

## **STI conference (Noriko Arai) 7-10 min.**

1. Ladies and gentlemen, it is such an honor to be here and to share ideas and concerns about sustainable development with all of you.

Today I would like to talk about the sustainability of the digital ecosystem.

We are living in a so-called “knowledge-based society”. What this phrase is supposed to mean is a society that generates, shares, and utilizes knowledge for the prosperity and well-being of its people.

Tech giants proudly claim that “everybody on the planet can now access information equally, owing to Information Technologies.” Of course, this is partly true. Today even a girl growing up in a rural area under harsh sexual discrimination can now access wonderful learning materials for free on the web, study hard, and win a scholarship to the very best university. Tech giants also claim that they “provide unbelievably useful technologies for free and create new jobs all over the world”. This too is partly true. Today even a woman living in a dangerous neighborhood in a politically unstable state can start a small business thanks to worldwide online payment systems and smartphones.

These kinds of developments are truly wonderful. They were unimaginable in the previous century.

2. But, we have to face the dark side of the new digital ecosystem, too. The wealthiest 1 percent of the world's population now owns more than half of the world's wealth.

It is said that only 8 people hold the same amount of wealth as half the world. This development was also unimaginable in the previous century. It is neither acceptable, nor sustainable.

3. How did these developments occur? It is, at least partly, because of the mal-operation of the digital ecosystem.

Giant tech platforms do not sell their products or services. Instead, they harvest people's attention and data, and sell those in exchange for so-called ‘free’ services. Their services are very attractive and useful. They are designed to be addictive so that they can harvest more attention and more data. And above all, they are free, unlike analogue equivalents.

The global digital ecosystem tends to fall into international monopoly very easily. Unbelievably huge amounts of money accumulate every day. With these abundant funds, tech giants can hire the very best talent from local communities all over the world. These employees keep optimizing the digital ecosystem and maximizing profitability for their employers. Local companies cannot compete with such giants. Local communities cannot stand up and say ‘NO’ to them.

But who nurtured this talent? Who paid for their education?

Local communities.

Once an international digital monopoly is achieved, it is very hard to break out of the loop. But we have to remind ourselves that giant tech platforms are not nations which have the function of redistributing wealth. They are private companies which aim to accumulate wealth.

And here is the bad news: the rise of Artificial Intelligence (A.I.) and the internet of things (IoT) is going to accelerate this process.

4. In 2011, I started the Todai Robot Project, which aims to make an A.I. able to pass the entrance examination of the University of Tokyo, the top university in Japan.

Why did I take the university entrance exam as the benchmark? Because I thought we had to study the performance of A.I. in comparison to humans, especially those skills and expertise that are believed to be acquired only by humans, and only through education.

This is our Todai Robot. Of course, the brain of the robot is working in a remote server. Our Todai Robot is now writing a 600 word essay on maritime trade in the 17th century.

It took sentences from textbooks and Wikipedia, and combined them together to produce an essay without understanding a thing. But surprisingly, this unintelligent machine wrote an essay better than most of the students.

And in math exams, it was ranked among the top 0.5%.

5. This is the distribution graph of the half a million students who took the same exam as the Todai Robot. Our Robot is now among the top 20%, and it is capable of passing the entrance exams of more than 70% of the universities in Japan, but not Todai. Look how A.I. is beyond the volume zone of "to-be-white-collar workers".
6. The issue is not whether A.I. is creating new jobs, or taking jobs from us. The issue is its balance and sustainability. If people lose their jobs and houses, there is no way for them to make use of a smart speaker. If local shops disappear because of E-Commerce, how can these people without an address buy things online and have things delivered? They simply can't.

I know that most tech giants are very optimistically engaged in corporate social responsibility activities. But, we should not be satisfied with this. What we need is to change the redistribution of wealth to keep the digital ecosystem sound and sustainable. I am not asking these companies for charity. We need rule changes. I believe that this would be beneficial not only for us, but also for the tech giants in the long term.

Thank you very much for your kind attention.