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AI FOR GOOD GLOBAL SUMMIT

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POPOV ROOM

COLLABORATING AND INVESTING IN BENEFICIAL AI

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    >> So this next session will be moderating by Frits

Bussemaker, who is a member of the (?) Committee for AI for

Good. Please.

    >> FRITS BUSSEMAKER: Good afternoon, everybody. In this

session, we are going to share some examples, some great stories

of how organizations, countries are investing in information

technology. And I think that also applies very much in what's

happening, what information technology is causing at the moment.

In the 30 years the Internet has been around, we have shifted

from this command and control to this connect and collaborate

model. So it's very important now to look at what do we have in

common, how can we share, how can we collaborate. So we have

three stories.

    I would like to welcome the three panel members. First of

all, Mr. Ahmed Al Theneyan, the Deputy minister for technology.

We have Mr. Amandeep Singh Gill, the representative here for the

Conference on Disarmament, but will talk about capacity on Task

Force on AI and how that's going to change the economy of India.

And thirdly, but not least, David Li from China, the Foundation

of Shenzhen Open Innovation Lab.

    We will first get an overview about five or ten minutes each

from the various speakers on what they have done to invest in

AI, and then we'll get some questions from the audience and the panel.

I would first like to hand the floor to His Excellency Ahmed. May I invite you on stage.

>> AHMED AL THENEYAN: Good evening, ladies and gentlemen. It's a pleasure to be here among you. I am very glad for what we have seen in this Summit, and I hope that we have something to do together on collaborate for the good use of AI.

No doubt about the role that technology advancement is playing in our life, in all aspects of our life, and emerging technologies, mainly AI, comes at the heart of this disruption, driving greater productivity and innovation around us. The economic impact globally for AI is tremendous. It's expected to come up with a cumulative $15 trillion GDP between now and the year 2030, and with a potential of 30% reduction in the production cost. In addition to jobs creation, as well as the impact that it's going to have in supply chain as well.

In Saudi Arabia, there is ongoing transformation and economical form. The country has never, ever encountered such a major transformation. It's impacting our nation, our society, as well as our economy. With the major reforming and economy reforming program. And definitely technology is a key enabler for such program. And for this we came up with our strategic digitization direction based on six pillars and four phases. The pillars, first we start with infrastructure, so we aim to

build a reliable infrastructure that supports all the new technologies that we can use for this transformation. Then after that, the digital skills, which is our key pillar. So we aim to build digital skills, and our target from now until 2020 is to train at least 20,000 of our local young talent in technologies, mainly in emerging technologies, and to create at least 20,000 jobs in emerging fields.

After that comes the technology industry, where we aim to build a healthy localized technology industry that supports all these programs, all the transformation programs will definitely require technology, and we aim to provide it from our local supply. And our target not only to satisfy our local demand but also to start exporting our technology globally and internationally and compete with leading providers.

After that, we have the innovation part, as well as the open data part, which is the new field. So we are here to promote innovation and entrepreneurship. And we would like Saudi Arabia to become the most attractive destination for innovators as well as entrepreneurs. And for open data, we believe that data is the new field, and we are there also to monetize data further.

Last but not least, eGovernment -- efficient government and eGovernment. For the phases, we have taken a gradual approach starting from building the technology, then enabling, then transforming, then after that innovating.

For that, we are exploring the use of AI, but we would like

to use it in innovative, responsible, as well as ethical ways. We came up with objectives that align with the Sustainable Development Goals that the United Nations has put, which include but not limited to sustainable cities and communities, citizen health and well-being, quality of education, decent work and economic growth, innovation and infrastructure, as well as gender equality. And I will try during my speech to elaborate on these areas.

As a policymaker, the government is playing active role in developing AI and ensuring the creation of the most supportive ecosystem, which includes legislation as well as rules for AI to adopt well and to make sure that we are having the best use of AI. So we are providing the much-needed support through key players, which include government, legislators, funding, as well as talent development and needed infrastructure. So far, the government has injected around $3 billion to build the infrastructure, not only to be an AI ready, but to be pioneering and leading in the AI.

I will try to highlight a few examples. Maybe some of you have heard about new which we have announced recently. It's a 500 billion greenfield intelligent city, over 26,000 square kilometers. Okay? So this city, everything in the city will be about intelligence. Everything will be about AI and IoT, so it will have intelligent homes, intelligent factories, intelligent schools, intelligent roads, and this is to improve the quality.

The city is also using a clean, renewable energy. And this aligns with the SDG goal for building sustainable cities and clean energy.

There is also another initiative, part of the municipality transformation, in which we are trying to take five cities to be among the top cities worldwide, and this will involve also the use of AI to make these cities more smart and to improve the quality of life for our citizens as well as our residents.

Another example when it comes for citizen well-being, and we are investing heavily also in AI in this area, so our Ministry of Health is partnering with leading international providing and building innovation centers to explore developing solutions to address chronic disease such as diabetes and other diseases, and to improve the health of our citizens. Also, we have anala, which is a start-up project, which we got incubated as part of innovation platform. We have an innovation platform which from time to time we raise challenges. One of the challenges about the health sector, we came up with NALA, which is also trying to support people with chronic disease to deal with their diseases and using the artificial intelligence.

Also, with Papillon, there is collaboration between our Ministry of Health and Papillon to explore AI in healthcare preventions.

Another one is led by (?) in partnership with Stanford in which we are trying with the support of AI to stud the behavior

of the deep sea coral reefs in the sea.

Another example, what we are having, what we are exploring also for the citizens' well-being, we talked about the Papillon, we talk about the innovation centers. We are also exploring the automations and enhancing the whole ecosystem to improve productivity and also the quality check for our health system.

We are investing as well in education. We believe that building digital talents is an essential. For that, we already put a program to enhance our K-12 education to include digitization and to prepare our citizens for the job of the future, as per with the current skills, 35% of the current skills will disappear by the year 2020. Therefore, we need to be prepared for the future skills. Future skills talk mainly about AI, data scientists, and protecting this data, which is the data security.

Therefore, we start revamping our education system. Now we are introducing digital skills at early stages from K-12, so our young generation, they will start learning digital skills from early stages, as well as we are revamping our educational system at universities by having a Krull and a career path in the new, I would say, skills that are needed for the future.

We have also put a program for training. Our commitment until 2020 to train 20,000, we have already started this program. So far we have trained around 7,000, and most of the training in the new emerging technologies, in AI and IoT and

data scientists and data security. And the aim is to prepare our younger generations for the market needs.

In addition to that, we have many partnerships with global providers in building digital accelerations and innovation centers, where our young talents, entrepreneurs also can come to the centers and start learning about new models that the market needs or the vision needs. And this has helped us to make sure that whatever they are learning in school is becoming more practical.

When it comes to gender equality, we believe that we need to empower women more in the ICT sectors, and we have already started this journey. So we have put extensive programs to do training for our female talents. Currently around 45% of our graduates in computer science are female, so we have put special program for our female talents, and we have put special program to accommodate them in the ICT industry. We put a target to double the participation of our female talents in the industry, and so far our numbers are progressing well in their participation, and this has been done through extensive program, done in collaborations with university. And we are proud that at this summit we have our leading female AI specialist showcase of their work. We have with us, for example, a currently (?) at MIT, and she is working on AI on blockchain, and some cases in the health sector. We have also (?) focused on trust for legislation in AI. She is working on that track. We have also

Hadil Ramshy who is working in the health sector and the supply chain. And we have our colleagues from Ministry of Health, Mona, who is leading the VRO and leading the transformation in the Ministry of Health.

We have a commitment, as I mentioned, to double women in ICT, and so far we have -- it seems that we are going to achieve this target even ahead of the schedule, so we are going to also increase it because we have seen great progress and great adoptions in the ICT market, and our female talents are doing well contribute to go the market.

When it comes to innovation, we would like to make Saudi Arabia the most attractive destinations for innovators and entrepreneurs. For that, what we have done, we have put special programs to promote innovation and entrepreneur culture. Starting from early stages at education, where a student will start working about entrepreneur and innovation, and we have also built in collaboration with the private sector a network of innovation centers, where the students sore the entrepreneur can go to this network and start working on a practical model that the market can adopt, and these hubs also are linked with some international hubs. So whenever we participate with a multinational company, we have the center established in Saudi Arabia link also to their national hub, and this has helped us also to share experience and learn about other models that they are building in other countries and start benefitting from the

same.

So we believe that collaboration is essential, either at the level of government or with the private sector. As government, we cannot work alone. We look forward to further the spirit of partnership at the event. We were very glad for the meeting that we conducted with most of you. It really enlightened us. And we see a huge potential as a community we can work together because the adoption of AI I think is still at early stages. The most important thing is that we work together in collaboration to put the right legislations and the right governance in place.

Thank you very much.

(Applause)

>> FRITS BUSSEMAKER: Thank you very much for your presentation.

A quick question before we go to the next speaker. Just outside, one of your you could say new citizens, Sophia, was presented. She had a discussion with the audience. Now, Sophia, for those of you who do not know, became a citizen of Saudi Arabia last year. So what has happened since, and how does it contribute to your overall goal?

>> AHMED AL THENEYAN: Yeah, as I mentioned, for example, our intelligent city, where everything is about AI and IoT and emerging technology. This has been announced, so it's a message of intent that really we are going to adopt new and emerging

technologies, and this is a message of intent about adoption of these emerging technologies, and you can see now all our emerging technologies have a touch on it.

   >> FRITS BUSSEMAKER: She is the personification of your ambition. Thank you.

   Next I would like to invite His Excellency a.m. Andeep Singh to share your experience. Thank you.

   >> AMANDEEP SINGH GILL: Thank you very much, Frits. It's an honor to be on this panel, and I want to begin by congratulating ITU on it's 153rd anniversary. I guess after three days of presentations, the last thing you want to hear is a speech and see very dense slides, so I will try and keep it simple and hope we have more of an interactive dialogue when we are all sitting down and the playing field is level -- sort of.

   Today I have brought before you a perspective from India on AI development and deployment, and I'll, in the next eight or nine minutes, I want to talk to you about our experience with a task force on artificial intelligence for India's economic transformation. So on building collaborations and investing in beneficial AI.

   But before I do that, I'd like to make an observation on dichotomies. So we've been speaking about AI for Good, beneficial AI, so good versus bad, beneficial versus harmful, et cetera. While this is useful in a way to get our discussion

started, to improve our understanding of the issues, I believe that it's important to be mindful that technology's always multipurpose and repurposeable. And what matters, really, is the social construction of technology. And even between good and bad, there are choices to be made. There are opportunity costs of paths not followed. And there are trade-offs. So it's important to keep that in mind.

Another dichotomy that I have heard the past two or three days is this dichotomy between problem owners and problem solvers. I think in a country such as India and in many other emerging economies, if we emphasize too much these distinctions between white collar, brown collar, blue collar, then we run the risk of some degree of exclusion, some degree of accentuation of existing inequalities, so we should leverage the inherent interdisciplinary character of AI and build partnerships across these divides and not reinforce these divides.

Can I have the next slide, please. Okay. So in this report that I am going to talk to you about, a group of 18 people from various disciplines, government, policy, engineering, private industry, medicine startups, we had two women entrepreneurs, AI entrepreneurs on the group. We engaged in a reflection on AI. In our report with a set of recommendations was made public in March this year, and it's now being socialized in various communities in India and is being followed up as well.

So let me share some key messages from that report with you.

These were the three policy questions we kept in mind as we went through this exercise. We had an initial idea about what should be the vision for India, for deploying AI. And we fine-tuned it as we worked our way through the issues.

In short, we feel that our narrative should be sober. We should neither hype the technology nor run it down. And our vision should be AI as a tool for problem solving at scale. So not a top-down vision, not a vision where we look at AI as (?) but we leverage it as a tool for problem solving. So this is more in line with what we heard during the keynote address from Sir Roger Penrose, that we should look at intelligent observation and intelligent infrastructure. So we should be careful in having a correct understanding of AI as we apply to SDGs and other problems. And our governance approach should be agile, should be sensitive, and should be rooted in India's real needs.

We identified ten concrete domains of relevance to India. I have listed some of them. And to show you a quick example, in the healthcare sector, we studied in detail some of the applications. We looked at some of the existing attempts at addressing India's problems, so this Indian start-up, Kironex, for example, that uses AI to scale up screening for diabetic retinopathy, an issue that was addressed in one of the panels in this conference.

In looking at these various domains of application and in

looking at the grand challenges for India in developing and
deploying AI, we were aware that we need to avoid a backlash
against AI and robotics in a social sense which would set us
back by many years, and we were aware that the rollout in each
use area should be wisely planned, the enablers and safety
mechanism should be put in place, and specific safeguards on
data protection should be carefully thought through. So these
are the grand enablers in our view, first being the availability
of expertise and awareness among policymakers that you can use
AI for certain problems. And then positive social attitudes and
trust in AI. Trust has been a theme throughout this conference,
and we found it to be an essential moving forward. Then the
proper use of data. It's not just building a stack of data
commons. The conversation is very, very complex. For example,
in terms of international trade, in terms of the security
community's concerns, in terms of the privacy and citizens
rights communities concerns. The Indian honorable Supreme Court
has weighed in on this in may this year, and our policies need
to take that into account, so it is more nuanced than what I
have heard so far at the conference, and we need to get this
right.

    Then there is this aspect, and this is very critical across
the developing world, which is leveraging indigenous digital
aspects. We heard about satellites at this conference. So
India's program which is a huge data set of data derived from

satellites. AI needs to marry with that. There need to be
local use case scenarios to be leveraged. It's not about
solutions being developed in the Silicon Valley and being
brought somewhere. I mean, I am an engineer by training. I
understand engineering hubris, but I think we need to work with
indigenous use case scenarios and digital assets.

We also looked at domain-wise enablers. In health, for
example, the role that can be played by electronic health
records.

We looked at risk, ethics, and social safety. One of our
political directives was please look at the issue of
technological unemployment. So we focused on the issue of jobs,
and we looked at four areas for opportunities and threats, what
we call for school for machines, second area being advisory
services, let's say to farmers using AI products. Third area
being health. And the fourth area, which is the most sensitive
in the short-term, the IT services and business process
outsourcing area, where there are some estimates that a large
number of jobs are going to be lost in the short-term.

So our overall conclusion -- and I must caveat this by saying
that we need to develop more sector-specific economic models for
studying the job impact, but our overall conclusion is cautionly
optimistic. We are positive about the impact of AI on jobs.
And we can go into this in the question session. Why do you
have this conclusion? Why not something else?

And in this reskilling would be key.

Some of the other things, the fact that AI is a hidden technology. So in the Indian context, it has to be explainable. Machines have to announce themselves as machines when they interact with say a farmer in a village. And then the performance, including their learning, has to be auditable. So these are some of the aspects that we looked at very carefully, and we came up with some recommendations.

This I tawxd about, so in the interest of time, so I will skip this. And go on to our recommendation. These are select recommendations.

Our biggest challenge in India, despite the fact we have the third largest number of STEM graduates in the world, there is a huge digital trinity in India, 1 billion mobiles, 1 billion digital identities, and the bank accounts, 500 million. So despite those advantages, we have these three challenges: Lack of critical mass in terms of AI and qualified personnel, investments in public and private sector, and lack of good-quality data to apply to AI use cases.

So we feel that the government should focus on critical enablers that level the playing field, that lower the entry barriers for startups, and build the necessary infrastructure. So in terms of concrete areas of focus, one, AI education and popularization. Second, partnering with the private sector to deploy AI in select areas of governance, such as a clean India

program. Policy enablers in the data space, such as regulated market spaces for data exchange. Then creating semisoft infrastructure to industry standards and centers of excellence, including in partnership with the private sector and with research institutions.

I am glad to see the director of the (?) center in Mumbai here in the audience.

Frits, I will conclude with some thoughts about our topic of discussion today, and that is essentially about collaborations and investments.

The investments, particularly in human capital, would be essential, and sue would be the breaking of silos between different government partners and programs. We need to develop new models of partnerships with the private sector, with academia, and our youth -- entrepreneurs, researchers, and students -- need to be fully involved. This is not only key nationally, but it's also key internationally. And these investments have to be multidisciplinary and systems oriented. Just like the collaborations, bringing together all stakeholders on use cases, standard setting, and ethics.

As the saying goes, alone we can go fast; together we can go far.

Thank you.

(Applause)

>> FRITS BUSSEMAKER: Thank you for sharing your insights.

Given the time, I would like to move on right now and David
Li, founder of the Shenzhen Innovation Lab, if you could come on
the stage and share your story, what you have done. Thank you.

>> DAVID LI: All right. So great. So it's an honor to be on
this stage, so this government, and me, I am a street guy. What
do I mean by street? This is my favorite quote from William
Gibson. (?).

What do I mean? The innovations have always been driven by
three factors -- the access to knowledge, the access to
technology, and the access to the means of productions. Only
when you have all these streets that innovation can flourish.
Only when you have these three innovation can turn into impact.

Traditionally, all the streets are limited. Silicon Valley
has the unique advantage, back in the '70s and '60s, only all of
these in one place. But that has been changing in the past 30
years. First, the access to knowledge. It comes to the
knowledge of AI. Even a decade or two decades ago, if you think
about this, before Internet, if you want to learn about AI, you
had to be in proximity of Silicon Valley, going to Stanford,
going to Berkeley, be able to take the class to learn about AI.
But today, trying to educate a million AI experts in the next
decade, so the knowledge is open.

The technology is open. Open source has been controversy

back in the '90s, but right now it's being taken for granted.
Software should be open source. All the foundational software
of AI are open source. Things are open. There are tons of
companies working to make it easier and easier. Just yesterday
I got a business card that says programming is teaching.
Programming is just about teaching AI. So that is where we are.
This is open access to technology is open.

   And the third part, this is where my city comes in.
Shenzhen, if you don't know, we are a small city in the south of
China, we are probably responsible for 90% of global
electronics. In the past two decades, it turned into this very
open ecosystem where everybody can come in in different levels,
take advantage of the system, and create the things they need.
And this has changed if we look at the global impact, this has
changed the face of mobile phones. This has changed the face of
smartphones.

   Last year we celebrated ten years of iPhone. iPhone last
year had 7.4% market share in china. So in ten years, a
dominating player becoming a niche player. And this is where
the power comes in. It's not about China creating another
Apple. If you look at the numbers, 51% of the top ten players
of the smartphone has only 49% of the market. The other 51%
comes in different shapes, forms, local brands, everywhere, and
it's empowered by the city's openness. Now everybody can go to
Shenzhen and make your own mobile phone for $70.

People talk about the IoT to be 50 billion in a couple years. 45 billion of them are going to be made here. And it's not going to be made in the high-tech factories. These are the pictures of the market. It's an essential trading place of Shenzhen's market. It's the street. The thing about Shenzhen is that we make the productions open. Now you don't have to be apple. You don't have to be large company to be able to produce. So now with these three converge, the future of AI is going to happen not just in the lab or in a large company, but it's going to happen on the street, and this is what we have been doing in the Shenzhen Open Innovation Lab. We are trying to push how far we can take AI and where we can take AI to solve people's problems.

I will give you some examples of projects we are currently undergoing. So people talk about agriculture. We have a small team, two people working on coffee farm disease prevention. They want to use AI. They are basically have a farmer wearing a watch like this with a camera, taking pictures, and they train AI in the back. Not to do disease identification, but they just train it for normal. The trained the neural network for normal and for the picture taken the whole day, you just send the nonnormal one to the experts. This is easy to train. It's extremely practical. It's probably not going to impress a lot of the people who try to argue about how accurate it is, but it works. This is street using of AI.

This is another project we are about to embark on. For the past few years, (?) Shenzhen would get constantly contacted by people who want to make hardware, and one of the whairs I hear the most is I want to build a translation machine for refugees. And we told them it's a couple thousand dollars to do this in Shenzhen. All the teams backed off. They realize they cannot go out and back in, try to get a million dollars in grants to do this. They actually just have to spend a couple thousand dollars and have result. So they backed out from the projects.

So we are working with a school who is teaching programming skills to the refugees. We take the same set of equipment, we take the same set of the access to them. We will try to have them make right there in the camp with the refugees. I mean, AI on the street. How accurate you have to do this to be useful? Actually, not very accurate.

This is the new project we are embarking. This Tibetan Buddhism temple in north India. We are going to open a makerspace there. Our friend who works there wants us to teach the young monks about development, digital application, and of course, we want to bring AI there. We can teach this young monk AI. But in return, what we want is the young monks to teach AI about religions, about Buddhism. Maybe we can find some ethical AI out of this.

And then there's another business model, if you want your smart speakers to more comply to your own face -- it's not

coming from Apple, it's not going to come from Google, it's not coming from Amazon. It's going to come from streets like this. So wait for this, the Buddhism AI speakers.

For the next, we talk about SDGs. We talk about place we want to experiment, village in south of China. This is a beautiful village, 600 years old, has not been developed in the past 30 years. We want to use this as experimental ground. Now we can enable global teams. You have idea. We have the production. We have the technology. We have everything. How about experiment to exchange to really put this into use in the cheapest way possible? If you want to solve a Chinese problem, you cannot take a half million dollar machine. Have you to try to make the machine at $500, with constraint, with open access. That leads to real innovations. That leads to practical innovations. So anyone interested can join us.

So very quick, I am finishing. So for beneficial AI, it's not going to come from the city. It's not going to come from one large company. Ting we learned the lessons. A concentration of power, concentration of access, creating monsters -- not naming name, but you know who I am talking about. We have done this with Internet. We should be looking forward to AI. We should see AI as this global resource, but we should enable community members to create things benefitting the community. When we do that on that scale, it's going to be beneficial because at the end of the day, I know where the

creator lives. So you are not running away.

Good neighbors makes good AI, so how do we get there? How do we go from this very serious discussion about AI to street AI? So here's the last slide. I don't know how many people remember the website called geocity. So as you teach a lot of people, HTML is not technology. It's how I publish goofy stuff. We need geocity for AI, and for that, here we go. Let's try this again.

>> Alexa. What's the weather?

>> Alexa: Currently in Cambridge, it's 45 degrees with showers. Tonight you can look for rainy weather with a low of 43 degrees.

>> DAVID LI: Yeah, we need geocity for AI. AI is not in a pedestal anymore. Anybody can use it. Thank you.

>> FRITS BUSSEMAKER: Yeah, one quick question for you about not creating monsters, but all these monsters started off in a garage as well. So how can you avoid to create monsters of the future?

>> DAVID LI: Well, I think we reward the monster, we feed the monster, by insisting on these business models, insist on these venture to go after. Yesterday we had a discussion about data. Now we don't really know how the data is useful, but we will reward companies, collect incentive, collect data. The more

data you collect, the more valuation you have. So we are creating this cycle which rewards monsters.

But the good thing is when we look at a street, so globally, entrepreneurship, 0.05% of them are coming from venture bank. 99.95% of them come from street. So we should start looking at street entrepreneur and try to inspire people with that. Stop inspiring people about, hey, I am instant rich, got billion dollars.

>> FRITS BUSSEMAKER: Okay. Thank you.

I am looking a little bit at the organization for logistics because we started a little bit late, and I know we are now between a coffee break. Would you allow us to have a small discussion for the next ten minutes to catch up a little bit of time but not break too much in your coffee break? Anybody agrees or disagrees with that?

Yeah? Good. Okay.

I actually want to link now a couple of these discussions together. First of all, His Excellency Al Theneyan, you mentioned that you probably -- the mic will already be on. You mentioned that Saudi Arabia is investing half a trillion in a green city. How did you educate the decision-makers, the budget holders, to actually do that, and how long was that process before you were able to make that decision?

>> AHMED AL THENEYAN: For the whole vision, there was a big exercise. All programs did not come arbitrary. There were

decisions to involve almost everybody, and it included different
people, it included people from society, from educational
institute, and from the related government agencies. They sat
together for months in workshops, and they analyzed the vision.
It was for both top-down and bottom-up approach. Until they
came up with this detailed program. The programs include very
detailed KPIs, where are we hitting, not only for 2020, even
2030. So for each program, the intelligent cities is part of
smart cities. There is already a program how many cities we are
targeting and what KPIs we are targeting for each city and how
much investment has to be put. So this was a result of a very,
very, very detailed exercise that was bought with involvement of
all related parties, and there were benchmarking also against
leading countries and use also of studies in the same
discipline. So not only for this; for all programs of the
vision. And this is the outcome, and it is under revision.
wlevr there is needed for updates, the vision gets updated and
the KPIs get updated.

   >> FRITS BUSSEMAKER: Okay. Thank you for that.

   I also want to link a remark you made about the fact that
artificial intelligence is hidden, is hidden technology. So is
one of the characteristics of a true smart city a city where you
don't even realize it's a smart city? And also to some extent
if you build a smart city, is that a city where people will have
technology in their face, or will they -- will it be hidden from

the citizen using that city as well, living in that city? So
your views?

>> I think a smart city is much more than just technology.
It's communities. It is common spaces. And it is governance.
And AI's potential for smart cities lies in its ability to get
people together around problems. So if there is pollution in
the city, if there is traffic congestion, if you can get
citizens, especially young citizens, to engage in problem
solving using AI, so that would be a smart way to build up a
smart city and not just lay out and open the doors one day and
say come in, live in a smart city.

So that is my personal understanding. I think staying with
David's Buddhism inspiration, I think we need to have the right
understanding, then we need to have good collaborations, and
then we need to have smart investments. So that is what will
maximize the AI impact in any area, whether it's smart cities,
health, agriculture, or access for disabled people, which we
have focused a lot on in our work in the task force.

>> FRITS BUSSEMAKER: Thank you.. Actually, can I ask you
also to expand your view, how hidden is the technology going to
be in that smart city?

>> I agree with my technologies that technology by itself
will not give you a new solution. It's about the ecosystem you
build around it. Okay? So what we are trying to do in NEOM is
not a concept of smart city. It's more intelligent, where you

would like to build this whole ecosystem about intelligent decisions, leaving the citizens and the residents to the quality of the life. So the more of the routine jobs that can be automated in intelligent way, like the things you mentioned about the weather, the traffic control, all of this, but again, this will be in collaborations of the society. So it's more even building the intelligence in the city, it's not only a pure technology. You have to build it with the proper ecosystem, with the right policies, with the right even automations and logic in place. That will complement with the citizens in that city.

>> FRITS BUSSEMAKER: Thank you.

>> If I may add, the hidden aspect of technology, when computers first came in and this debate about bank jobs would be lost, et cetera, you could see the technology. You could actually visualize it. AI is going to seep into a lot of things. We have to design it in such a way that there is a degree of transparency. There is a degree of auditability. There is a degree of explainability about it, not just to the users, but also in terms of how it fits in with the larger society.

Technology does not start when you get the product out and you start to get the revenue for it. It starts when the useer starts to engage with it or groups of users start to engage with it.

>> FRITS BUSSEMAKER: Okay. Thank you.

Now, you all talked about the need for skills, new skills, reskilling people. Is this something which people are knocking on your door, we need new skills, because otherwise my skills are going to be obsolete? Or do you have to pull people in to get those skills?

Yeah?

>> As I mentioned, program in ICT is to build next future generations for the future jobs. What we have done is analyzed all the vision realization programs, and we start determining the skills that's needed. So we need blockchain here, we need IoT, we need integration, we need the cybersecurity. And we assess also our market and where are we heading. So to know the skills we are having. Then we start working on two tracks. One is a short-term, which is extensive training program to prepare our current students for the market and to reskill the existing employees. So we have the employees both in the government as well as in the private sector. We are working to reskill them.

For example, we have a program, we call it CIO or leadership of the future or digitization leaderships, in which we are preparing the CIOs of the future with the needed skills to be able to lead a transformation programs. And there we are not giving them only a training on technology, we are giving them training on transformation and change management and so on. So we put a short-term, which is extensive training programs, and

based on studies and numbers, so we know exactly how much we
train, and we target those students based on criteria, so for
example, we know if the student has one or two or three skills,
he is capable to be cybersecurity, he is capable for data
science, and so on. Data track in which we are doing our long-
term plan, we are starting to revamp the education to include
the digitization curriculum, starting from K-12 in early stages
and also revamping that curriculum for universities to have
different track that fits with vision needs as well as the
future skills needs.

   >> FRITS BUSSEMAKER: Okay. Thank you. I am conscious,
unfortunately, of our time constraint at the moment. Maybe very
quickly, David, skills. How we start bringing (?)

   >> DAVID LI: The learning of the skill on the street is just
in time, and you also lean on partners. That's another part of
this is we are thinking about AI whenever we think about
technology, we always think about this isolations, this geek in
the basement scenario. But reality is on the street. It's that
you lean on expertise of the others to realize things. And this
is how Shenzhen works. This is how we come to learn about
working with entrepreneurs. That's always a just-in-time
learning opportunity, and that's always the people with the
skills you can lean on. And that's the other healthy community
we want to Build so we don't end up in a place where computer
scientist, where engineers use the cutting-edge natural language

processing just to avoid talking to real people.

　　>> FRITS BUSSEMAKER: Yeah, okay. Ahmed, can you explain, would that model also work in India?

　　>> AHMED AL THENEYAN: Absolutely. The street-smart AI and what we've looked at is something we call school for machines. So where do machines learn and how do they learn? We think we should just feed them data and they will learn. I think we need to take them to school and take them to school with farmers, people who are in the street, so that this distinction between white collar work, brown collar work, blue collar work gets smudged and everyone feels that they can be part of the AI revolution, if I may. And this is also key to addressing the technological unemployment issue. Data is of uneven quality, you need to curate it well. That is man power intensive, woman power intensive exercise. And we also need to address some negative externalities that are out there in terms of diffusion of innovation, barriers to that, pollution, disability, exclusion, and AI can help us in that as well, so both direct job creation and indirect job creation, but we have to get the vision right, get the understanding right.

　　>> FRITS BUSSEMAKER: Thank you.

　　To round off this presentation, I would like to each of the three of you to share with your audience what's your key takeaway? When are you happy? What's the key message you would like people to take back home from this panel and from this

conference?

May I begin with you?

>> First I would like to thank ITU for this great event. It was a great opportunity and opportunity to learn more from others and find an opportunity for collaboration.

What I believe, like any technology, AI is not a new technology. All technologies came from the same journey. Each technology has both sides. It has huge potential, and there is the risk side. The risk I think can be easily mitigated with the proper governance and policies in place. What we need at this stage, there should be more collaboration at the national community in putting the right governance, the right policies to make proper good use of AI for the whole group. Thanks.

>> FRITS BUSSEMAKER: Thank you.

Your takeaway, Amandeep.

>> AMANDEEP SINGH GILL: I want to just leave one thought with you, which is this -- that human-machine collaboration, but the human hand should be on top.

(Applause)

>> FRITS BUSSEMAKER: Good message. Yeah.

>> DAVID LI: I guess mine is the -- well, spend some time, make some goofy AI, and post it on YouTube.

>> FRITS BUSSEMAKER: Good. Okay. The good thing about being in a conference is it allows serendipity, so I think we have a coffee break right now. Talk to people you haven't met yet.

Share your ideas, and start to collaborate, and I want to thank

the distinguished panel for drawing your vision and experience.

Thank you very much.

    (Applause)

    >> So let's do a 20-ish minute coffee break, then we have two

exciting talks still. One is interview with the mayor of

Pittsburgh, then we have a pretty cool demonstration from

Japanese airlines.

    (Coffee break)