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AI FOR GOOD GLOBAL SUMMIT

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POPOV ROOM

All Nippon Airways (ANA) Avatar Demo [Own Your Own Disruption]

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>> AMIR BANIFATEMI: How many of you have dreamed of teleportation? So we are going to talk about that. Let's watch a video first.

(Music)

(Traffic noise, sounds of children)

(MUSIC)

>> AMIR BANIFATEMI: So it's my pleasure to invite Kevin and Akira to take the stage and talk about the big vision, which is called at ANA Avatar.

(Applause)

>> Thank you, Amir, and hello, everyone. It's a pleasure and honor to be here with all of you at the AI for Good Summit, so thank you for having us.

So today we'd like to talk to you about avatars. So what comes to mind when you hear that word? Perhaps the 2009 Hollywood film or those animated characters that you create to represent yourself online. But what we are referring to is the technology you see here, a technology that although is still in its infancy will eventually allow us all to exist in a remote real location, see, hear, feel, interact, explore, and impact our world in ways that we have never been able to before.

Avatars will be the future of transportation, essentially

extending humanity's physical reach and giving all of us the opportunity to teleport our consciousness, presence, and skills to anywhere on the planet instantaneously. Which, of course, leads us to the most common question that we are always asked, which is: Why? Why on earth would an airline pioneer such technology where you can now travel without ever getting on an airplane? But we see things a little bit differently. We do not see avatars as being a competing technology but, rather, an extension of the service that we are already providing.

So if you give me a few moments to talk about the impact of the airlines over the last hundred years, I mean, if you think about it, I think it's safe to say that we have played a key role in helping to globalize our world. I mean, essentially providing that base infrastructure that has helped to facilitate and catalyze international businesses, relationships, diplomas, for example, mutual understanding, collaborations, and shared experiences like this summit that we are all attendingtogether today.

But as a player in this industry, I can definitively say that we are not doing a great job of providing this service. I am not talking about the terrible in-flight meal that you had on your last flight or Mayor Peduto's baggage which we have no idea where it is right now. I am talking about something a little bit more profound. What am I talking about? If we think about the fact that, you know, we are an airline that is part of a large, massive, mature industry, we

transport somewhere in the ball park of 3.8 billion passengers per year. This is a pretty massive number if you really think about it. It's representative of over half of the world's population. And I think a lot of people within our industry and outside of our industry are kind of misled by this figure and the growth of this figure because our true impact on the world is much, much smaller. This is the number of seats we sell, not the number of passengers we actually serve.

If you allow me to do a little bit of simple math, we do some market research, and we can find that upwards of 99.x% of passengers fly simple round-trips. That immediately cuts our unique impact in half. Then when we consider that many of you here travel multiple times a year, cost-conscious customers will travel multiple-segment trips to save money, we quickly realize this will drop further. By my calculation, I estimate the average passenger will travel four round-trips per year. Our impact as a global industry is a mere 6%. So the world that we thought was so global and interconnected is really only connected in the digital sense. We are still not adequately connected physically. And as the only efficient provider of this service over long distances, I think this is a huge market failure.

So while many in our industry are continuing down the road of optimizing our services towards the 6%, Akira and I believe that there is a larger, more meaningful reason for us to find a breakthrough, a way to approach the remaining 94 to provide this extremely valuable service of physical access to the rest

of the world.

So now we are talking about scaling the domain or the business scale of the airline industry from 6% to 100%, which seems or sounds impossible, and I think it is. Unless we change our mind-set and kind of think outside of the box a little bit.

So like the Kodak example that many of us are familiar with, we took the time to kind of think about who we are as a company and what we are really trying to achieve. So we asked ourselves the simple question: Are we simply an airplane operator? Is that really our goal? And that simple question gave us the opportunity to kind of reflect upon our corporate history, and we realized we didn't even start off as an airplane company. We actually started off as a really, really small helicopter company, just two helicopters, 16 employees, and a vision to connect people within Japan and around the world for the betterment of society. So this thought exercise helped us to realize that no, we are not simply an airplane operator. We are a company that aims to connect. We are trying to connect and bridge the gaps of distance, time, and culture that exist in our world, and it's within that framework that avatars fit in just perfectly.

But some of you here in the audience may still be questioning, wait, wait, wait, do we really need avatars? Avatars kind of seem a little scary, or the idea in itself is absurd. But when we think about the positive use cases of this technology, they are almost endless, and it's really

these positive use cases that I am confident will drive this technology into all of our lives. So of course, yes, we can travel to anywhere in the world instantaneously. That's great. But we can now also go to places that are not suitable for humans. We can expand our exploration of space and the ocean floor. We can now more safely and effectively go into hazardous areas to do disaster relief. We will have a new capability to remobilize the elderly and the impaired. And I think most importantly, we will be able to now share our skills limitlessly one hour at a time to those who need it the most.

So if you think about it, if we place one general-purpose avatar, just one, in a very, very remote village somewhere in the world, that village will now have access to every single doctor, every single teacher, every single engineer, scientist, agriculturalist, designer in the world, and they can call upon those resources, and someone with that skill-set will be able to avatar in for 30 minutes, for an hour, to provide those real-life services. This is going to change the game completely. Essentially giving us the ability to limitlessly share our skills with one another for the very first time. And I think this is the greatest hope in overcoming the problem of physical access, which has prevented us from solving many of the global challenges that we still face today.

So in the past few minutes, I have hopefully been able to cover a few themes. First of all, what we define as an

avatar. It's a real-world avatar. And why? Why as an
airline and why as a member of society we are pioneering this
new technology. Which leaves us with the question of how?
Obviously, in order to start a global movement and introduce
this new form of transportation, it's going to take quite a
bit of effort and momentum. So within ANA, we have created a
global multifaceted initiative to really get the ball rolling.
So to talk more about the details of that, I would like to
pass the stage on to my colleague, Akira.

    >> AKIRA FUKABORI: Thanks, Kevin. So the cornerstone of
the ANA Avatar vision is the ten-year, $4 million avatar
enterprise. With this, we can create the world's first
general-purpose avatar. In addition, to make this avatar
market really happen, we are working quickly to prototype and
test and release the basic avatar service in the market, using
existing avatar component technology. We have partnered with
one of the areas in southern Japan, and they have agreed to
become the world's first avatar test field, and we will be
deploying many basic avatar services in categories of, for
example, education and healthcare and also space exploration.
Furthermore, to raise awareness in helping prototyping
capital, we have opened up our service platform, crowdfunding
platform, to those who are working on avatar-related projects
to raise funds, together with our global customers.

    So some of you may think that avatars are science fiction,
but the technology to create an avatar already exists. So to
create an avatar, you need an exponential technology such as

AI, VR, AR, telecommunications, sensors, computing, haptics, and robotics. But currently these technologies are developing independently. This is where XPRIZE comes in. By holding an XPRIZE, these technologies can converge into an avatar.

So AI, we need AI to create an avatar. (Inaudible). We can also use when we have data loss, a network loss. And using these AI to really create an AI future platform by collecting all the data of human actions and skills and knowledge that will be available.

So anyway, until now, XPRIZE created their competition in house, but starting from 2016, they opened up the process to outside organizations to create the next XPRIZE. And Kevin and I competed in the very first XPRIZE design competition called visioneers, and we competed against eight other global teams. Our main theme was transportation. Of course. At that time, we had other solutions than avatars, like microrockets, hyperersonic jets, but we realized we were facing the same thing we are facing now with these ideas. So we started to look for another solution and think outside of the box.

So what would the ideal solution be? We came up teleportation. I see some of you smiling, but that's exactly the same reaction we experienced during the first day of the visioneers kickoff. Eight other teams either laughed at us or ignored us. But there was one person who was 100% behind our idea, and that was Dr. Peter (?) the founder of Express Foundation. Thanks to his support, we decide not to give up.

We interviewed futureists, physicists, and experts. We actually interviewed the first person to successfully teleport photon particles, Dr. Akira Fersol. Anyway, so have done the research, and we found out it is possible. It is possible, but we found out it will take more than a hundred years. That's way too long for XPRIZE. XPRIZE has to be five to ten years. So we looked for another solution.

If I cannot teleport myself, what would the next best thing be? If I could use my consciousness and be physically present in another location? Is that a possible solution? Well, yes. This avatar solution is possible within five to ten years. So this is the journey we came up with the avatar XPRIZE. While this prize will really accelerate avatar technology, we are also developing and releasing basic avatar service into the world. And we would like to show you one of the services today. So it is called ANA Avatar Fishing, and we will do the demo. We actually use real haptic technology which we use these technologies for Avatar hand. You can actually feel the softness and the hardness. We actually use that technology to create a fishing service. So we tied up with Keio University and used a simple Stamm, tied up with a start-up, and you can fish remotely from your home with pound-per-pound haptic feedback. It's not a virtual reality. It's a real fishing experience. And the fish you catch will be sent to your doorstep the next day. Yes.

So now we would like to do the demo. Mayor, if you are happy to experience the demo, we would love for you to come up

to the stage, please. Actually, we had one accident
yesterday. We actually received this robot from -- we
delivered it, and FedEx actually broke one part, and one part
was missing, so actually, we had to make the part with wood,
and many people actually helped us to create the backup, so
thank you for everyone for your support.

So the technology seems really simple, but you will
probably get the sense how you can teleport your
consciousness.

>> KEVIN KAJITANI: So as we get the mayor ready for this
demo, I would like to just speak a few words about it. As you
can see, the system itself in terms of appearance isn't all
that spectacular, but it's really this simplicity that makes
it so amazing. You know, we talked to a lot of people who
think that avatars are a far-off future or that the avatar
services that we are creating will be completely detached from
our day-to-day lives. But hopefully this demo will help you
to see that we can create basic avatar services with existing
component technologies that can be easily distributed and also
will have far-reaching impacts in the world. Just a simple
system right here, which has one degree of freedom, can be
deployed to create new paradigms in farm-to-table, for
example. And furthermore, we can help to spread expertise
fishing skills to many parts of the world who rely on that for
their livelihoods.

Now, again, currently we only have one degree of freedom.
We are creating the second version of this, which will have

four degrees of freedom, so you will actually be able to really have a true fishing experience. But hopefully it looks like the mayor is getting ready here, so let's see how this works.

So if you can imagine that this is the operator, and this avatar on this side is now located in some remote fishing area.

>> AKIRA FUKABORI: How is the feeling?

>> I don't know why I can't see you but I can see the rest of the room.

>> KEVIN KAJITANI: The reason why the mayor can't see Akira is because he is seeing through the eyes of the avatar.

>> BILL PEDUTO: Actually, I am seeing the audience.

>> AKIRA FUKABORI: So our plan is to actually place this avatar in the ocean, and you can actually fish from a far distance. So yeah, you can fish tuna in Japan and have sushi on the weekend.

(In the background, there is mellow music with nature sounds, the water splashing, and the fishing line.)

>> AKIRA FUKABORI: So yeah, we will have the next prototype in two months, so we have bigger motors with more movement. So I hope next time we can let everyone experience it.

(Applause)

Actually, it's the first demo. I am glad that -- usually we bring really advanced robots, but it's not about robotics.

It's really about teleporting your consciousness and sharing

skills. So we actually selected this demo. So everyone,

thank you for joining today. ANA will continue to break

through the boundaries of traditional boundaries to become an

airline for all. Thank you. Thank you, everyone.

   >> KEVIN KAJITANI: Thank you very much.

   (Applause)

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