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AI breakthrough teams.
Room C1.

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(captioning test).

AI breakthrough Teams.

The Heart of the Summit.

D: Discussion of Ideas.

>> I thought this was the time and the room is full but really it's empty (overlapping speakers) we are going to wait for two to three more minutes to get the people back in the room. Then we will start the session. Yeah? Thank you.

All right. I'm being pressurized to start the session. May I request everyone to please get seated. Let's get started. Here is the game plan for the session. What I'm going to ask the people who pitched today as part of the panels, to please we would like you, if you want to have the opportunity to repitch in 30 seconds, so we can ask people to come in and join your calls. What the intention of this pitching and this pick up of the projects is that we will try and find ten, eight, twelve nice projects which have a strong potential to be discussed tomorrow, and then as group continue implementing these project and try and bring next year to see how much progress has been made on the pitches. It's a clear entry for the next AI summit that will happen.

The stages now are as people start filling in, I'm hoping, we would invite some of the pitches, we heard four pitches in the morning, I'm asking if you want to come pitch yourself, we have heard the sessions all day, do you see what partnerships you need, what are the objectives. We had given all the project people a sheet with some basic parameters. If you want to talk through that, and highlight what you want to see going forward, that is one opportunity of doing it. I will give you a short 30 seconds. You have to be strong in a 30 second pitch, okay, one minute. I will give you one minute to make the pitch. After the one minute pitch, we will do a show of hands of people interested in that specific project, as a first starting point, one handstanding up there from Lukasz who is going to be interested in all the

projects because he said I wanted problems. One minute pitches. Then we will break it into small discussions, so the people who are pitching it and the people who showed hands can go and discuss potential, and come back and decide on which projects can go forward. Is that a clear game plan? Or complicated -- yes, question.

(speaking off microphone).

Move forward means we will try eight or ten projects where we see potential and interest from the community, and then we try implement these projects together, and then we come back and report on these projects next year at the AI summit. When I say move forward, we want to see that we can come and report back in one year. If it's about regulatory which will take ten years we don't want to take that project at this stage. Yes, please.

>> [inaudible]

(someone speaking off microphone).

>> People who previously gave presentations for sure, but if anyone who has not had an opportunity to pitch and has a golden concept and they have come up with at this stage and think they can make it, we also welcome them to pitch it at this stage. That gets a brownie point to start with.

All right. I'm going to call on this morning's pitches. People are a bit scared but if you guys want to go first, 30 second pitch? Yeah? Because you already pitched this morning. Yes, Ramesh.

>> Perhaps it would be useful for them to structure the pitch

in such a way that it will allow you to get more of the colleagues to join you, to supporting, making it happen. I think that would be very useful. Also please take responsibility in catching the names of the people who support you, and assemble, once you assemble them there needs to be continuity after 5:00. That is something that is important.

>> The structure I'm suggesting we start with this template that we have given you, if that is helpful. You can use it if you want to use the structure. If you have a smarter structure, go for it. We don't want to bind with you a specific thing. But you can start with the structure, give core problems and go for it. This is impromptu. We have been discussing it but we want to make it more interactive. We are happy to take any inputs. Because you are the first one you get one minute 30 seconds (chuckles).

>> Good afternoon once more. I think our pitch was pretty straightforward. We have three problems that we want to solve, we want to demonstrate that they can be solved using AI.

Incorporating into clinical work, upscaling and strengthening national health systems, because our application is very wide, it covers HIV and AIDS, children under 5, primary healthcare, work base community outreach, for the purpose of a use case, we selected the most problematic of all the problems, which is diabetes, hypertension and the comorbidities that accompany them, as a small little basket that we can work with. Out of that, we would like to have first technology on IoT agnostic devices. Secondly, we would like to have an organisation that has got a lot

of experience in artificial intelligence that would then strengthen the work that we have already done.

Third one, we need funding. (chuckles).

(applause).

>> Thank you, that is a perfect place, that is what we want and it was on the dot. I had to come in on the last sentence. The question is given a clear pitch, they have been working on cross-cutting areas beyond one specific area, so silos they have some of the work on the ground set up with governments. They need technology support from some of the brains here. And they need the money. So show of hands, how many of you think, before you go into support, that this is a viable pitch, something that can benefit the AI world and can show impact? Can I have show of hands on this project? Be careful, because these guys are going to come to you and ask you questions (chuckles).

This is the programme. I think there is good support. Obviously there is interest in this pitch. I also would have a show of hands, who would be interested in working with them at looking at what are the opportunities, and how they can be collaborated. This is the hands that you want to see specifically ... yes, show of hands for the first pitch for them to start talking with these groups, think for you to, in the break, come and discuss. Okay. Fantastic.

Second pitch, who is willing to give a second pitch up here. All right, I have two hands up there. Use the microphone. Give us the pitch. We have pitches going for now one minute exactly.

The time will go down, the first you speak the more time you get. One minute pitch and we will show call of hands who is interested and wants to partner this one. Please introduce yourself and go for the pitch again.

>> Thanks, good afternoon, everyone. I described the model this morning and mentioned some of the constraints that we are facing and one of them is that we need additional data. If there are partners here humanitarian actors, U.N. agencies, who might be interested in working with us to collect data from other countries around the world, that would be fantastic, and further training and refining the model.

The second ask is the likes of Stanford who have the solutions, if you would be willing to work with us on designing a cool app, we have an API that is not the best looking, but you can post an image, and it will return a weight for height score, it will be nice to have a app that a community could use, take a photo and instantly within a few seconds have a malnutrition diagnosis. So more data, front end work, a little bit more. And if there are also other health professionals that are interested in helping us work on the detection of facial edema, that would be a huge asset, because we don't have nutritionists. Thank you.

>> On the dot, perfect. Thank you for that pitch, very efficient pitch.

(applause).

I'm starting to debate if we need the whole session in the morning. By show of hands, for the pitch, for people who think

this is a very viable concept for AI and interesting. Now also show of hands of people who would like to work with the problems of the questions raised here from the side. That is interesting. She didn't even ask for money (chuckles).

The reason I'm doing the show of hands at this stage is we will break after the pitches to have the groups come together and discuss how strongly they can make this collaboration and work can be brought together. That is why the show of hands would be helpful for you.

The third, the gentleman behind there, please identify yourself and go for it.

>> We are the ones who are developing the app called child growth monitor. We are measuring undernourished and malnourished children which is usually done with scales and sticks and we have developed an app that does it basically with a smart phone.

We are looking for, I'm doing this for you, Lukasz, anyway, we are looking for coders to help us with, to develop the machine learning algorithm, and we are also looking for people who can help us with funding to set up, to put the team that we have together.

>> Great. Any questions for the pitch? Is it clear enough? You are looking for people to team up with you on this project.

>> People to help us with the machine learning algorithm, and we are looking for funding.

>> Ah, that was a tricky one. Machine learning, algorithms and funding. Again show of hands.

>> Can I make a quick comment?

>> Yes, please.

>> It would be good if the projects would sort of give also a bit of an economic context, because I'd be delighted to work with people on sort of open source projects. On your private app, I would support you mentally, but of course I'm not going to support you with work. So that will clarify, I think.

>> Very good point.

>> Yes.

>> Not-for-profit open source.

>> Mention that, there is a (overlapping speakers) question or pitch.

>> Question. Can you say a little bit of a refresher on the kind of machine learning? Is it imagery based or natural language based?

>> Yes, it's imagery based but it's more, a little movie or a little film, like a 3D model that we have, that we get out of the data that we collect.

>> This is a pitch. Is that okay?

>> Let me come to your pitch for a second. You are ready for the pitch. Show of hands people that are interested in participating or joining.

>> I wanted to add on the economics, yeah, because financing such public health goods and creating revenue streams, working with the most vulnerable people in this world, obviously it's a dilemma. We have solved about how to solve that, so one model

could be a donation model. Here in the western world, you say saving one child or measuring one child, 50-cent and that is automatically applied in the third world so it's a donation model, that could be a option.

Another model is you provide the solution to service providers, whether government agencies or NGOs or UNICEF you do it project based, basically, and you offer the technical solution.

The last option is basically payment by click, so if somebody uses it, the ready solution downloaded from the Internet, but by that, you are not solving the ethical dilemma, that basically you want it to be applied as often as possible, and you don't want to put any restrictions in the game, even if it's only very little cent amount. That is really tricky, is that public goods, and could be a topic by itself.

>> Okay. Problem here, they need collaboration in terms of video based machine learning and business model or financial model to implement these programmes. They have some options. Show of hands, people who want to start looking at those things. There were a couple of names, hands here, I'll put my hand up there as well. Yes, probably the right people are in the room to start talking to and go forward. Next pitch. There is a pitch there. There is a pitch also.

>> Can you hear me? Okay. How much time do I have?

>> One minute exactly. 60 seconds.

>> I'm going to time myself. Great. For those of you who already heard my pitch, but for those of you who didn't, let me

repeat what I said. The problem we are trying to solve, we are trying to create a model which to detect diabetic retinopathy using images from a low cost camera which can be used by healthcare worker in the field to detect diabetic retinopathy. The reason we are trying to solve it is 400 million people have diabetes, they are at risk of developing diabetic retinopathy and could lead to blindness. Countries in Africa have few ophthalmologists, there are not enough. And people with diabetic retinopathy need to be screened regularly. What we are looking for is partners to collaborate on machine learning as well as getting funds for the project for deployment.

>> Perfect on the pitch. There is a problem, well-known problem, solution in sight, opportunity is there, they want machine learning experts to help and support implementation. One question from my side, you are looking at not only prediction but management of prevention, the treatment side of it as part of the process, is that correct? You are looking at the treatment side also from this process.

(someone speaking off microphone).

>> People are not getting screened, if you are not getting screened you cannot be treated, the earlier you can screen them, the easier the treatment is. The second problem can be solved much better if you solve the first problem because if you detect diabetic retinopathy at a late stage, the treatment is more expensive and not easy to do. If you detect it early when it's mild, it's easy to treat.

>> Back to the economic viability, is this open source or specific --

>> We are open to considering all possibilities. We are open to models, that is another thing which we got to innovate on, because right now we are not a nonprofit. We are a commercial enterprise. But we are working with partners in India who already have clinics. They are partners and they are for profit. But we could think of a model where we subsidize the low cost devices in Africa with revenue from developed area, where we could charge for this. There is a model innovation that needs to be done on the revenue side.

>> Any questions on the pitch?

>> Yes, when he mentions the revenue side, what are your ideas? Can you use a few words, please?

>> Well, you know, the thing is there is a fixed cost which you can prorate. The model works well, because it's machine learning is once it's deployed the number of units you deployed it reduces your available, I mean your unit cost, because initial fixed costs are developing the IP and the product could be high. But then it could be automatically deployed but let's say a million centers, so the per unit cost on each of those would be very low.

What we are looking at is a integrated device that includes the machine learning algorithm embedded in it, like a Raspberry Pi with a camera, which could potentially be used by healthcare worker, and that device whatever the cost is, could be we are looking at a few hundred dollars at the most for the entire thing

if possible.

Therefore, it would be, that revenue model would be just that we are selling that device. Whatever the cost is, at a wholesale level, you could make a small margin.

>> Fantastic. Show of hands on the support of people who think this is a viable project that can be scaled up and applied in countries. Who would like to support this or work with this group on this technology, requirements for machine learning? Or the business model. You have to do some hard work here.

>> I guess.

>> People to get on your side, but there are experts here so maybe has to be more convincing. I'm giving you 90 seconds because this is a fresh pitch, just come out.

>> I'm a PhD student and I'm going to be the first one to talk about mental health, I think. I'm working in that one of the big problems we have in the mental health field, we don't have access to the scientific, we have access to it but there is so much of it that it's not possible to follow up, which means only 50 percent of the territory is used and only ten percent of practitioner are using evidence-based practice. We are trying to use natural language processing to extract information from the article, also using machine learning to judge the quality of the article and trying to put everything in a big database, semantic database so practitioner can access to it and use it in the daily decision.

The economic part, we are a social enterprise, which means that, yes, we are looking to make revenue, but we are investing

all of the money that we actually gain in our social mission which is bringing information to everyone. If you have any other question, I think I have still two seconds.

(chuckles).

>> 30 seconds more but the question is what do you need, what kind of collaboration do you need?

>> I think pretty much everyone here needs funding. So I'm going to say funding also. But what we also really need is that what we are addressing is a highly unstructured data set, which is the scientific article. We need expert in natural language processing to help us. We have some in Montreal, Switzerland, in different places. But the more we are, the more we are going to be effective in it.

>> If I summarize the problem is to use natural language processing to identify the science in mental health and provide them to providers to help them create and make decisions on treating mental health situations. Pitch for natural language processing experts and funding experts. You are preaching to the empty room because there is not much funders at least by show of hands but natural language processing experts. Show of hands, this is a fresh pitch. It hasn't been presented. Mental health and support from the literature side to service providers. How many of you think this is viable and effective AI solution that can be scaled up? One very strong hand. Mark your flags on those people. Make sure you talk to them. I'm not going to ask you if you support them because they definitely want to work with you on

this thing. You have a question or pitch? A pitch, okay. Is there a question or a pitch? A pitch. We got a question, a pitch and then pitch. Pitch, okay. We got two pitches. Go ahead.

>> Hi, we are commercial company working in low resource communities to leapfrog innovation in diagnostics, cofunded by the London school of hygiene and tropical medicine, to enable regulatory access to software for diagnostics, we would like to propose a highly focused and practical action, where a convener could bring together a confluence of expertise that can help companies as well as the public not-for-profit sector, develop plans for adoption and roll out of diagnosis by software, specifically in low resource communities. Thank you.

>> Your pitch on what do you want from this group here?

>> Convener and somebody to help moderate, facilitate and bring that confluence of expertise together, ideally somebody who is nonpartisan, who is nonbiased but has a strong view about the objectives of innovation in a low resource setting.

>> Fantastic, very strong pitch there. Show of hands again, I'm going to put my hand myself up to this one, because I think you can play a concrete role in that one. You have three hands here. It's a easy job for you. I'm not biased, but yeah (chuckles) any questions for the pitch? Any comments on the pitch before we go to the next pitch? Fantastic. The pitches are coming out, these are also giving ideas. Everyone can think about it and go back and speak to the pitchers on specific areas.

This is the next pitch.

>> Hi, I'm assistant professor of engineering and statistician, I don't know exactly my proposal is a completely as a pitch or to take a notice of this room. I want to talk about disease, for example, because we are talking about artificial intelligence these two days and we will talk about it tomorrow. We are talking about machines, deep learning and it means that autooptimizeHealth care, because for five years later we will talk about the personal based treatments, personal based medicine, also they are developing things, and most important part in this case, the climate is changed, genes are changed, babies are born with tumors but this does not affect their bodies so we have to change maybe the range of the reference values, what we have used for giving the medicine to people or any kind of babies and other things, and so I take notice of this people. Maybe we have to update dynamically the reference for based on the personal treatment and medicine, development of medicine, because the important part is not developing an algorithm in my case, because you can detect but the reason we are talking about African or developing countries, India, etcetera, and you know that kind of disease exist in that regions.

We thought that it was exhaust in the world but it exists now so we have to change something, and how we can adapt technology by personalized healthcare and treatment.

>> Thank you very much. I agree with you, it's a provocative pitch. I was trying to look at the reference, medication.

Comment?

>> I want to draw your attention, Geneva health forum last month had the focal topic was precision medicine, and the body of knowledge and the discussions, just happened to have occurred in this city one block down the street. The body of knowledge is actually captured and there is a website. I think since it is not a clear pitch so far what exactly has to happen, maybe this is another body taking a note but I would urge you to reference to that conference, which had a series of proceedings and presentations, that would inform what needs to happen.

>> Thanks, Ramesh. Very provocative pitch, some discussion is already happening at the health forum. It is indeed interesting. It's always a question should we look at the referencings of the medication and all treatments we have. AI could help with that. This question is time frame wise can we come back and report next year. Show of hands, who thinks it's a viable project. I think it's a fantastic idea. The question is how feasible it is for this next AI to progress show. The first question is, is it feasible and good concept for AI to look at precision medicine reference medication services. Show of hands, yes, there is a lot of support. How many of you would like to work on it to build the pitch and try and see if we can have something concrete come up by the next year, is that feasible? Who would like to partner with the lady outside there. You have to probably work a bit harder on this one. The intention is there, but whether it's feasible is another state. I see a hand, you have a question or pitch? Please go ahead. All right. I have a bunch of pitches now. 30

seconds, 60 seconds pitch.

>> I'm a medical doctor by training (indecipherable) doing apps, we have realized apps are used many times so we are embedding chatbots inside the apps. We are launching a platform called chatbots for global health. We are launching it in Monaco in one week. The objective is tackling technological area diseases. (indecipherable) most important we are creating templates for the clinicians themselves. There is a basic template that a clinician has no idea of artificial intelligence can create an algorithm structure, that is not intelligence but a template that can be embedded, one that is working in a more sophisticated platform. That template with Tensorflow, else, so we have a back end with Tensorflow already working, more complicated but before that, clinicians must develop the template. Doing all that this is done with another company, a French company we are working together. But doing that, we have achieved that simple doctors, clinicians, community care workers can do the chatbot. On top you can introduce it in Tensorflow, Microsoft Azul and so on and chatbots for global health will be open and cooperative with everybody.

>> Chatbots for global health and supporting the practitioners. AI side of it, how it can be used, technology you are creating templates for, but that is my question. Any other questions on the pitch?

>> Yes. I asked the same questions, what is the business model then? Practitioners have to pay or you make advertisement?

>> There is a huge -- we are a social company. Every social project must have a social business model. If you can customize finally your chatbot, we have thousands in countries, imagine patient of COPD patient that didn't know that patient has (indecipherable) if you customize it, you have business models for some specific groups of patients and depending on the country. It's a long term business model. But yeah. We have it, if somebody wants to share with us their views, we can share with them how we are going to monetize. The chatbot idea was for free, it's how you attract the group of people there.

>> The chatbot discussion is happening separately. I'll come to you in a minute. You are fourth on the queue for the pitch. The chatbot, show of hands of people who are interested in chatbot as part of the project, so discuss with them and see how it happens.

About ten minutes, after three or four pending pitches, five pitches, we will take -- one, two, three, four and five, in that order. Five pitches. We do the five pitches and then we will break into discussion, just open discussion. So you can mix and match with people interested, people make the pitch, talk to them on interest and based on that and some of the pitches know the relevant people, have a discussion and make these groups and come with concrete discussions. That is the plan.

We will push through it.

>> I don't have a pitch on a particular project. I actually have a pitch on how we could organise this which sounds like a

challenge. There are many exciting projects, and I can tell some have overlapping scopes, and overlapping ideas. So they may cross facilitate some aspects. But they also want to stay by themselves to further the specifics.

A lot of problems they share is the data. They have to be gathered or they have to be made available. They have to have the right formats to apply the machine learning algorithm. You want the right people to work on it. Then you want the project to be known, so there should be an outreach way, and you want to also sync them up, and you want them to be reported back to the next meeting, and even better, you want them to be successful.

So, I've been attending ITU standardization for a long time and what we have just created last year is a focus group on machine learning for 5G, which is a very specific thing to the ITU. But the focus group for machine learning for 5G is actually an open platform, everybody can participate. It organizes all the projects in the area.

What I would be offering is, would be, I don't think I have the time personally to do this to Chair this, but I would, for the remaining of this thing, if you want to contact me, you can come to me, and I would be basically your focal point for some limited time, not forever, that we can maybe organise all of this work into a structured way that, and the establishment of a focus group for AI could be done for this particular topic, but we may also be able to do it for all topics that come out of this conference, and then have subgroups that basically go ahead and tackle AI and

health here.

>> Fantastic. You solved my problem. That is a great way of approaching it further in a unified fashion. We have pitches going out and that is what we were hoping to get out of the pitches was get alignment of how these different projects can -- our discussion was we don't want to isolate projects separately but bring them together, chatbots for example goes across, it's generic examples, business models go across, how can we replicate those things and now we have a platform. He offered not for long but take him up on the offer and go forward. Let's keep going with the pitches. I want to make sure everyone is heard. Are there questions and comments there? Ramesh. The pitches I'm going for.

>> Really fast, mine is your M.D., you saw my pre-primary care pitch before. I'm looking for somebody helping us get pre-primary care in the field between patient and health workers or doctors. So a place where we get the establishment to start pushing out the service, because we are doing it from the patient side very well. We have three million users. But I need, I want to get it from the inside. So I need health organisation or start looking how to get it out to fill the gap.

>> Clarification question, are you asking hand holding intervention for your enterprise to be in the country to implement?

>> Introductions and so on, because I have no idea how to --

>> Okay. But I think you also said that yours is

not-for-profit and also philanthropic.

>> No, the app is free. But we have a way to monetize it because we use a private healthcare service providers that want to be part of it. We can do it for free. But yeah, we need the access.

>> You get the award for the fastest pitch, by the way. I have a gentleman in the back in the gray suit. Please go ahead.

>> Hello, I want to invite everybody that who is interested, I became part of a project that involves currencies and artificial intelligence, what we propose is the name of the currency is exponential coin, a platform based on the conjunction of blockchain and currencies with artificial intelligence engines. It is to maximize human being creating a new economic system based on emotions and empathy, suitable for fourth industrial revolution. If you are interested, please come to me. The business model is obviously a place for using every coin that uses this platform and paper use kind of revenue income, revenues. If you are interested, please contact me.

>> Thank you. There is cryptocurrency using AI but I didn't see the health side of it, the discussion, maybe I missed it. How does health apply to that?

>> It's about emotional health, more than physical health.

>> Emotional health, interesting one. I'm intrigued to know more about it. Emotional health, environmental health, very different definition they are putting out.

>> Maybe I want to mention, I come from UNICEF innovation and,

and there is a UNICEF innovation fund, since everyone is asking for funding, so you know there is a fund for interventions of up to 100,000 dollars for start-ups that are working for new technologies but they have to be headquartered in the programme country offices, so basically in developing countries, so in case someone wants more information about that, if you Google UNICEF innovation fund, you will find it.

>> Thank you so much. That is helpful. It's a important part, there are several opportunities for funding models (overlapping speakers) what you are looking at as a social -- that will be existing.

>> Open source is a important condition. Thanks.

>> Fantastic. That is a very good eye-opener. Make sure that she is being contacted by most of the people to get information. Several other funds that are out there, I'm sure with the expertise, you would know about them. Resources is always a challenge but there is always a solution to those questions. Two more pitches.

>> I had the opportunity to present this morning about our diagnostic decision support tool and how we are conducting diagnosis and how this can transform actually decision-making processes also for community health workers, so the technology is ready and live with up to 3 million users currently and we are looking specifically for an approach of health systems strengthening in low, middle income countries and jointly in a multistakeholder approach working together with government, with

W.H.O., to figure out how can we make it most valuable in these settings, so that we can create long lasting impact.

>> There is already existing programme, there is a pitch for an existing programme, show of hands. You heard about this at length on the presentation, show of hands how many people would be interested to work and partner and look at the opportunities there. Great. You have a amount of people there. Go ahead, please.

>> Yes, hi, I'm Rafael working at the faculty of medicine at the institute of global health at the university of Geneva work leaning closely with tropical medicine department at the university hospitals and with NSF. As I mentioned, snake bite is current major humanitarian and data crisis in global health. Thousands of people die from snake bite every year. There is a new political and scientific momentum with W.H.O. now supporting and has recognized snake bite as a major public and global health problem. There is a new window for innovation and technological innovation around it.

What I'm suggesting is can we work together in building the first and biggest and massive photo repository of snakes, and then work on algorithms to actually try to identify snakes with the machine learning system but also trying to bring the crowd and citizens science approaches into this to support working in remote areas, South Sudan, Nigeria and other critical countries, India as well of course. The project is about to start in September, but we are very open for further collaboration on different levels,

including why not funding of course, but particularly manpower in the field of artificial intelligence, app development, citizen science approaches, etcetera.

I'm very open to discussion. Thank you very much.

>> Thank you so much. Strong pitch again, we saw the presentation on snake bite, raised pertinent issue hasn't got much attention. There is already work done and there is a opportunity. Show of hands who is interested in partnering on the snake bite projects and how it can be done. That is great. You have got some things here, that is great.

>> Great, thank you, I'm with McKenzie & Company and part of our noble intelligence initiative. Noble intelligence is a new initiative we have where we are trying to use AI to have impact on humanitarian causes, both within public health but also broader. Right now we are looking for partners, particularly those with large data sets where we can bring both our data scientists, we have over 200 data scientists through acquisition of quantum black similar to Google's deep mind if you don't know it, to leverage our world, our global ecosystem and network.

The biggest part is to have dramatic impact in this area, particularly we are looking for global ideas, regional ideas. Thank you.

>> Great, thank you. A call for collaboration with McKenzie, that is exciting. Anybody interested, show of hands, McKenzie, data science, great, fantastic.

Lukasz, please.

>> The problem that I identified recently by going to artificial intelligence conferences and conferences like this is that there is just enormous gap between academia and healthcare and people who want to make difference in healthcare. That is the problem that I'm trying to solve right now. The way to solve it is by this health AI initiative at Stanford, where we try to find people who are interested in solving problems, and then problems that could be solved easily, but right now it's Stanford so it's part of Stanford but ideally I see it as a global organisations with key players involved like other research institutions and W.H.O. and other ITU and other institutions that can help on deployment side.

The actual first steps I want to take is to choose problems that can be solved right now with existing algorithms, just one problem in which we see the highest possible impact on number of lives that we can save, and the actual simplicity of the algorithm that could be ...

(off microphone).

Problems are massive. That is the general idea.

>> Thank you, Lukasz. Call to join hands with Stanford, ITU, to come together and find common solutions, identify the problems and find solutions. That is the call. Open call from Stanford and any other places to join, show of hands. I've got two more. 30 seconds, I'll give you one minute because you were on the last first but you guys prepare for 30 seconds, please.

>> Hello, everybody. I presented this morning. The idea is to

use targeted advertising for public health campaigns, so avoid people getting sick in the first place. One of the key things that would be of interest is to try to do machine learning to see what message works best for what part of the population, so rather than just using one message and broadcast it to everybody, we try to find, learn the right message user and combination, marketing 101 but used for public health campaigns. This would be for nonprofit research organisation. We are looking for people in the public health space, run campaigns, or that are interested in large scale behavioral change.

>> Fantastic. Wellness and keeping yourself healthier before getting to disease areas, call for analysis and AI use in that form. I personally am interested in that track. We have been working on this. I'd be willing to work on that piece. Show of hands, people interested in that piece. Fantastic. Enough hands going out there. Pitch here somewhere, no. Okay. Yes, gentleman, sir.

>> I'm from global AI, we are in the same position kind of as Lukasz and also McKenzie, so we have competence from the technical side and we see so many interesting projects here. We are a small start-up, like I said. So reach out to us, use us for what we know, we are building components within IoTs, sensor data, time series data, we are doing some text personalization, and we are putting that together into a product. If you are looking for competence, reach out to us, please.

>> The pitches that we are looking for geeks sitting outside,

make sure you look for them. One last one.

>> Hello. The pitch that I had was most of us --

>> Identify yourself.

>> I'm Reuben, I have a start-up in India. The pitch is most of us here struggle to get data, struggle to get the AI product out and then get it to market in different countries. This was, for instance I'm working on oral cancer screening using mobile phones using pictures taken, you can identify precancerous conditions. There are interesting projects happening here, chatbots, to hearing a child cry, the sound and analyzing that.

So but getting those to markets is going to be difficult. What I was, the proposal is to have an integrated platform, where it is not like it's meant for one, where more people so everyone competing against each other, we are trying to find different solutions. We also find solutions for healthcare problems that most people do not attend to because there is few people attempting it or there is few success rates. It's what I'm proposing is unified platform where we could integrate not just oral cancer but a chatbot in it and propose a solution.

>> That goes back to the comment that the method that was proposed as part of the Study Group where we bring together different opportunities that are there. It's a good point. Oral cancer itself is a big issue and how can it be combined with other cross-cutting platforms. That is clearly one of the pitches, I encourage you to discuss that.

>> I want to piggyback on that as well. There is the crowd

breaks pitch but you have seen that, but I'm noticing that a lot of people have the same kinds of problems, except something we noticed also three years ago, and as a consequence, we built another platform that is called cloud AI.org. If you go on line, look at this, we have already multiple challenges, also with Lukasz, snake gap is going to use it, if you have any kind of image recognition, mapping problem, the platform is already there. It's open source. And we have over 6,000 registered data scientists already that are willing to work on your problem, and we associate typically with IEEE and so on, types of conferences, so that the winners can go to these conferences and get papers.

So I want to put this on everyone's radar crowd AI.org. We have it funded, that is not the problem. The problem is that we have to turn down most projects because we don't have the resources. So if there is any funder that wants to accelerate many of those problems, we would love to help.

>> How many developers you have in that network? Are there engineers?

>> Thousands at the moment.

>> There you go. I was talking to a few of them. There is a whole bunch over there. This is fantastic, we hear about 20 pitches that have come out, both sides, some problems and some responses say they are willing to help. Very good process going forward. The process we can discuss exactly how we can structure. So now we have 30 minutes, we are going to break for 20 minutes approximately. I urge you to get up, walk across, talk to people

that you think is the most exciting projects, discuss how you can collaborate and come up with concrete structures and then come back and tell you how it can be structured.

The one opportunity that you have is that if it's a strong project, it can be supported by most of the players here, and we will try and bring that back to the next AI summit to see the outcome of that project. That is where we leave it. We reconvene at 5 :20. Same place. You can go outside, you can stay here. You can discuss, walk around. 5 :20 we will try to summarize and wrap up the session. Thank you so much. (pause).

(standing by).

>> Can I have your attention, please? I know the discussions are going strongly and people don't want to listen to me. But can I ask everyone please take your seats for the last five minutes, and we can continue the discussion afterwards. Can I ask everyone to take seats for the last five minutes. We will summarize the session and discussions on the way forward. Then you can continue the discussions after that. Taking the pitch from Thomas, I invite him to speak up on the --

>> Can you go to the first slide and make it full screen? I made the pitch and people came and asked what is the focus group, and I can understand that you don't know that which is perfectly fine. Let me explain what a focus group is. It's an open platform for collaboration. You don't need to be a member of any of ITU or any organisation. You can just participate, anybody can. We need to define what it is. And the terms of reference,

define what a focus group is, so that needs to be agreed.

Somebody needs to manage it, and I'm already regretting that I'm standing here and a set of target deliverables will be defined in the focus group.

There will be support, and I'm guessing it's from the ITU, I'm going to -- (chuckles) and there will be a website and meeting list, etcetera. The focus group has all sorts of freedom to do stuff, and it will be in an organized way. So it would meet physically or electronically. It could meet in between and or it could conduct all its stuff through mailing lists, and exchange platforms and do both as well.

There are current focus groups and the way this came up is that we have already, we just created one about half a year ago, a focus group on machine learning for 5G. I'm the Director of research institute that does 5G and machine learning, and we notice that the new 5G networks require lots of machine learning. We also do machine learning for medical, and biological research. So that's where we are.

This focus group machine learning for 5G is actually one example that you could look up, it exists, you find it on the ITU website. You find the terms of reference, and you find lots of other aspects to it. It's well structured and organized. The other focus groups are much more loosely related to that. But they exist and I wanted to make you aware that they exist.

So maybe we very quickly out of discussion put together the proposed focus group on AI plus health. Many of the pitches on

AI, they have common problems, issues. They of course, there are lots more diseases than we can have projects? Nevertheless, there were these common aspects that we could actually address when we organise things. So the structure to share information, to collaborate, and a AI summit next year, was this one successful, maybe there is one next year so we could present things next year at the AI summit.

What we need to basically do is we want to be inclusive, we want to include the projects that have been brainstormed. We want to have a use case description. We want to collect data and models and quality and I hope W.H.O. is going to be supportive of this. We want to create interfaces and architectures, service and business models, all open source, I think that is a separate bullet. Then we want to have an evaluation on the impact I think is a common problem. We want to assess and validate the criteria. And maybe this can be done in an iterative fashion, so we can improve, we start with something and we can improve it and make it publicly known. Outreach would be another thing.

So this thing would be the collective outreach activity for the AI for health activities here. It's also a way to publicize that this activity starts and then it also helps us to move things forward in the direction of regulation, public health service, and one of the most important things, to me as an engineer, is actually that we may at some point get a validation that this really works and the validation is done independently. So you have some AI tool that provides a prediction and somebody else

validates it. And this is the best thing that can happen to you. Then we can move on top of that and make it bigger. That will be the idea. What do you think? Yeah, please.

>> I think this is really fantastic. Thank you very much. This is really something that W.H.O. would completely participate, because it's a normative process that W.H.O. engaged in other Study Groups. I think what would be useful is that the Study Group questions are carefully crafted to make sure it is going to address the immediate problems in the AI for health, in some targeted areas. We can flesh that out as we go along.

But also include, there are many number of individuals, we think W.H.O. who would be able to contribute that we can go back to getting the expertise. The more thematic areas that we clarify the better it would become for us, so that the problem is checkable and addressed in a clear way.

We need to do maybe a three prong approach to request for experts to participate, one is the technical experts in the area of AI period insofar as programming and modelers. The second one is we need subject matter experts in topical areas for diseases, whatever we take that as a complex disease that can have multi dimensional approach to which commonalities for other diseases can take place. So we need that kind of expertise, and then the third expertise is policymaking and the policymakers expertise, because the digital, this particular standardization if it goes through it falls in the realm of telecommunications or FCC, Federal Communication Commission kind of space along with health space in

the countries as far as output. We need to get those kind of people to be in it, and one or two health law experts, health data law, so those kinds of expertise will get you the best discussion to yield something going forward. Thank you.

>> Data formats and standards would be something that may result from this. I don't think we are there yet. But that could be one of the outcomes, yeah.

>> To add to that, as we started the beginning the focus was on doing and showcasing at the next event, focus groups will look at being able to convert this into practical implementation opportunities and helps implement those. It is not just we are talking on paper. We are doing something which can be discussed, the progress can be discussed.

>> It's a very good idea. It could really be transformative, if we manage to as you say like bring together the techies with the medics and the policies because that is one of the big, big issues we have right now.

I think we would really support the ideas, so we would like, the hard questions is like how much, how many full time equivalents, do you have a feel for this before we develop the full proposal? How big is it? Roughly.

>> How many pitches did we get for proposals? Do you have an overview? 20 pitches, right? This is administrative support. All the pitches need to do their work themselves, it is not that somebody would be here and debugging with them, right. It's not that. It is facilitating the work, the pitches have a platform,

they can exchange, they can access data, etcetera, these things. So I will imagine that we are talking about maybe two people that maintain this from the technical side. You have an idea?

>> Thanks. That is a great question. Some of the focus groups that Thomas mentioned as prior, ones that have completed or currently are under way, have various foundation support, for example, the focus group we did on digital financial services had the Bill and Melinda Gates Foundation supported for two years with roughly \$2 million but there was an extensive programme to bring experts from around the world to pay for expert, for speakers to come to the focus group.

We have the focus group on digital currency with support from the digital Fiat currency institute in the order of couple hundred thousand. It depends on the ambition of the focus group to what they want to do it could vary from a couple hundred thousand to a couple million.

>> I'm from ITU. The most important thing that one of the KPIs of this focus group should be on how successful the focus group is supporting ideas to go from pure research or even piloting two health systems. This is probably what the W.H.O. and other public health organisation will be really interested in. The fact that we bring in one place people who are seeking technical support, whether they need some machine learning expertise, whether they need some of the assessment criteria and framework because I think it has been mentioned that you need to have someone who says to the government that you can trust this algorithm, and if working

with W.H.O. and with the work within the focus group to come up with this assessment framework, that is a huge value for developers, etcetera.

I think we can make the assessment on to what extent this focus group can bring those solutions to complete deployments. That could be a good way to assess the level of efforts that would be required.

>> I want to second that. If I look on added value provided by ETO so if you have our source code ready published, that somebody basically labels it, not label, certifies it, it keeps us done that, that would be great having from ETO for example and KPI could be how many source codes for good on the health track, you basically authorize with your values and digital standards within one year. That could be a very good function.

>> I'm not a ITU person but it is important to realize that currently this is an activity of the participants of the summit, and they need to basically work together and find ways, it will be amazing if we not only could show that AI for health algorithms work like in diagnosis and other areas and prove it, and then also pave a road towards approval through the regulatory agencies in the medical area. That would be, this could be one of the important goals for the focus group, and the ITU would really facilitate it, and the members of the focus group, participants would have to develop through a consensus method, and then suggest it to the authorities to get it approved, for instance, to be reimbursed by a insurance company.

>> I would like to add one piece of information. If you think about this as a proposal to a funding agency, to establish the working group, because this is how the funders will fund, the funders will not be funding the organisations like ITU and W.H.O. if it is not a proposal to them.

My suggestion would be is if this working group were to be established, this working group terms of reference would be, a proposal to Gates Foundation which W.H.O. sends many proposals to and in light of our DP speaking yesterday and supporting AI for health it's highly likely that W.H.O. will work with ITU to present a proposal to the World Bank or Gates Foundation or any funding agency. But the idea here would be is the outcome of what that activity is going to do. That is where the terms of reference should be categorically clear, because each agency ITU has its mandate to member states and its bodies and W.H.O. has. So we have our own working principles, but because it's a normative work, in other words, it leads into standards and norms, this will allow us to formally participate in making this take off properly. That is a good win for this track, to have come up with the idea of taking this forward that W.H.O. supports.

>> Other question, typical questions from funding agency, what is the exit point of this? What is the exit point, when do we exit?

>> We can establish it quickly, once we have everything written down, and figured out what we want to do, and we could let it run for exactly one year and review it in a year from now, and if we

think this is good, we will just renew it for another year. If we don't think this is working, we end it.

That's one way. You can also say have this thing run for five years. It's up to us to, gee, this is a new idea. I'm still, I don't know why I'm standing here (chuckles) it's up to us to figure it out, how to say, the only goal here is to actually provide some real progress in the necessary direction. That is the only -- whatever is necessary, we should do, that means if we go for a longer term thing, that is fine. If people are, I don't know, we make it shorter, but I don't think -- the good thing about focus groups is they have a clear description in the ITU bylaws on one hand. On the other hand they have all the flexibility towards regulation and standardization. This is what is urgently needed because we have three groups that currently don't talk to each other, which I realize at this summit, I think.

>> Framework for AI product to reach regulatory approval, something like this.

>> And to create standards that support AI based on data. Create data standards, I know that the way at hospitals patient data are being generated is different in every country. In Germany it's different in every state. It's a big disaster. Maybe it's the way to get it right.

>> It's the same in UK. But data and data format is a minefield compared to AI.

>> You don't have to deliver on everything. That is the aspect. If this needs to pass to regulatory approval, that will

be a huge outcome. If we have another goal that we can fulfill, that will be another huge outcome. I'm good with one huge outcome.

>> I want to add clarification, we need standardization insofar as data standards for AI related matter which we are discussing. We have to be cognizant that the standardization is also TC 215 in the ISO and there are other agencies already in the business. There are many cross-references that will happen. That is why the terms of reference becomes key. Exactly what you are solving is different than what you think you are solving, because that is what the focus group is impact.

>> Focus group can say ISO TC 15 format is the one that we think is bringing us forward. It's not that it has to do original work. It can say this works and this works and we develop this and we put it all together and this is our recommendation. Then the whole thing starts running. That is flexibility there.

>> Thank you. Bringing together all the pitches that came together, and how it can be structured one place, and jointly benefit not only the sharing of knowledge but also implementation. Thanks for bringing up the idea. We will continue to phrase that. We will look upon to the donors also, UNICEF, can support how we can jointly (indecipherable).

I think I better stand up and --

>> Quick question. Are the slides that you just produced here, is this going to be shared somehow soon? Or you have a understanding of how will this be shared?

>> Everything will be shared tomorrow, all things will be shared on the ITU website. Yes, it will be there for sure.

>> Basically, tomorrow there will be a session where we bring the outcomes of the different four tracks, so we can provide report back to the plenary tomorrow about the different pitches and how we manage to somehow bring those pitches into one, the pitch of the pitches I can call it maybe. Those slides will be reviewed tomorrow.

Once they are presented, we are going to send back or we are going to put them on, in the website of the AI summit.

>> Thank you so much. All the pitches that were made today, we will connect with each one of you, but feel free to reach out if you are impatient to us. You have the contacts in the app, all the information is there. It's all open data. You can use them to please reach out to us, if you have other ideas, please shoot them to us. Thanks so much. Thanks again. I want to thank you on behalf of all the Co-Chairs for making this day a success. I was skeptical in the morning when I saw show of hands that health was not the top one. But I think it was, we had the full house almost all the day. Thank you so much. We look forward to working with you in the near future. Thank you.

(session adjourned at 1750)

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