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AI FOR GOOD GLOBAL SUMMIT

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POPOV ROOM

OPENING THE BENEFICIAL AI ERA (AI IN EVERY CITY)

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>> Welcome to the last section of Day 3. Welcome again. Very exciting session ahead. I have the pleasure to introduce you to Bruno Giussani, global TED curator. I had the pleasure of learning a lot were Bruno over the last few years, as a TED moderator myself. Please welcome Bruno Giussani.

>> BRUNO GIUSSANI: Thank you, and hello, everyone. It's time to bring the discussion a little bit down to the local level. We have spoken in the last couple of days about many things that were global, systemic, and now let's go down to where we live, and where we live is increasingly in cities. More than half of our population of the world lives in cities. Yesterday the UN published projections that say that two-thirds of the population in the world will live in cities by 2050. So the place where the effects and the impacts of AI, good and bad, will play out most is in urban settings going forward. And one of the cities that's at the forefront of this, at the forefront of creating an environment for AI and for technology and for innovation and attracting companies, but also figuring out how to integrate that, how to integrate that in an inclusive way, how to integrate that to make the city better and the life of citizens better and not only business better, is Pittsburgh, in Pennsylvania, a city that has a history of being at the forefront of things and then going backwards. It was one of the centers of the American industrial revolution, the steel mills of Pittsburgh. It went downwards after American manufacturing contracting. Then in the last maybe 15

years, the city has kind of lived through a sort of renaissance, led in part, at least for the last six years since he started being mayor, by Bill Peduto, our next guest who I would like to invite on the stage. Bill, welcome to Geneva.

(Applause)

>> BILL PEDUTO: Thank you. Thank you, Bruno, and it's an honor to be in Geneva. Unfortunately, my luggage is somewhere in North America or Europe. They can't tell me. So I apologize for the pants, and please let the mayor of Geneva know that I have spent money in his or her town.

(Laughter)

Pittsburgh, how many people have been? Show of hands. How many people were surprised. Keep your hands up. Yeah, it's a city that most people think about and they think about rusted old steel mills, dirty rivers, but that was Pittsburgh's past. And we are very proud of our past. Steel is in our DNA, and we are very proud of it, but we realize that our future does not have to be wed to our past. In fact, if you look at Pittsburgh's history, during the second industrial revolution, when electricity helped to create big steel and mass manufacturing, Pittsburgh led the world in steel manufacturing. We actually produce more steel in World War II than Germany and Japan combined. And during that time, we also created air that was dangerous to breathe, water that was poisonous to drink, and the greatest disparity between the haves and the have-nots in American history.

The interesting thing about Pittsburgh was that we didn't consider those factors until they became so almost impossible to deal with that we started to figure out ways in order to deal with it. We created the first Clean Air Act in American history. We worked with our corporate community to clean our water. We organized in our mines and our mills, and we not only built America, we built the middle class.

And then things rolled along until 1979, and we died. The city died. Our entire industry was taken from us. We had unemployment at 19%, triple what Detroit's is today, greater than unemployment during the Great Depression. We saw more people leave our city in the '80s than people left Katrina after -- Hurricane Katrina in New Orleans. And we went through the '80s and '90s struggling just to survive. But we realized something -- that just as we were able to deal with those problems of our past, we were able to put together a future that we are seeing today, and Pittsburgh is back on the global stage. But this time it's for predictive analytics, medicine, artificial intelligence, robotics, the autonomous of everything, finance, and we have a diversified economy.

So how did we get there, and what are we doing to make sure we don't make the same mistakes we made a hundred years ago? Here's a little film as an introduction, and then looking forward to lively conversation with Bruno.

(Applause)

>> Chances are you've heard some things about us. We are the ones who shoveled iron ore into the blast furnaces and ran our streetlights during the day. We did the unglamorous work that helped build the nation, and we've got the scars to prove it. Sure, we've got a reputation. The way we see it, we've got a reputation to uphold. Yes, steel will always be a part of our identity, but really, it's innovation that's in our DNA. From steamboats to glass to steel to aluminum, Pittsburgh was always at the forefront of innovation. We created the modern highway system. We powered the first nuclear submarine. When the steel industry famously turned our city into hell with the lid off, we set about to clean up, instituting the first clean air regulations of their kind. We know a thing or two about looking challenge in the eye and seeing opportunities.

Hills, rivers, and valleys forced our 55 square miles into an unruly tangle of roads and bridges. Out of that grew 90 distinct neighborhoods. Some have prospered with the cities ups and downs. Others haven't had a seat at the table. In the past, progress for some meant decline for others. As city residents fled to the suburbs, we cut highways through the hearts of vibrant communities, leaving large swaths of our diverse population isolated. Maybe there were times we forgot what we stood for. But we always come back stronger. We are still creating industries, but this time around we are using 21st century technology and engineering to get us there. Universities, nonprofits, and businesses are working together to build robots, cure diseases, and design better products.

We are just getting started. With smart PGH, we are at the cusp of a next revolution in transportation and information technology that has the potential to have huge impacts on the way we live. We are deploying the most advanced traffic signals in the world to move people, bikes, and vehicles both faster and safer. These signals actually learn, and they are made right here at home.

We are rolling out smart streetlights with sensors that communicate with traffic and even monitor air quality. We are building new infrastructure for autonomous and electric vehicles and charging them without fossil fuels. And this time, we are putting people first, training our residents for the jobs of the future and working on the ground in every neighborhood to make certain these technologies are actually making people's lives better.

Smart PGH isn't simply our next project, it's a chance, a chance to chart a course, to bridge the gaps between ourselves, the chance to be a blueprint for other cities like us. We are thinkers and doers. It's what's allowed us to bounce back and shake off the rust and keep moving. Our hardworking ethic, our spirit of innovation, those aren't going anywhere. But this time around, we've made the decision if it's not for all, it's not for us.

>> BRUNO GIUSSANI: The microphone, yes? Thank you, Mayor. This is a very unusual way of telling a story of a city because generally cities don't promote themselves saying we were the most polluted place in America, and people could not breathe and could not drink

the water. So there is a courage in there, but of course, there's also the creation -- there is a storytelling effort in terms of positioning the city in a certain way. We did it once, we can do it again. We paid the price, we have learned the lessons, et cetera.

I want to explore some of that because, of course, the choices you have made in Pittsburgh in terms of attracting technology companies, I hear there are more than 1,000 based in Pittsburgh -- and creating an ecosystem for technology to thrive not only in terms of generating value for the companies, value for the cities, is quite unique. So maybe in the sense of one of the last sentences here, learning lessons that we can share with others, what are the pillars of this Pittsburgh Renaissance?

>> BILL PEDUTO: One of the ideas is the solutions to what will be the negative impacts of a changing economy won't come from the job centers such as the Silicon Valley, that are just learning about leading. They will come from the areas, and in most places, post-industrial cities, that have had a long history of making mistakes and learning. They will come from the Detroits, they'll come from the Roan valley, they'll come from the Pittsburghs. They'll come from areas where workforce development means more than just training; it means taking care of a worker.

The best example that I can give you is, you know, we had our ups and downs with Uber, and when Uber came in, they are a disrupter. They were an economic disrupter, and a lot of the companies are. And we realize that, and we realize that progress moves in one direction.

But when you are a disrupter, you have a moral obligation to make sure that it benefits society. And they didn't understand that. Who did? Ford. So Ford creates a system for urban mobility called Chariot. Every one of Chariot's drivers is an employee, not a contractor, but an employee with benefits. They are all organized by the teamsters union. Every Chariot vehicle is built for people with needs so that people with wheelchair have access to it. Not 1%, not 10% -- all. And Chariot makes sure that if you don't have access to credit, you can use cash. If you don't have a smartphone, you can use a land line. So poor communities or those that don't have credit worthiness aren't redlined out of the new transportation model. That's the difference between Detroit and Silicon Valley. And those are the lessons that Pittsburgh can teach.

>> BRUNO GIUSSANI: Now, Pittsburgh has a lot of tech companies, but it also has a lot of universities and colleges and research centers. And it has a mayor and a political system that allows for creating a space for these things to happen. I've read -- I read a quote in some paper that said, well, basically, Pittsburgh is a space where there is a sort of legal void that can be designed or filled by technologies and politicians together rather than just politicians. How do you create a welcoming and at the same time inclusive legal framework for innovation and technology to flourish in a city?

>> BILL PEDUTO: So a lot of the discussion and a lot of what I heard one panel discussion was around federal governments and what

needs to happen in order to help to allow AI to flourish but to do it in a way that will be beneficial. I am a big believer that it's going to happen that way, that what will happen is cities will become urban labs. And especially those cities that already have the critical infrastructure of universities and research. They will be the places where we'll see the technology taking off. The technology won't be based upon regulation, like in the past; it will be more upon innovation. And innovation will move faster than regulation.

So in cities that you see partnerships with this, in order to see the technology occur, you will also see in those cities, in most cases, a willingness to partner with those companies on ways that benefit all. In some cases, that won't happen. In many cases, it will. Once it starts to take hold, then you will see at the federal levels working around the edges to start to make sure that it is benefitting society. At that time, it becomes more of a political battle. At the very beginning, though, it's a race for innovation in order to build these companies where cities and regions will compete on a global basis.

>> BRUNO GIUSSANI: Now, Pittsburgh is strong in tech, strong in med, strong in education. You are one -- I have seen a mapping of the AI centers of the world, and basically, there is Silicon Valley, Boston, Beijing, Zurich, and Pittsburgh. Those are the five places where things happen. There are AI elsewhere, but roughly those are the five clusters of the world. And Pittsburgh is especially known, at least from press coverage, for autonomous cars. Five companies

are there. A lot of the old manufacturers are testing there, Audi,

Ford -- you mentioned them -- but also Uber and a couple of startups.

What kind of -- what did you give them to attract them there?

>> BILL PEDUTO: We gave them talent. So Carnegie Mellon created

the first program in robotics in 1979, the same year Pittsburgh died,

and in the 1980s, it created the first PhD in robotics. And it

started to bring people from around the world to Pittsburgh that work

in the field of autonomous everything, not just cars. But autonomous

vehicles, by the 1990s, were already being experimented in

Pittsburgh. And by 2007, Carnegie Mellon had taken a vehicle from

LA to New York. That's before the iPhone was invented. And since

that technology has taken off, Carnegie Mellon was already on our

streets. So when Uber came knocking on the door and said we want

to create the first on-demand autonomous vehicle and we want to do

it in Pittsburgh, we were already ready. We immediately started

conversations with the White House and with the Pennsylvania

Department of Transportation to get safety rules in place. And then

we took the chance. We took the risk. And we put the cars on the

street. And now today -- and that's only three or four years ago --

there are five companies with vehicles on our streets with driverless

cars. And the industry is spinning off on itself. There are over

2,000 people employed in the industry within the past three years,

and approximately $3.5 billion worth of investment, and we didn't

give them a dollar.

>> BRUNO GIUSSANI: And the cars are actually transporting

passengers, not only testing the technology?

>> BILL PEDUTO: Uber is transporting passengers presently, yes. I shouldn't say this. Since Arizona, all their cars have been off the street.

>> BRUNO GIUSSANI: Absolutely.

You were reelected to your second mandate. And during the reelection, your opponent took the other position, that if I am elected, I am going to kick Uber and the others out of the city. You won, so clearly the majority of citizens think like you, but what do you tell to the people on the other side, those that are concerned, anxious, scared of artificial intelligence taking jobs, of technology creating a bigger wealth disparity, these kinds of things? What do you tell them?

>> BILL PEDUTO: There's a couple of things. Number one is we have seen automation in place for over 120 years, and the only job that's gone is elevator operator. In fact, there have been more jobs created through automation than we've lost. If you think about how technology has changed jobs in just the past decade, think of the iPhone, and then think how many people are employed worldwide to create apps. Apps used to mean appetizers. You know? The only people creating apps were chefs. And now today we have technology people throughout the world employed in an entirely new industry.

There is opportunity, but you also have to make sure that you are putting into place at the beginning safeguards for those that may be negatively affected.

So what I tell people in Pittsburgh is sure, throw Uber out. Throw Ford, Argo, AI out, throw Aurora, throw them all out. Do you really think that's going to stop the industry in creating autonomous vehicles? No.

>> BRUNO GIUSSANI: It's the idea that time and development only goes in --

>> BILL PEDUTO: One direction. Right. What it will ensure is we won't be a part of it, and somewhere else in the world will lead it. And I compare it to President Trump's statement about pulling out of the Paris Agreement. Will that stop the world from going in the direction of being able to address climate change? No. It will simply make sure that the United States won't be a part of it and will be buying our wind turbines from Germany and our solar panels from China, and they will be assembled in India instead of Ohio and Michigan and Pennsylvania.

>> BRUNO GIUSSANI: You are a Democratic mayor in a city that's an exception in the world region, but you are in the middle of Trump country, essentially. The President won and won sometimes big in the region, mostly because people are concerned and basically the President told them, you know, don't worry, I will fix it. I will keep coal jobs and all these things. How do you handle the position?

>> BILL PEDUTO: It's difficult. It's not easy. Friends around the world, I hope you guys know that most of us in America are fighting this. We want to bring the United States back as a global partner in working to solve the major problems in this world. We want to

be the type of example that other countries want to follow, not something that we are right now. We want to be a partner when it comes to climate change and the refugee crisis in order to be able to do it, and we are still doing it in our cities throughout this country. When the President made his announcement to pull out of the Paris Agreement, there were 64 cities around the country that were part of the climate change cities. So Pittsburgh was one of them, and we agreed beforehand we were going to do it. Today there's over 400 in the United States, including Republican mayors from all over the country.

So being -- yeah.

(Applause)

It's sort of like Star Wars when the Jedis always have to end up on some far-away planet. We are still there, just hunkered down in cities and fighting it that way.

But what I just wanted to say about that is being in the middle of that area and growing up and knowing the people, and the mayor of Austin, Texas, calls it the same thing. He says I am the blueberry in the tomato soup. Meaning little blue dot surrounded by red. It hurts me to see these towns and these people suffer, and I know that it's the same thing that happens in Europe, whether it's a Presidential election or Brexit. You see these people that don't feel they are a part of the economy. You look and see all these things being discussed, and they say yeah, but where's my place in that? Where's my kid's future?

>> BRUNO GIUSSANI: Do you feel a sort of duty to kind of mentor technologists? Typically you mentioned Uber. They come to Pittsburgh, they have a Silicon Valley mentality, they disrupt a market first, which is the taxi market, by putting the cars on the street. But their ultimate goal -- so they create jobs, but their ultimate goal is to eliminate those jobs and to have autonomous cars driving around. Do you feel that you have a role in kind of mentoring them on, okay, but you need to take into account the potential negative consequences of that as well?

>> BILL PEDUTO: Absolutely. Absolutely. And the future of work and what it will look like. And not only just job retraining, because I am a liberal Democratic and proud to be, but too many times my party's answer to what's going to happen to you when you are the one who is worried about your job being eliminated is we are going to retrain you to become a coder. You are going to code. These are people who built our country. These are the people who worked with their hands in the mills and mines and generations. It is an insult to say to them you are going to become a coder. What we should be saying is you are going to be working on manufacturing the next future of renewable energy. You are going to be creating the solar panels and wind turbines. You are going to be building out the future of American energy. And giving them something beyond a false hope of reopening mines and mills that when you get two choices, false hope and no hope, people will go to false hope.

>> BRUNO GIUSSANI: I want to come back to the technology, and

because there is something interesting you have done in Pittsburgh
that could be a blueprint for others, for other cities, and it is
that you have signed a memorandum of understanding with Carnegie
Mellon and with University of Pittsburgh, who are great institutions
of technology research, where basically, in a very simplified way,
they turned into your R&D lab, and you, the city, turned into their
testing ground. Am I correct in characterizing like that?

   >> BILL PEDUTO: That's exactly it. So we in our first year, in
2014, created the first-of-its-kind memorandum of understanding
between Carnegie Mellon University and the City of Pittsburgh. So
if I want to pave a street, I pick up my phone, I call my public works
Department, and I say Pave a street. But if I want to create those
street signals that are using algorithms and sensors to be able to
make changes in real-time and being able to reduce idle time by 30%,
I have to put out an RFP, I have to go with the lowest bid, and then
I have to accept that. Until we entered into the MOU. When we
entered into the MOU, now I can just call Carnegie Mellon and say
create the smartest traffic signals in the world for me. And we have
done that now through several different projects. The latest being
predictive analytics for fire. Everyone knows there's going to be
fires in the city you live in. But why don't we know what buildings
are going to catch on fire? So what if we took all the data that's
out there, we took all the data for 24,000 commercial properties,
we gave it to scientists to work on, we gave them all the fire
information for the past five years. Well, we wanted to see what

happened. Carnegie Mellon came back, they gave us a report. They
said these are the 58 properties in the city most likely to catch
fire in the next year. And here's 250 more that are the second tier.
In eight months, 50 of the 58 buildings had a fire alarm. 50 out
of the 58. If we can get to that level of predictive analytics, we
can make sure that sprinkler systems work, that dampers work so the
smoke doesn't go over.
We can prioritize where our fire inspectors need to be. And we can
eliminate death by fire in our cities.

    >> BRUNO GIUSSANI: I assume you made that somebody from Carnegie
Mellon didn't go around starting the fires.

    >> BILL PEDUTO: That was my first suspicion.

    (Laughter)

    >> BRUNO GIUSSANI: Okay. But give us another example of how we
apply this because predictive analytics has at least two sides;
right? There is the good thing, which is spot a fire or predict a
fire before it happens, or I can predict criminal behavior before
it happens. And there is a creepy side, which is in order to do that,
you need to accumulate a lot of personal information and invade
privacy in many ways. So how do you balance that, and what other
products have come out from this MOU?

    >> BILL PEDUTO: So the balance is on privacy. And it's
unfortunate, but it's true, that there is no public area where we
should feel private. Businesses have cameras that look out the
windows. There are people with their phones everywhere that could

be videotaping or doing whatever. But you don't want government to
be spying on you. So the important part is, is that before you put
in place a system that involves surveillance, that you have to have
a very transparent and open code so the public knows what the rules
are of engagement.

Public surveillance can make a place safer. It can also take away
privacy rights and personal freedom.

One of the options that we are looking at at Carnegie Mellon that
will, I think, help to define this for the next few years, is the
ability of using predictive analytics in order to be able to stop
crime, being able to take a lot of data and being able to find
individuals, locations, other critical information, and being able
to deploy officers there before a crime is committed. But in
addition to that, and where the next phase is coming, is the
deployment of sensors and cameras into that as well. And being able
to use information with the next step in sensors that will tell you
how many people right now are on a street and what direction they
are working and what license plate of the vehicles that are parked
there or how many people walked into the coffee shop and at what time
and how many people are still inside. So when you get the call about
the armed robbery happening, your officers know before they arrive
there's five people inside. Or your firefighters know when they are
reporting to the fire.

But you are right, there's a it he will cat line in using that
technology for public -- there's a delicate line in using that

technology for public purposes where you don't want to take away an individual's privacy rights, but you do want to try to make your city as safe as possible.

>> BRUNO GIUSSANI: Personally I think that's one of the big challenges of politicians in the future, to at the same time allow for that to happen but to make citizens comfortable with that happening and at the same time encourage or force companies to behave responsibly with the data, and that line is not always very, very clear.

We don't have much time left, but I have two more questions. One is what is your advice to other mayors of cities where, you know, the city was living on one industry, and that industry kind of disappeared or weakened, and now they want to bring back the city through technology, innovation, investment, et cetera? What's your advice? What can you share from your experience to other mayors?

>> BILL PEDUTO: The one piece of advice? Create a university a hundred years ago.

>> BRUNO GIUSSANI: That's a bit challenging.

>> BILL PEDUTO: Yes, it is. You need a time machine.

Partnership. That's it. I mean, don't think that as a government you are going to be able to change the economics of your city or your region. It requires a really strong partnership between your corporations, your workforce, your nonprofits, foundations or other community assets, and government agencies. Your job isn't to be able to create that. Your job is to bring together the critical

people in order to make it. And then allow your city to be that urban lab to help to get new businesses started and giving them the little push to get to become bigger and to bring more in. Once you get that critical infrastructure, it will start taking off on its own.

   >> BRUNO GIUSSANI: But without university research center, clearly the founding piece of the construction is missing.

   >> BILL PEDUTO: It is a critical component to 21st century infrastructure.

   >> BRUNO GIUSSANI: One last question, and it leads to Amazon, because Amazon is looking around the United States for a city to host its second headquarters. They talk about potentially 30 to 50 thousand jobs, high-skill jobs, a lot of investment to host these people. I know that Pittsburgh put in a bid like other cities. What did you offer them?

   >> BILL PEDUTO: Well, we are one of the 20 finalists, so we are not saying specifically what we offered until they have made a decision of which city. We just don't want to sort of give Boston an advantage. But I can tell you this, that what we are looking for is a partner, like I was saying. It's not to give them tax incentives in order to put the money in their corporate bank account. It's to be able to give them tax incentives to increase our public transit, to increase our ability to have a full universal pre-K, to increase the amount of affordable housing so as you see the jobs starting to come a housing crisis won't come with it. And looking at all the potential negatives that have happened in Seattle, and trying to

address them proactively by using some of the money that would have otherwise just gone all over to different municipalities and concentrating it in the areas that otherwise would be left behind.

>> BRUNO GIUSSANI: Mayor, thank you for coming to Geneva. Thanks very much.

>> BILL PEDUTO: Thank you, Bruno.

(Applause)

>> BRUNO GIUSSANI: So I hand it back to, I guess, Amir, who is walking towards the stage for the next -- introduction to the next moment. Thank you, everyone. Thank you.

(Applause)

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