CARLOS MOREIRA

Founder, Chairman and Chief Executive Officer of WISeKey, former UN Expert on cybersecurity

Thank you very much. It is a pleasure to be with you all on this panel again after the opportunity to discuss that remotely. In my presentation yesterday, I raised the issue and concern of not making humans the center of gravity of the Fourth Industrial Revolution. Humans need to be in control of everything that is happening around humans and not the other way around. One thing that is a huge concern for humans is health. It is actually the health of humans; we are not talking about something that does not concern us because it is our health. We say that for health, but it also has to be for everything else, our data, our consent, our identity and our control. If somebody in 2019 had said that one day we would be providing biodata at the same time we showed our passports, used our mobile phones and provided geolocation, they would have said it was crazy and would never happen. However, this is exactly what is happening today; we are actually doing that every day, every time, every airport, every hotel, every facility. This is creating a situation that could get out of control very fast.

Yesterday, I mentioned the issue of social media treating humans as consumers but in the health industry a patient is actually a consumer. The health industry lives on the patients and the sicker you are the more money the health industry is going to make. Behind all that there is always a fight over who should own that data. The data process, from collecting data from something as simple as a Covid test, all the way to the Cloud, to the analysis and back again to the response, includes numerous players, many of whom are not secure. As a cybersecurity expert, I always analyze every step of the security and if one step is the weak link without security, then the entire chain is compromised. Three weeks ago, the United Nations in Geneva was hacked. Last week, many major multinationals were hacked. Hacking is becoming an industry and the Dark Web lives on that. It is so easy to compromise and hack a health industry organization that is not secure enough to maintain the data. What happens is that all the data goes to the Dark Web, it is then commercialized and available for hackers to further hack you. However, there it is not just hacking our financial records, where we could lose money, or consumer behavior, here it is hacking our health. WISeKey has been observing around 60 traceability apps, including the Swiss app that was rejected by the Swiss population because of the lack of security. The problem with them is that they are so easy to hack. In 99% of cases, the apps we download on to our mobile phones are not cybersecurity friendly and tested. For example, that means that they are not using digital identity, or segregating what we call the PII, personal identifiable information, who you are, your blood type, or your DNA. All that data is supposed to be under your control and used with your consent, and it is now being provided together with your identity. It makes no sense because we now have technologies like Blockchain that allow you to segregate that. You can take your PII and encrypt under your consent and then you can give all the medical data you want but

you do not want it to be related to your PII, which is yours to own and is like the key to your house. The key to your house is your key and you may consent to give it to a very specific person you invite into your house, but you do not give it to someone forever and unconditionally. That is what we are doing on health, we have giving out our keys unconditionally.

The way to solve that already exists. One of the things that the Covid pandemic has demonstrated is that some countries managed to fight the pandemic through a sophisticated digital transformation strategy, part of the Fourth Industrial Revolution. They are actually moving away from the pandemic with an amazing record of protecting their citizens, their health and their economies. Countries that were not ready are actually suffering a lot and this is not only developing countries, but it also includes many European countries and many American states, and others. The reason they are suffering is because the digital transformation has not been taken seriously.

As we move forward into the Fourth Industrial Revolution, these principles have been very well tested. Humans have been able to defend against many crises, wars, atomic challenges, etc., and we have technology to make sure that all of these things do not end up in the wrong hands. I mentioned yesterday, that in 20-years' time when we look back, we will have forgotten about Covid and the pandemic, but we will have realized that it was in 2020 that the world entered a dangerous phase where our information is being used without our consent.

What is going to happen next? As I also mentioned yesterday, technologies are converging, so now you have AI, which is being expanded by quantum computing and unlimited computing power, with an amazing amount of data. AI needs data: AI without data is like a child without education. If the data relates to us humans, then AI will analyze this data without our control. We are about 20 years from the extension of AI that we call the singularity on AI, which is where one computer will be more powerful and intelligent than one person's mind. Five years after that, the same computer will be more intelligent and will think faster than all collected human minds put together. We do not know what will happen at that moment of singularity. Maybe computers will see us as a very slow and unhealthy humans and therefore in need of enhancement. I can tell you that longevity, the possibility of extending human life, is one of the industries that they are expanding in many countries. I have a lot of friends in Silicon Valley who have made a lot of money in technology and now the only thing they think about is living for 120 years or longer and to do that, they will do whatever is necessary to enhance themselves. The amount of data and information we are giving those algorithms is contributing to the creation of this superhuman or human with unlimited health capability and resilience.

As I mentioned yesterday, the solution is very basic. It is to go back to giving humans control, putting them at the center of gravity. I completely agree with your comment of instant interconnectedness and 5G is going to allow that. In the 5G environment your house is going to be a laboratory and your toilet will analyze your bio situation and bio behavior with tracking in real-time. You will be able to send that information but with your consent. As I mentioned before, the important thing is that there will automatically be abuses if humans do not have the final say on what data they produce and whether or not they want to indicate their PII at the same time as disclosing the data. The technology is there and PII can be encrypted, which is

what our company does. As we discussed yesterday, Blockchain decentralizes the information on all the computers that are part of the block so that it is impossible to hack. Once the data is minted either through NFTs or other technologies, that data cannot tracked and therefore not modified or manipulated and it is under the consent of a person. I believe that this is also a business opportunity for the health sector. It needs to apply the latest technology and doing so, it will advance faster, but they will need to abandon the thinking of the patient as a consumer.

Patrick Nicolet, Founder and Managing Partner of Line Break Capital Ltd., former Capgemini's Group Chief Technology Officer

Thank you, Carlos. I think that also makes the link with what we heard yesterday from François Barrault's panel on technology post-pandemic with Professor Suzuki presenting the Japanese initiative on managing global datasets, creating a strategic advantage through the ability to leverage artificial intelligence. This is certainly one of the tools that we have not used well in the current crisis and that will definitely help to address some of the unknowns, discover some patterns that we might not work out ourselves in the way they evolve when you have so many unknowns. I think that is definitely an area that we have started to look at and I agree with you that we have all these silos, and it is has been mismanaged so far. I think it will be difficult to get our act together and have a good approach to this dataset. I will leave aside the question of transhumanism because it is not part of the debate and I would have to ask Daniel to talk again for a very long time.