah, no, I'm a cities person, so I do enjoy cities all around the world

Jaspal Singh (01:25:22):

Now. Montreal is beautiful, I think. And like you mentioned, there is something going on between Toronto and Montreal people, but they still love each other. So Montreal is beautiful. Now my third question, which is your favorite book? I know you read a lot, so which is your favorite one?

Adam Giambrone (01:25:38):

So I have a series, it's by Elizabeth Peters. And it's basically the 22nd plot summary is it's set around the turn of the 19th, 20th century in the Middle East. And it's an, it's based on some historical figures, but it's fiction and it's a family of archeologists who are working. And she wrote a whole series of them and I

think one of them comes to mind seeing a large cap, but they're based, and they're all murder mysteries, so they're archeologists and it's kind of a nice relaxing, you don't have to think too hard, but they're well researched. And so they're fun to be into the region, which is a region the Middle East that I love and do something that I like. And they're just fun stories.

Jaspal Singh (01:26:22):

Amazing. No, I'll put it in my reading list and read it. I love history. And now you said it's history plus fiction and then

Adam Giambrone (01:26:31):

They're perfect for a summer read.

Jaspal Singh (01:26:33):

Okay, so it's in my read list now and a lot of other people will also do. So my next question will be what one thing do you wish you should have learned early in life?

Adam Giambrone (01:26:46):

For me, I've seen myself evolve and I've seen this formally and informally through 360 reviews. And I look at the leader, I was back say 20 years ago, starting with the TTC and sometimes you cringe. I was very lucky to have a bunch of people who reported to me nominally, but who were wise and had many years and I guess let's say put up with some of my tendencies, but also I was able to learn, it was weird. I almost found them as a reverse mentor. So you normally think of a mentor as somebody who's further up or higher than you or something. These folks were higher in the sense that they had way more experience and had been around, but a lot of them I think arguably took the time and I'm sure they were frustrated at different, and I look back at 360 reviews and you almost go and you can see, but I've seen those.

Adam Giambrone (01:27:43):

So the listing, the allowing people to lead and when in neon we built a whole department and I think that the Adam of 20 years ago was much more of a micromanager. And whereas you learn that you've got to find good people, you've got, and I think by 360 now talking because I had them would say that about me, right? Where you get good people, you give them support, you back them up, and then you let them do their job. And then of course that multiplies your power or your influence if you have this group because no matter how hard you work, you're one person. So now if you've got a good team of six people in different areas and they're all going out doing good things there, you've got them. I mean, that's what leadership is. And so I would say looking back, and I still, I see this and just watching yourself and being really mindful of how you interact in those, because you can be brilliant, you can be have work hard, all those things, but if you don't get the people part right, you're going to, you're just going to come into barriers.

Adam Giambrone (01:28:52):

And so I think that that's what I've really learned most.

Jaspal Singh (01:28:55):

That's a very good learning. And in the beginning actually, you mentioned the people who make the Nation, so they take the Nation forward and they take dog nation backwards. So it's very important to find good people and give them space to do. No, that's a good learning. Thank you for sharing that. And it's important for me also to think that as a leader, how you help the team under you to grow. Now this is my last question and I always ask people this and get a very interesting answer and I'm expecting something interesting from you. If you can change one thing in life, what would it be?

Adam Giambrone (01:29:29):

I think if I could change one thing in life, and I referenced this a little bit longer, I think I would have stayed maybe in school longer. I don't regret some of my choices. I would've probably done something like engineering. And I think just because seen the challenges that I've faced and I'm over most of them now, but it was something that I think a lot of the world still revolves around. Obviously education, supporting, you have to have the skills but also falls back on simple ways of I look at you, I say, oh well you've got this degree, you've done that experience, you make those judgements about people. And of course you can change people's opinion and things happen. But I found that so much. And the other thing, and I'm cheating because you said one thing, the other thing I would've done probably, and I've done a lot of travel, but as you go older, you've got family, you've got work, you don't have that freedom to go be somewhere. And I've had a lot of experiences, so it's hard to complain. I think in retrospect, I would've done more and those would be those combination. I kind of cheated on that one though.

Jaspal Singh (01:30:39):

No, but both are interesting option. And like you mentioned, travel is important. And I tell people, if you haven't traveled, you should travel because travel make you humble. Now I travel a lot and every travel make me humble because I feel we are such a tiny part in this whole earth. And there are so many places, so many people, so many cities, so many things around the world. So we are just a tiny spec in this whole world.

Adam Giambrone (01:31:04):

And you learn a lot. And of course I often travel either for work but also just for fun. But you do, I mean the more things you notice things and without having to go on a study tour or only think about on your vacation thing you do, the more you see, the more examples you have. And it really, I think, blends out that experience. And as you say, you're humbled, you see what you're doing well, but you also see where you could have and the places around you and you meet more people and

Jaspal Singh (01:31:36):

You meet more people. And people are same. Like you mentioned in the beginning. People are same. They all have same thought process, same thinking. They look different. But internally, I feel everybody thinks in whether you're in Asia, in Middle East, in Africa, in North America. It's very interesting. No, thank you so much Adam. I think really enjoyed our conversation. A lot of great insight, A lot of great point you mentioned. I really wish you good luck for whatever you are doing in your new role. And yeah, looking forward to hear more exciting news from you in coming days.

Adam Giambrone (01:32:11):

Thank you. Thank you very much for the conversation. This was a lot of fun.

Jaspal Singh ([01:32:14](#)):

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