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AI FOR GOOD GLOBAL SUMMIT
ROOM C2
AI EMPOWERING SMART CITIZENS
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>> ALEXANDRE CADAIN: Hi, everyone. For the last time maybe. So last but not least we are going to start this very last session together. So we are going to talk about AI Empowering Smart Citizens. We are very lucky to have Jacques and Joaquin here to talk about their projects and the latest research. What we will do here to really focus on project building all together and making sure that in an hour and a half we have further ideas on specific practical problems that we can tackle through AI, is having these two presentations within the panel and then we will give the audience the possibility to talk about specific projects. The last few days, and preparing this session with Renato, a few projects caught our attention. We will give specifically a chance for them to talk first, three of them. You will see what you can basically contribute to within this project.

I would really like to emphasize the fact that within this very last session we want all of you to be able to participate if you want. You already have the pigeon hole application, if you may. And then the floor will be yours.

Thank you very much. I leave you the Mike.

>> Thank you very much. Welcome, everyone. The first presentation will be a quick one? Go for it.

>> JOAQUIN RODRIGUEZ ALVAREZ: Thank you very much for having me here. It is a great possibility. My presentation will be slightly different from what we have seen until now because I don't come here with solutions, neither with certainties. I bring here problems and bring here a lot of doubt.

I work in the autonomous University of Barcelona. My older facilities is living city. I'm coordinator of the network in Spain. We are a nonprofit foundation that we make technology transfer among countries, among continents and always focusing on gender neutral and sustainable projects and have a real social application.

My other organisation is ICRAC the international community or robotic arms. We are right now focused on a campaign about stop killer robots, but today I'm going to talk about human meaningful control in Smart Cities, especially with artificial intelligence.

First of all I would like to make a brief analysis about technology as a promise. What we are living here today, it is nothing new. We have lived it so many other times in history. There was a moment some decades ago when the nuclear industry was promising a bright future of safe energy, clean energy, and they were going to bring energy to the world.

We live it again in the '90s where the GMO industry promised us to end with hunger in the world. And we are in 2018 and we perfectly know where we are. We know that so many technologies that we are dealing with are double use technologies. In the nuclear, we have the Manhattan project and now in the artificial intelligence world we are dealing with modern projects, Maven project, the new project between Google and the Secretary of State, it is going to be the next Manhattan. We have to be very, very careful.

I'm not a real optimistic guy. This is going to be all along in my presentation. I am not saying that, of course, artificial intelligence has good social uses, but we have to be truly, truly, truly careful. And especially because some of these projects that we are living are coming back, coming back again. In the GMO industry we have the Terminator gene and huge debates about the equivalence principle and about labeling.

This discussion about labeling, it is very similar to the discussion take we are having right now in connection with Google duplex. Artificial intelligence capable of making phone calls. We are discussing right now do these artificial intelligence have to identify itself as an artificial

intelligence? Just, of course, as a GMO product should be labeled as a GMO product. This is the basics of ethics. The same as explicit consent when we are retrieving data.

One of the real problems that we are facing from this data management. So many people are talking about data. My approach is slightly different because we are moving towards a society that we are in a crossroads between orwell and hooks' lay. We are in a new brave world and we have fear. We have fear of the uses of this technology and the uses of the data, especially because data all along history has shown how dangerous it is.

I am going to use two examples, two examples that are pretty radical, radical basically because I want to create awareness.

Data has been used in the last century with horrible, horrible purposes. If we remember the holocaust, when the Nazi region invaded some western countries, the census, the registries were used to exterminate the Jewish population in Europe. If we compare the extermination in Belgium and in Netherlands, Belgium, 40 percent of the Jewish community, 60 percent and in Netherlands, 75 percent. There were so many motives, I am not just underlining one, but data was one of the important ones. People were very accurate making registries of ancestors, registries of religion.

We have other examples. Rwanda, for example. Data was also used to exterminate part of the population. So we have to be very, very very careful. We have to establish boundaries. We have to establish legal frameworks. We have to have clear that there are a set of data that never should be gathered.

This is an important thing. Of course, we can not trust the private sector. Neither the public administration because nowadays we have a set of regimes that we don't know how they can evolve in the future. I stayed with -- a state with too much information is a dangerous state. We have to have these things clear in our minds.

And talking about data, we know that nowadays we don't have to wait like in the nuclear industry. They have Chernobyl and Three Mile Island. Maybe Cambridge and left clicks is our 3-mile island. Democracy is something very, very fragile. It is easy to manufacture consent and manipulate public opinion with the tools we have right now. If we want real empowered citizens, empowered communities, we just can say, okay, we are going to let them manage their data. We are going to make them owners of their data. Temptation to sell things are very, very high. So many things are at stake right now. So we have to be truly careful with this things.

One of the things that we need to do in relation with empowering communities is breaking the future bubble because there are so many misunderstandings about empowering

communities. If we believe that empowering a community is generating applications for citizens to choose between a tree and a palm tree in the park of the neighborhood, this is a bad joke. This is problematic. Empowering, it is giving them access to information to critical thinking tools and to creativity. The actual evolution of artificial intelligence has a bright side, of course, but it has so many, many, many shadows.

We in the organisations, in the university we are working in giving response and creating standards for the city, in creating other kinds of approaches to this phenomena. But we find ourselves pretty alone sometimes. This is why I'm happy to be here to ask you for help, for partners, for collaboration. We have a big problem and a big opportunity in our hands. It is our responsibility to convert it in an opportunity.

The other topic, it is about human meaningful control. We have to understand technology inserted in a context. Technology is not something neutral. It is not ethically neutral. Technology is just a magnifier of human willing. And we know what kind of societies we have. When we are saying, we are going to let artificial intelligence reproduce our behavior, to learn from us, do we want to do that? We have racist societies, we have home phobic societies, we have demo phobic societies, misogynistic societies. We have to take that into account. We have to take that into account.

So many approaches I have here today, it is just the technology outside the society context. And we can not do that because it can bring so many, many, many problems. That's why in my city, my university, the research groups I'm involved we are having huge debates and huge conversations about meaningful human control.

I came from a field more specialized in weapons systems and of course in this area nobody doubts there is so many people who doubt that we need meaningful human control. Also when we are managing data, when we are managing automatic process. For example, in universities. Now we are using artificial intelligence to assign the grants of the students. We are saying who or who not is going to receive money to make their career. We can not let machines do that only for a reason of human dignity.

All these appropriations of technology and human roles and processes in our society can be difficult, so many processes related with minorities. Here are some press release, how algorithms can bring down minorities dowrntle Facebook m add review of targeting options. This is part of our lives and they rate everything we do.

We are in the state as we have been with previous technologies. We are afraid and we have to face the front on all of these risks than and we have an optimistic approach to this phenomena. We can't avoid talking about the risks that these technologies have. As any other kind of technology, it is going to be used by humans, humans that can have good intentions and humans that maybe don't have these good intentions.

So for ending, I would like to end with a quote of one of my favorite philosophers, Italian Giorgi Colli. He said modern scientists have not yet come up with something that was obvious, but it is necessary to silence no testing for the. The formulas are dangerous abstracts, formulations capability of fatal evolutions, harmful in their applications must be valued in advance and in all its scope by who has discovered them. Consequently, they must be jealously hidden, stolen from advertising. Greek science did not achieve great technological -- science scars the state and is respected. The State can only live, fight an strengthen itself with the means by the culture. It is something that knows perfectly. The head of the tribe depends from the sourcerrer.

Thank you so much. I hope you have a lot of questions.

(Applause.)

>> JACQUES LUDIK: Thank you, Joaquin. It's great. So we are going to have questions right now? Or afterwards? So I'll do my talk as well.

So it is just getting to the presentation. What I want to do is maybe start with that. So does this work as well? Maybe this is fine.

So I'm -- you describe yourself as not necessarily an open mis-- so I describe myself as more optimistic but also a realist. So I am a smart technology entrepreneur and I built my whole career on artificial intelligence. Did my Ph.D. on recurrent, AI and stuff and started my first AI company.

I sold that to General Electric and I had time to think about next moves afterwards. I got inspired by visionary leadership in the world economic Forum and United Nations and pretty much just looking at what global organisations are doing and some leadership there. And for me, my next, just thinking about next steps is really all about shaping a bit of future in the smart technology era. How can I use AI technologies to actually shape a better future. I'm based in Cape Town, South Africa. And I'm also concerned about Africa. Africa can be left behind. We need Africa to also participate. We can't have that continent that is with all the people there. There is so much promise, so much potential, but there is so much problems and issues.

The question is, how can we use smart technology, how can we use AI, how can I apply even my skills or collaborate with other organisations, with governments, with profitable business organisations, how can we work together and solve the problems? Sustainable development goals, et cetera.

So you'll see, I'm not going to talk about that, but my background in history is really all about that.

What I've decided for this particular talk, obviously we are going to talk about empowering citizens. I will get back to Smart Cities.

The title of this particular talk is really just going back to the start, really about Health, Water, Smart Education & Smart Technology Services for African Smart Cities. We do have the same problem in Africa. You see a lot of people getting into cities. You see a lot of squatter camps. You deal with -- Andrew Funk is going to talk about homelessness. All of those things are very relevant, very real. How do we deal with these type of things?

There are a bunch of other things that I'm also involved in, but one of the things that I've started is, and that is going to be the fourth bullet there. I'll start with that. And that is about AI community and data platform for Africa. We want to knit together the critical resources in Africa to start working together and interacting with international community as well and creating the necessary skills. Not only that but also to get people together to actually help solve problems. So I'll be talking about that brief. Take's briefly out lined.

I'll start talking about AI community and data platform. I'll also touch on health. I know there's a separate tract on that track on that but I'm deeply involved in that. And water. Cape Town, we are experience, they talked about day zero. That never happened, fortunately.

Yes! So we can talk about that. But we are actively looking at collaborating with governments, with nonprofit organisations and also businesses. We've got a company called water mathematics where we are looking at a proper holistic solution in getting realtime information around water losses. And trying to address this in a proper way. It is about operationallizing IoT, AI, big analytics around all of this.

I'll quickly talk about that as well. Then education. I'm also an investor in companies. So invested in some educational companies, smart educational companies. I want to talk about that as well.

Okay. So this was just my way of, we are talking about the 17 sustainable development goals weds. We know that Smart Cities is bringing them together. So on the right-hand there I talk about AI and data platform for Africa. I have a few slides

talking about machine intelligence, institute of Africa. So that is like pretty much focused on AI, data science. I have a few slides on that specifically. You will see the list of the goals there. I mapped it to at least five of the specific Sustainable Development Goals.

Obviously, Smart Cities as well. The last section of this talk is going to be about empowering citizens. We are going to talk about that. We can use that maybe in facilitation of what we are doing here.

So yeah, that is the detail. Let's get into it.

So this particular slide I was just showing the four tracks and how these particular projects that I've mentioned there, how it actually maps to the four tracks as well. I'll skip that, skip that.

So the first thing I want to quickly talk about is AI community and platform for Africa. What is great about what is happening, I started this Machine Intelligence Institute of Africa two years ago. You can go to machine intelligence Africa.org, a nonprofit. The focus is transforming Africa through machine intelligence, AI. I want to leverage my experience in creating companies and using AI to actually solve problems.

What is EMEA, innovative community and accelerator for machine intelligence, AI, research in application. I have a research background. It is very, very important as part of that, but to transform Africa. I am saying transform Africa but it could be other areas, other continents, other places in the world.

You can see here a list of partners. We had some discussions with the World Bank and Gates Foundation as well, but those are a lot of the companies that have been involved in sponsoring events, hackathons, and just a lot of the gatherings. We've got a bunch of projects I will quickly talk about as well that speaks to the Sustainable Development Goals as well.

Currently it is about 2,050 registrations across the IMIA as well. All walks of life, physicists, chemists, all sorts of people joining this. That's that.

I want to quickly mention there is interesting partners, obviously, IBM, Microsoft, a bunch of other companies, PwC, Deloitte, data science Nigeria. We try to hook up with other organisations in this field. We are not trying to compete. We are trying to collaborate. It is about how can we solve problems. We have a good network of people that are very keen to contribute and help.

Actually that shows the growth path over the last two years effectively. A lot more events, lot more happening.

This is showing the collaboration of data source Nigeria, Rwanda, Kenya, other places in Africa. That's great so see. Other African cities. We are trying to communicate -- I'm from Cape Town, but Lagos, Nigeria, Nairobi, all sorts of couples and sharing happening.

For instance, last year we participated in the first data science boot camp. There were 150 data scientists in that data science Nigeria when they started. We had with about almost ten experts from outside, just participating via hangouts to help guide those guys on that side as well. And vice versa. We had actually people there coming to our events as well.

It was really great to see.

If I can go to the next slide. There we go. I won't go into too much detail, but if you go to Machine Intelligence Institute of Africa.org, you will see the list of goals. People submit those projects and get proper funding and sort solving it using the community that we've built up.

And there are some application projects, research projects, et cetera. It is not just us. We have recently, one of my companies, well, my key AI community, Cortex Logic, but there is another company called XU. They started this organisation and we said that is fantastic. We want to have a data platform where we can have competitions, part of what we want to do with IMIA here. We can accelerate that. We have been funding that. That will be awesome if they have proper funding also. We have some projects around that as well. So the next few slides are talking a little bit about that. What the platform is all about. I want to make people aware that in Africa there are people trying, visionary leadership, people trying to execute around gathering things, creating the data sets and doing something about the problems.

I'll stop there. On the health side, so health is such an important area. You know, Bill and Linda gates spent quite a bit of money on diseases and even in western cape, that is a big big problem there as well. What we have seen there is a great opportunity to create a multisided platform environment where we can have producers and consumers and there's data and there's requests. We can facilitate all of that. There is quite a bit of stuff going on with the government, the Africa medical research Council. We are looking at Microsoft potentially involved there as well and other tech players as well.

But we are looking at creating a proper environment that you can do precision medicine, for instance. And we are working actually with Professor Uslanga and biosciences and we are trying to collaborate and see if we can work together to operationalize around health as well.

And with synergy specifically and FIMI as one of the parts of the big and let I can set, it is all about data governance, building by design, that all has to be managed in the proper way. All the unstructured data, structured data needs to be managed. You can create kind of an app store around that. I want to mention that initiative as well.

On the water front, just briefly, water data analytics platform. Obviously it is very acute, the problems around water. The water losses, water is becoming such a big issue internationally, obviously everywhere. The good thing, there are visionary leadership. We have the right individuals that's got basically decades of experience around water and how to do these kind of things. We are looking at water balances, what is going in, what is going out. Aquifers, all the consumers. You go all the way down to the detail level, to citizen level effectively.

So there's a lot of information, but there's a lot of gaps. But this is an opportunity also from IoT perspective to have bottom-up information to get more reliable information around this as well. So very excited about this rouge as well. And then the last thing before I get to the smart smart citizens one. Do I need to point this?

The last one is around education. So that is a major problem. It is a big passion of mine as well. We live in a smart technology era. We talk about a fourth industrial revolution, I talk about the smart technology era. We need to urgently empower the people, the citizens, the people in frac, specifically around the world to actually be active in this world, in this. What we've done here, I think firstly we need the infrastructure. You need access to, I've listed there, everyone should have affordable access to the digital world. That is a big problem in Africa right now. We need to address that.

We need extreme acceleration of 21st century skills and other things mentioned there as well. I'll skip some of this.

This is just ideas around smart technologies, center of excellence, all of that. Actually, how do you expand creating this type of thing around Africa? So there we go.

This is just about my company. I'll stop there. We are all about generating business with corporates. The last bit and this will lead the discussion into empowering citizens as well. I did mention that because it is all importance tan, all those things, water, health, all of those very important for citizens as well.

So this is from Deloitte where they were talking about basically if you look at the recent Smart City trends, about empowering citizens on the rise. It is important to have this

focus. Alexandre and Renato, when they talk about the tracks, I thought it was great that you guys thought about this specific emphasis.

Deloitte is basically saying we need to tailor public services to increase resource efficiency. Well, that's kind of a generic way of stating what we need to do and it was quite interesting. The right-hand side they are showing what is getting attention, what should get attention based on interviews and talking to various Smart Cities around the world.

Governance education, major focus. That's exactly the case in Africa as well. We are going to talk about even if it's corruption and no transparency, talk about the issues around education, it's a major problem. In Africa it's an absolute major problem.

But energy is critical, healthcare, security, all of those are being listed there.

Then this particular slide, Smart Cities 3.0 is talking about bringing it all together. It has to be to solve these problems, you won't just have a business or just have very specific organisations, you have to be a complete team effort. It has to be all the stakeholders, including the citizens to join in and incentivize that need to be part of this. This is emphasizing that, engaging citizens to work in collaboration with private corporations and the public sector.

And last few slides, just quickly. This is Frans-Anton, he was in the previous discussion -- there he is. You must know the vox side in Amsterdam.

So this was kind of their definition of smart citizens which I thought was great. We can obviously in the panel discussion talk about this specifically, but I was quite inspired by this. I think there's a lot to learn. Seems like what they are doing in Amsterdam, I would love to see us apply this in African cities, Cape Town, Lagos, Nairobi, Jo town, et cetera.

When people take responsibility for the places they live and work and love. So anyway, one can go through that, the slides will be made available.

They also talk about this urban fates data flow. You are collecting data, instrumenting -- you can't do anything if you don't instrument properly. This is where IoT plays an incredible role. You measure, analyst, distribute, get take feedback, you look at the behavior, and it is a continuous loop.

Even with companies and businesses when we actually operationalize AI solutions, say, for instance, you are looking at personalized on-demand services and you have all this smart analytic layers, you automate the AI, feed it into workflows or intelligent virtual-r wal assistants. It's a sensor, you can do sediment analysis, and that needs to feedback to the data lake

and operational lies and improve your models. You see the same type of thing here. It's a dynamic system, not just a static thing. You need to update and maintain this.

And this is just to suggest the Amsterdam group, talk about smart citizen approach and all the aims here, they meet, they match, they make, they master, they measure, they measure, and then they mobilize.

And what is great, they talk about the lessons learned and so forth. It would be interesting. Frans-Anton, in the panel discussion, I don't know how much you are aware of this, we can talk about this. This is clearly, I think there's a lot to learn from this.

Finally, what they were advocating here is empowering smart citizens the old way, the government top-down decision making as opposed to the new way, where you talk about bottom up decision making. The past it was kind of a linear approach which is not always scalable. Here we are talking about a nonlinear approach, reducing complexity, encouraging complexity. Minimizing uncertainty, embracing uncertainty, stifling innovation and enabling boosted innovation.

Homelessness thing, this is very much a part of this as well.

On that note I'll end my presentation and hopefully this will help to seed the panel discussion.

You want to say something?

>> JOAQUIN RODRIGUEZ ALVAREZ: That is perfect. Thank you so much. Thank you.

(Applause.)

>> ALEXANDRE CADAIN: Thank you, Joaquin, thank you Jacques. As we mentioned for in very last session, what to give a stronger voice to the audience. With Renato, when we designed this track this day we were very lucky to meet a lot of you that wanted to candy the summit, the global summit. Some projects actually caught our attention. We figured that in a way it would be interesting even if it is quite fast, in five minutes, to hear the projects and see how they can be relevant to this track here with the smart citizens and in the audience we can discuss them.

We have three projects and the idea is to go three to five minutes each. The people are in the audience that will present. Then every one of us in the audience will be able to build on this and try to see it connect to the global conversation with the panel.

The first one to go on this as you mentioned is Andrew Funk who leads homeless entrepreneurs. And we will discuss about his project and the idea is for all of us to see how we can help and how we can scale the project to other cities.

>> Thank you very much for introducing me. My name is Andrew Funk. I'm the founding President of an organisation called homeless entrepreneurs based in Spain and Seattle. What we are doing is empowering homeless people so they can be active citizens again which will make a Smart City even smarter.

The key is listening to people. We spent the last few days listening to the experts to understand how we can use AI for good and keeping in mind SDG8 and 11.

First you need to know what a homeless entrepreneur is, a person willing and able to tell his story an work to get off the State. With human intelligence we are able to reach 20 to 30 percent of the population. The first year we hoped one better than get a job and off the street. Then four, 16. This year we should have 156 people in the programme. The scalability, it is doubling every six months.

In large cities we can reach up to 1,000 people in five years, being active citizens. In order to scale the solution on a global level, I and Smart Cities must play a key role. A Smart City will be even smarter when we end homelessness inside it. The AI platform will be a decision making tool to enable greater accuracy when measuring the number of homeless, their situation and what they truly need. This will determine resource gaps, provide data to qualify cities an countries for greater support sphr federal agencies and philanthropic funds.

This information translates directly into funding decisions. Outreach workers, homeless people and society as a whole need the information to be as precise as possible to build greater trust in society and ultimately fostering active citizen participation.

Two quick success stories. With the IDB, I was in Haiti working. We got a contact through LinkedIn looking for a m practicer. One person in the programme got the interview. He got the job.

He is now working. He became a father three months ago. He also dough 58ed 10 percent of what he made to reinvest in people like him in the future programmes.

Another person was in front of mobile world Congress with a sign that said he is a technician that is working in Telecom and unemployed. Thanks to that network he got a job and he's currently getting his third paycheck now.

If we use AI we can scale that on a global level. This is the most important thing.

The last thing to explain is how do we do this? Data collection. We provide free smartphones. There are -- everyone here probably has two or more and more in their home. We provide them with smartphones and straibility. They turn a liability into an asset in which that person has to participate

on a weekly basis getting data that cities need, that countries need, the U.N. needs, everyone, so that way we can come up with better decisions with homeless people, with the people that are running government, and volunteers on the sale level.

The most important thing here is matching. In order to match, we have to make sure that people can make better decisions. Companies want to hire the best professionals. They don't want to hire people because there's a discount of 50 percent. That is not sustainable.

If we are able to get I had rid of all the waste in which people are wasting their time doing circles, going around in circles, there's less trust in the homeless community that wants to work because there is 20 to 30 percent of the people that are homeless but they are professionals. I myself was homeless for a year and a half. And I had 35,000 contacts online and entrepreneurial spirit and the desire to get off the street. I was able to solve my situation and we hope to connect with people during AI for Good and scale it and make sure there are other people besides myself plaining it. Thank you very much. That's it.

(Applause.)

>> ALEXANDRE CADAIN: Thank you very much for the presentation of this project. What we will do to make sure that we get in the global conversation with the five presentations that we have is continue with the next project and the last one and after that we will have a chance to try and figure how all of these might connect and how we find solutions together for the last minutes together.

We will go now with team Anderson having a beautiful project also to present.

>> AUDIENCE: (Speaker away from microphone.)

>> ALEXANDRE CADAIN: Yes, if you want. The idea is to present your project and just to find a way to make another call to action for the audience and see how we can be of help.

>> AUDIENCE: About a year ago I moved into a housing cooperative and I had to sign a charter that said I wouldn't own a vehicle. And everyone else did at the same time. We just had to get organised to share vehicles. Was very difficult. The insurance companies did not -- didn't know what to do with us. How we were going to buy a car. We had to pool our money together. It was a long, drawn-out experience.

In the end we put it into place. We've got, inStead of 18 cars we have six. We have three businesses that have joined us recently. So we saved a lot of urban space. That's one of the arguments for this is urban congestion, get rid of the cars in the streets. Every car takes 115 square meters. We are creating a set of tools that will allow all of you to do the

same thing. Open source, a little open source box that you install in the car you are going to share and a back end that is open source that allows you to sign up, think of all the right things like we did. We had to learn from bad experiences. And then manage your car as a common good. That is the important thing in this project, the car is no longer the property of one person. It is the property of the group. That requires a bit of respect, learning to live together. You have to set up guidelines governance. It is, as a citizen it is a good experience managing your own mobility.

What has happened over the last few months, the families that didn't think it would ever work have joined us. We started, when you pay per kilometer you start recognizing how much it really costs for the car. Paying every month, your gas, what have you, you don't know. People change the way they think about mobility and move to other forms of mobility. We have transport passes in the pool. We have car go bike, two car go bikes, electric bikes. We started thinking of mobility on the whole in an urban environment. So it changes the way people behave.

So that's about all I wanted to say. Thank you.

(Applause.)

>> ALEXANDRE CADAIN: Thank you both of you for keeping it short.

And then everyone can then try to contribute.

The last project that we wanted to hear, here in the audience, is one that Kenny Chan leads that you may have heard already in the previous questions. I don't know if you need the mic? This one?

Kenny Chan is active in the City of Pittsburgh and would like to share a project with us.

>> Absolutely. I am not from Pittsburgh but have been living and working there the last three and a half years, the most exciting three and a half years I have experienced. And I think it might have been the case for the city itself. For those of you who aren't familiar, Pittsburgh used to be an industrial powerhouse and it had an entire steel industry collapse towards the end of the 1970s. The past 40 years has been essentially trying to rebuild itself. And it has been succeeding in a lot of ways through investments and education, healthcare, research, robotics, all of those kinds of things.

And our current mayor, who was inaugurated in 2014, had a lot of very progressive policies that I think might also be helpful in framing the discussion around Smart Cities and empowering smart citizens.

His first day in office he laid out a vision of essentially what he called an inclusive innovation roadmap. The whole idea

being under the moniker: If it's not for all, it's not for us. This rebuilding of the city with all these investments in AI and robotics and what not but also very keenly aware of impacts on the most vulnerable in the population, homeless, refugees, et cetera, in the city.

The roadmap had six specific components, one being to enhance the city operations, update 23 departments worth of IT infrastructure and to ensure that security, privacy, all of those kinds of things were actually working. It was very important, number 22, to connect citizens with the city government. Enabling different Forums and access points, Town Halls, multilateral opportunities for people to be directly involved in the civic poss happening in the city.

Another one was to close the digital divide. And really look at internet access as a right within the city and make it so that between public spaces and libraries, everybody has access to the internet as well as education around digital literacy. And I'll skip some of the others, but I really want to emphasize open data as one of the things that he signed into, mayor Peduto signed into open legislation his first day in office. I was able to help the city build its open data infrastructure and that in and of itself ends up having a nice cascade of additional effects as different departments and partners are engaged in that process of digital transparency and having machine readable data outputs and what not. Everything from the police department to zoning and housing and people making applications for businesses.

So we are happy to talk about our processes for that.

There's probably what Pittsburgh is best known for is applications for AI and rhos right now. We have six autonomous vehicle companies having their vehicles drive on the road. One of which, Uber, has been taking passengers. And those are done in collaboration with research universities and other programmes that are simultaneously piloting technologies around smart street lights to mitigate congestion. I think they've already reduced congestion by more than 44 percent by just timing things and applying AI and computer vision, ensuring that smart street lights and other things are in place for IoT infrastructure.

And finally, I'll just say that Pittsburgh has found a way to take the values of the SDGs and take ownership in its own kind of way. So a couple of initiatives, one is called P4, which reframes a the look of those values in the context of people, planet, place and performance.

And then there's also a 2030 strategy that is really centered around resilience and I'm also happy to follow up with people on what that all looks like. Thank you.

>> ALEXANDRE CADAIN: Thank you very much.

(Applause.)

>> ALEXANDRE CADAIN: Thank you so much. We introduced the day saying we wanted to stress the idea of smart communities and Smart Cities as places which are a place for effect. There are real projects coming from urgent needs within the city for the purpose of these interventions also.

We open to the floor. Any questions? And obvious also we would like to stress one last time the fact that we would love it if you have any contribution that you think might be relevant in terms of helping us framing one of the problems that we mentioned, helping us scaling solutions that were designed and proposed to you.

So if you have any questions, open your mic and be glad to try and answer.

>> AUDIENCE: I would like to ask Joaquin a question. I'm curious about your understanding or thoughts around liquid democracy, if you have been following that movement and whether or not you think that could be a useful tool to engage citizens more in continuous democracy rather than once every four years.

I assume you are familiar with it. If not, I can explain.

>> JOAQUIN RODRIGUEZ ALVAREZ: I believe that we are living in a moment where democracy is a state, democracy is in crisis. In a moment where time goes so fast, it is absurd to believe that voting every four years it is a Democrat can citizen. We have to advance new forms of participation and encourage citizens to take part in policymaking.

The real problem with so many of these experiences is what are you allowing the citizens to decide? Because we have seen so many cases of citizen empowerment in the last years. We have seen crossed by the police, empowered citizens in Hong Kong, citizens in Barcelona, and police and citizens in Gaza killed with impunity.

The real question we are facing, what is participation and what are the key questions that should be asked to the citizens? And the problem that we are living with liquid democracy, from my perspective, it is -- we are living in a filtered battle. We have limited information about what is happening and it is easy to nudge people, to manipulate and generate -- we should put away the pollution in information. This is one of the most important things, move the information pollution away. Have more clear ways to let the people know what is happening, to generate knowledge. There is a theory that it is a post normal science, elaborated by Jerome Robinson and Sydney Funkowits. They have what they call peer review community, like the scholar community but with citizens. There is no difference between the experts and nonexperts. The most important thing of this experiment, the communities will generate the knowledge about

what they will be discussing after. This is one of the key points for me.

>> AUDIENCE: I have a question for you as well. Just in terms of, you mentioned in your talk what type of data should not -- should we be careful with? You said we should -- yeah.

>> JOAQUIN RODRIGUEZ ALVAREZ: In relation with the data, I believe that we are not talking about pollution data. We are not talking about traffic data. We are talking about personal data. We are talking about religions, sexual orientation. We are talking about these kinds of things.

But it should be prohibited to be asked, to be gathered. But even with algorithms we should develop and we are studying this in the university and with other research groups, how to avoid those systems that indirectly allows you to know the religion, the ideology, et cetera, et cetera, because about the data we should ask ourselves why we need this data, why are we going to use this data for? And it is very, very difficult to just define the religion or the sexual orientation and know these kind of things. Private companies don't need that. And public administrations neither. So this is a debate that we should have, generating the regulatory framework in this aspect. It is one of the key points that we should talk and be in a hurry because we are getting late.

The problem is that we don't have one or two years to make this debate. We need regulatory frameworks right now.

>> JACQUES LUDIK: I see the will pigeon hole is updated with questions? You are most welcome. Okay. So there's a question, Joaquin, your last slide suggests that major scientific breakthroughs like AI should be kept in a safe place.

You want to expand?

>> JOAQUIN RODRIGUEZ ALVAREZ: I believe that we have nowadays like a kind of weird fetish with innovation. We understand that innovation is positive. Innovation is not positive neither negative. But it is important what we do with this innovation. I mean, we can talk about the atomic BOM. We can talk about the -- bomb, the Terminator gene. They are things that are not empowering communities are or making our democracy stronger.

AI in these stage of development, of course, we can not hide it from the public, but what we should do right now is establish a strong framework and have very, very clear in our mind the sets of data that cannot be gathered. I am not saying that we should not use this technology. Of course, we Shu. We have it. All of you, you are presenting amazing projects, some of them really impressive. I am not against that.

But we should be careful. In the actual society we are all in a hurry. I see it with my students. We have incubators,

places where they can develop. And they have these two things, the competition, if I'm not going to do it, another one is going to do that.

And we don't have a strong collaboration between technicians, between scientists, data managers, et cetera, et cetera, anthropologists, philosophers, et cetera, et cetera. We need to create a common ground for all of us. We need to elaborate in multidisciplinary things and we need to develop strong ethical commissions in all projects developed. This is a theme that is not a recommendation that should be a massed especially when we are working with very, very sensible materials. Because data is very, very sensitive, can be used for good and can be used for wrong. And we have the responsibility to avoid this bad uses of technology to the extent that we will be Abe.

>> JACQUES LUDIK: Andrew, you talked about things you mentioned. Do you want to mention some things that you are looking about, the specifics?

>> Andrew Funk: Can you repeat that real quick?

>> JACQUES LUDIK: You talked about some very specific things that you are doing to actually help solve specific problems, practical things that --

>> Andrew funk: Probably the most practical thing that can be done is using what we have in society, turning passive into something active. You have according to the U.N., 100 million people necessity 2005 that are homeless. Are they in a database? Do we know what they need? And I think the answer is no.

So what we need to do is than the data, structure it well and look for patterns to see how we can help. Obviously there are issues of good and bad. Let's pretend we want to do something positive with it. In my opinion if we are able to collect the data -- and we can do that -- governments, U.N. agencies, local and national NGOs and homeless people can participate. We can take care of getting the data of the 40,000 homeless people in Spain, according to the INE, by asking people to participate.

But adding value. We are not asking the right questions. We are not asking the right people. And we are not coming up with the right solutions because of that. So I think platforms like AI for Good gives everyone an amazing opportunity to share ideas, to figure out they can actually comply and make sheas SDGs something more than a pretty pin.

That's what we are trying to do. We are a small organisation, but the objectives are quite clear. And we believe that you have to empower the people you are speaking

about. When I was in Davos for the world economic Forum we slept in a teepee, 6 below zero, quite cold.

But we wanted to give a voice to homeless people and be company herein. We can't speak about poverty and about how we are helping people without including them in the conversation. I slept out in the street in Geneva and that's uncomfortable. It was raining the first night. The benches are not made for that.

I spoke with a guy who is dealing with urban innovation. Imagine using smart technology to solve that problem. So I mean, to briefly respond, I think we have to empower the people we are trying to help because we will be surprised how intelligent they are.

>> JACQUES LUDIK: Thanks.

A question there?

>> AUDIENCE: Hi. My name is Mara, founder of gringo web. I would like to take the opportunity, the gentleman said we should put projects out there. Thank you, there you go!

So we tried seven years ago with indemnifications, engaging employees here in Geneva, multinational employees to save resources in a fun way. Behind the game was an app. You had certified statistics that you could embed in your CSR reporting. So that was five, seven years ago. Today we are talking about citizens, smart cities and talking about obviously what I'm talking about is sustainable development and looking at Cape Town, we see the water issue which know there are 20 other cities on the map that will face shortages in the next few years.

What if we could use AI to speed up the data processing and have smart dashboards and use also AI to collate the data, the weather satellite data, resource measurements and instead of having people use their bikes or walk to work or what not, put them all on the same challenge like okay, now we are on the water challenge. You are going to take a shower, cut the water when you brush your teeth. Shower with your friend, et cetera, and then anticipate the shortages we are going to be facing by motivating, engaging citizens in a bottom-up way and then use AI for what it is worth: Speeding up and increasing the impact at the pace that we need today. So is this -- of course, we could use looking at the challenge, we could have a challenge for multinational, schools, governments, everyone and use block chain to certify, use block chain to certify the savings and give back tokens to citizens to be incentivize them and have them collaborate, give them tokens in the form of -- so create a virtuous circle, engage citizens and then in turn act on resources and in turn get rewards that the government can use back up, so on. This is my idea.

Yesterday PwC announced that they launched, what do they call it? Putting AI to work for the planet? Seems like we are in the right place to do something.

>> JACQUES LUDIK: Absolutely. That is very relevant to things that I'm actively involved in as well. Business and nonprofits things as well. There is a block chain company guy who is also thinking about these kind of things as well. Quickly, we've experienced this in Cape Town where they actually give very specific targets to citizens around how much water can be used and you get high penalties if you exceed that.

The big problem is more than 50 percent of the municipalities, they can't account for water losses. They can't, if you look at the water balances, what is going in, what is going out, it is a problem.

So we need to instrument better and we need to manage the whole thing better.

We need to have it realtime, not two years after the fact, that type of thing. So there are things happening right now to try to address this.

So if you feel the pain, there is' entrepreneurship and people want to solve it. You will see this in Cape Town. Gamification, all of this, when I talk about smart technology, it's all of it, IoT, block chain, everything. It's our toolbox. We need to provide solutions.

Good comment there.

Yes?

>> AUDIENCE: Hi, thank you. I wanted to make two comments. Firstly because we were talking about the inclusion of citizens. I wanted to acknowledge that actually as we were discussing all of these projects, taken up by citizens, that shows that we are actually doing that. I wanted to thank all of those people actually engaging in doing this. Definitely, traditionally it would be the role of the government, policymaker, et cetera. Now we are seeing massive progress in this respect.

The second comment I wanted to make is, there is information to give you. As we are talking about the right governance structures, that the future is coming. We recently launched a global initiative in the U.K., it was launched on behalf of the AI group of the parliamentary group in the U.K. on AI. That is exactly to proselytize to engage all of the stakeholders, citizens, the groups to look to the vision that we want in the society globally and to look into that structure that will help us deliver that, making sure that the right policies are designed for the right design in the future.

>> JACQUES LUDIK: Yes. Any other questions?

>> JOAQUIN RODRIGUEZ ALVAREZ: Maybe we can take a question from the questions online sent to the pigeon hole?

>> JACQUES LUDIK: Okay. It is not being displayed there. This was the, we already talked about this one.

We already talked about this one. Please, feel free to use the system.

>> I would like to appeal, rather than questions, any other latent best practices or project ideas, things that have been piloted in anybody's respective domains in cities that might serve as a good either play book or test case for us to consider? Especially for the organisers that are trying to find tangible projects to pursue after this. So please don't be shy.

>> JACQUES LUDIK: Yes?

>> AUDIENCE: I would just like to, I'm a bit naive. I think that often what we are trying to solve here are somehow symptoms and there are a few attempts to go to the roots of the problems. But we are trying to work at the symptoms very often. Like I don't know, we have problems in universities. So we put video to surveil. But we don't try to understand why we have those problems and go to the roots.

I agree totally we need regulations, but with the society we are creating access to AI is becoming very, very easy. Access toe genetic manipulation -- access to genetic manipulation with crisper, it is hard to regulate things unless we motivate people into adhering to a common sense.

I think it is also important to invest how ... (Speaker away from microphone.)

(Microphone failing.)

>> AUDIENCE: That type of reflection.

>> JOAQUIN RODRIGUEZ ALVAREZ: Yes, for example, one of the main things here is precisely to look for partners, other universities, citizens, organisations that want to join this common effort. I mean, in ICRAC we are focused on weapons with full human control but we are trying in the cities we operate, in living cities we have operations right now in more than 20 cities worldwide. We are working hard with public administrations in order to establish ethical guidelines, regulations because we know the lack of global regulation.

And we want to advise the problems and we want to address the philosophical, technological regions of the problem. This is one of the important things that I believe we have a responsibility to do before it is too late.

>> JACQUES LUDIK: I want to add, one needs to focus on specific, you are talking about autonomous weapons, that is an area that needs to be regulated and managed carefully from all sides.

I think there are so many good applications as well. One needs to decide what do you regulate and what do you not? It is

not like nuclear power. It is open source. You have the technology available. It is up to us to use that.

So I think it is going to be not simple.

Any other contributions? Comments?

From the block chain guys there? I know there's a lot of visionary leadership.

>> AUDIENCE: (Speaker away from microphone.)

>> AUDIENCE: Okay. I suppose, so, yeah, we are from block chain company.info. The first thing we wanted to do is to actually help people discover the block chain because when you ask people about it, everybody knows what Bitcoin is, but the moment you mention what is the block chain, people get very confused.

Now, we believe that the block chain would actually help organise or re-organise a lot of the problems that we have across a whole spectrum of industry as well as communities today.

We are taking a very long-term vision in terms of how we evolve the ecosystem that we are building, starting from the discovery platform that you see, morphing into a live broadcast trust fund utility that would explain the impact of this new technology and going on to, one of reasons we came here today we are intrigued about things like Smart Cities. We were in Cape Town two months ago where we actually met he Jacques and some other people.

The water shortage problem is something which is impacting other parts of the world where we think that block chain can actually help solve problems such as that, like the lady here talks about, as I mentioned earlier on, how you can tokenize situations like that. We have to use the block chain to provide incentives to our citizens and communities. They can then use those tokens because they are incentivize to limit the footprint, the carbon footprint, for instance. Consume less water or wastage. Even in fact for instance I was listening something by IBM, I think it was, that suggested that plastic waste has actually, or plastic has become valuable. There is a way we can probably start to incentivize through tokenization our global communities where they collect plastics that can then be reused in lots of different ways.

In terms of -- unfortunately we missed some of the speeches earlier on. When I look at places like Africa or parts of Asia and South America specifically, there are emerging economies, is it possible that we can help develop what we might call smart neighborhoods? Why wouldn't we use revolution -- industrial revolution technologies to transform ghettoes or, I would like to see Andrew funk focusing on homeless people, it is important that AI is going to eliminate jobs but if we use it effectively

combined with a block chain, it is possible that we can really move towards what we call that type 1 civilization. I would like to know from Jacques and your colleague there again is, are you going to seriously considering block chain as a tool for good to augment that with artificial intelligence to help organise and solve a the look of these problems?

>> JACQUES LUDIK: Definitely. As I alluded to earlier, you can see the talk as well, but I specifically -- the way I'm looking at it, it is a smart technology toolbox and block contain has a very dent role to play. -- block chain has a very definite role to play.

We talked about governance as well and privacy and all of that. Who gets access to my health data, for instance. That is another example of where block chain can play a great role. At least on a transactional level, who gets access to what. You can think about property, so many different things. And I think the whole reward mechanism is great. So it is clearly part of the solution. For me it is one of the technologies that we should be looking at.

There are talks around decentralized autonomous systems and AI. James Mccon Hugh tomorrow will be here to talk about those kinds of things as well. You'll hear more about block chainknow*.

>> JOAQUIN RODRIGUEZ ALVAREZ: I think block chain is also a promising technology. As any kind of technology, it has its bright side and dark side that we also have to be taking care of. It is true that it can allow us to follow transactions, it can be used by government for transparency and amazing in many ways but if we have radical application, there is the privacy of the individual and how we can track our own personal transactions, as humans. Not public institutions that need to be transparent but as humans we need to have shadow aread around us. We all have secrets and we need secrets to survive. We lie to survive so many times in life. Block chain can provide difficulties sometimes so we have to pay attention to that.

>> JACQUES LUDIK: I want to add to that, so my message, one of the purposes how to shape a better future. This is, so we can use these technologies. I think block chain specifically is great to empower citizens. Because it decentralizes.

AI can be utilized to help navigate smart cc contracts and all of that. We can shape that as well. We should use that as human species to have a better quality of life. On the first day there were talks about also visualize what that future looks like. Even if you think about homelessness, that future problem would be solved there, how do we get there? What are the steps?

When I talk to companies to be AI first or more data driven, you think about the KPIs. How can they monetize data? How can

they actually thrive in the smart technology area ra. You start with the end games and outcomes. What is necessary? What are all the blocks I need to help solve this problem? It is the same here with empowering citizens. Let's use these technologies. We are doing it. It is a good thing, there are people doing.

Frans-Anton, you have a comment?

>> FRANS-ANTON VERMAST: Yes, I would like to add to that. If you combine block chain with the ability of people you will be able to match command and supply much easier and I discussed it this morning with Andrew. Homeless people, they have one thing a lot and that is time. And they know the city very, very women. So use that ability instead of looking at them oh, they are homeless and they have a lot of disabilities. And this is also one of the systems that we look into in Amsterdam. There is a certain area within the City of Amsterdam that they are, let's say there are 100 people entitled to social benefit. But there are also other benefits they are entitled to. But they are only using 30 percent of those benefits. By using block chain, by matching that profile according to other people and matching that with the benefits they are entitled to you actually give them a better life. And in the past cities or local governments would say oh, don't try to encourage them to come to social benefit because that is going to cost the city a lot of money.

But in the long run if people are not happy, they are costing society much, much more money. So I totally endorse your approach and the way you carry out things there.

Yaks jacks awesome, great.

Any other comments? Questions? Yup?

>> AUDIENCE: I have been following the conversation. I'm amazed at the language being used, to be honest. It feels for me 1984 George Orwell. Everything is for good, about empowering people. The government is almost, a naive idea that technology is going to -- I am a technologist and a designer, but if Google says do no evil, let's not be naive. If you design the car, you design the car accident. We have to be careful about block chain because we vote for somebody and that vote can be there forever. That person can, you have seen a lot of strive, seeing people taken by ethnic groups, ethnic cleansing.

I am wondering maybe this is something we need to think about, the vocabulary. There is solutionism in the room and we don't understand the social problems. I hope we have more rigor in understanding the problems instead of jumping to the solution.

>> JACQUES LUDIK: I fully agree. I read an Article about Henry kissinger and I posted it on LinkedIn, the end of

enlightenment. He was saying that we are not thinking, there is not enough time to think. And to, women, there's a lot of information that you just need to handle and it is not a lot of thinking going on and a lack of proper context. It is important what you are saying.

We need to think about what is the I impact, what is the effect of what you are trying to do. We should put a lot more emphasis on that. I also agree with the terminology. Maybe that terminology needs to be framed around a bit more thinking so you can think about the impacts.

>> AUDIENCE: One of the things, sitting in the ITU and there were discussion in the boring end of the day, standards. A lot of people talked about establishing stldz, there are multiple organisations. I don't think we need to be that naive. There is a lot of good work and expertise. We need to build up on the work that is happening and see how to tap that and do the real world examples like my colleagues have been talking about, how do you operationalize the work done in this room to real world models, all the stuff that has been done and take it to the next level. Every time we come to a conference like this you see new projects and a sense of people forget there's a lot of work that already has been done. How can we stand on the shoulder the of giants and at the same time move the work forward.

>> When you go to hackathon, for example, on the Smart Cities or like the people that they are working with, I mean, the global scale and the global scales, one of the things that they really don't think about the business part. But the thing is, if it is not profitable it will die at some point. There are too many psychologists that can help you for the homeless people. But if you are not paying them, it is not just the taxes that people paid and then it should go for them. I think if you are developing something, if you can have services for other places other companies, you can make the money there and apply it here and also make that community also profitable.

And the lack of having a business, a clear business plan usually just killed them after a few years.

>> JACQUES LUDIK: Yes, sustainability is very important, yeah.

So I had a discussion in London as well and they talked about data studies, looking at problems, empowering the people to help solve it, about you they want to make sure the whole thing is sustainable as well. We are actually looking at collaborating with them, creating more sustainable things. You have people empowered who can actually use the skills and continue with this. So yeah.

>> AUDIENCE: If I can respond? We focus on generating value with them. So we are not hanging out waiting for subsidies by the government. For example, if they do day labor, we split the benefit of what they do fifty-fifty. And that greets invested into the system.

If we get a part-time job, 10 percent. We are creating wealth with them. Related to the scientific thing we have the university and we are defining a scientific formula of how to create work with homeless people with a board of 20 international professionals. It is not trying to Microsoft them without a business model. The business model is what will make it sustainable. We presented to the Rothschild foundation and the main thing is, how do you get rid of donations?

>> Clearly you have the business plan because also one of the first things is to know the market. Like the people that they are working object and the best thing is to just go to them and see what is the need and how we can improve. For example, I don't believe that the homeless people have time. If you don't sleep at night, I think you cannot work during the day also. And when the quality of the life decreases, then even that time is not that useful.

So yeah, that is well done.

>> JACQUES LUDIK: Yes, quality of life. There was one final question.

>> AUDIENCE: It is actually more of a statement. I am originally from Rio like renne take, so thank you very much for leading and power to you in this session, I'm attending a scientific descrition across the roavmentd Renato asked me to describe my work in block chain. I am running a conference series in Switzerland, fifth edition, three day roundtable that brings people from all around the world. We are taking that worldwide. If you are interested in something like that, please do let me know.

The second thing is a publication of a quarterly journal which will be peer reviewed by the alumni of my conferences. That is coming up this summer. I am also working on the block chain documentaries. We will be doing block chain in specific industries and we intend to do block chain and Smart Cities. I have other things to talk about, but if anyone is interested in those three topics, grab me at the end of session. Thank you very much.

>> JACQUES LUDIK: Thank you, back to you, Alexandre.

>> JOAQUIN RODRIGUEZ ALVAREZ: We could talk about this for but we have to unfortunately end this session and end the day also for the AI For Empowering Smart Citizens. This is good to show that we want to build a good project, that was the purpose and make sure we can work on standards, the purpose of another

session tomorrow which is about AI AI comments. The purpose of the session will be try to find within all the tracks that has been basically working all day, what are basically the best practices that have been identified, what data we should work on, what should we be prioritizing. I invite you to be part of this tomorrow. It is a way to summarize a little bit of what we have done today and see the connects between the tracks.

And a lot of people came up to me asking for the presentation is and contacts. So we were discussing, I have created a chapter with the three months organisation of this track. We invite everyone who wants, we have a chapter owe in LinkedIn. Connection with me or Alex in LinkedIn and we put you inside the chat so you are going to be connected with all the speakers. The idea is to not finish here or tomorrow and to keep cooperating. I think that is the best way. Let's use technology for good, right?

Thank you very much. Well, we have the final part now tonight of the social part of the event and tomorrow morning you are going to be here again. Thank you very much.

(Applause.)

(The session concluded.)

(CART captioner signing off.)

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