DEBATE

Uri DADUSH

I have three very quick questions. One is, is it jobs or is it inequality that is going to be the big issue? The second is, education, education, education, but do we run the risk that we are educating people who will not have any jobs at the end of the day? What kind of education? The third is: does this mean the end of globalisation, we just use the machines instead of putting the jobs out?

Ali ASLAN

I already see quite a few hands up, so with your permission, I will collect three floor questions and then throw it back to you.

Meir SHEETRIT

Coming from Israel, I have seen some really amazing developments in Artificial Intelligence in particular. I would like to ask the panel members: what do you think of the risks of Artificial Intelligence? I say this because it was published that Facebook tried to teach computers to develop software which can talk to each other. After a few months, they discovered that those computers developed a totally new language to circumvent all their human guides. They started talking between themselves without the interference of the people who were working with them. They closed this operation down completely and turned the computers off, because they were afraid of what would happen if computers took over. I am asking you if you are of those dangers and what are they?

Ali ASLAN

Reworking the Terminator/Blade Runner theme, where the computer or robot has taken over.

Dania KHATIB

My question is for Mr Nicolet. Many believe that technology has made our world less secure, with the free flow of information everything is accessible on the Internet, radicalisation is happening on the Internet, especially now with social media. Who can contain this monster? Do you think that Artificial Intelligence is the antidote, especially when you spoke about monitoring and voice recognition? Can Artificial Intelligence be the antidote for the monster created by technology and make our world more secure five years from now?

Tatsuo MASUDA

I have a question for Mari. When I was working at the International Energy Agency in charge of oil markets, I was constantly told by some producing countries that we were institutionally over-estimating supply and under-estimating demand, to suppress prices. Are there any institutional risks in the OECD saying that we should not be afraid and that the fear is exaggerated? Is there an institutional tendency to underestimate fear and overestimate the positive side?

Donald JOHNSTON

My questions are to Masood Ahmed on the labour market issues. Masood said that people who say that we have seen this before are not correct. I think that is true to the extent that the speed of change that I worry about, but we have seen it before. I remember that when I was at the OECD, the concern was Donald Trump's jobs moving from the developed to the developing world. The result of that is that we have the kind of problems that created his base in the United States. We did not adapt. We did not solve that problem. We did not solve it in the United States or in Canada, so what makes you think you are going to be able to solve it with displacement by robots? The other question is that the jobs he wants to bring back, sound from what I hear, are the very jobs that robots can do, so where does

that take us? I just wanted to know if you think we are going to be able to do better in the future than we have in the past.

Natalie CARTWRIGHT

I run a start-up in Canada and my question is for you Patrick. We were the winners of the Serge Kampf Award, so we are grateful for Capgemini's support. You mentioned data in your presentation. From my perspective, the way we manage data in this AI world is one of the most important and pressing policy questions. I am curious if you have a perspective on how we should start to approach that?

Ali ASLAN

Thank you very much. Great questions. Masood, take the ones that pertain to your field.

Masood AHMED

I want to answer the question that Uri raised and then that Don raised as well, because I think they are connected. Mari's presentation basically lays out nicely what you could achieve if everything went well, if we were a well-organised society and did the things we needed to do, trained and retrained people. Things would then work, but the fact of the matter is, we are not. In fact, the pace of technology for the next 10 years is going to be much faster and deeper than the previous 20 years and as Don said, we made a mess of it. Our explanation today is that it was not globalisation, it was technology that accounts for 70% of the problems we are experiencing with the unemployed. In the next ten years the pace of technology will be faster, so why do you believe that we will somehow be so much more effective at tackling a bigger problem, than a smaller one. If we can, I agree with you that we can get there, but I am not so confident.

Moving to Uri's point about whether it will be jobs or inequality. I do not think it will be so much that jobs will disappear, I think that what will happen is that the nature of jobs will change. Many of the people currently doing the jobs will no longer be the right people to do the new ones, but other people may be able to do them. However, the ones who are displaced are not going to find other jobs for themselves, and this will exacerbate the inequality that we are now seeing, that we discussed yesterday in your panel. I think that inequality is going to become a much bigger problem.

Similarly, I do not think that we really understand what education we will need for the jobs of tomorrow. What we all say with great confidence, is that the education we provide today is not the right education for tomorrow. Then you say fine, what should we teach our kids to do? We say that we should teach them to be better at problem solving, creativity and learning as a goal, but it is going to be a hard slog to shift our education systems, our big democracies, to do more of that, especially in countries where education delivery is localised and diverse.

Is this going to be the end of globalisation? I think that there are a variety of things that are impacting on globalisation, which will make it happen in different ways and slower. However, I think that this will certainly exacerbate the internal political and social tensions and will fuel the kind of populist response we have seen, which has conflated technology with globalisation. I think we do need to bear that in mind.

Ali ASLAN

Thank you very much, Masood. Mari, which questions do you want to address?

Mari KIVINIEMI

There was one question directed to me concerning whether the OECD underestimates the risks I am not saying, that we do not think about the risks. However, I am bit worried that, if we are too afraid of technological change, we will not use all the opportunities there are for different countries to perform better or improve the social wellbeing of people. There are a lot of opportunities, but we at the OECD are also looking at the risks and threats. Concerning Artificial Intelligence and regulation, it is something that really has to be done by countries together, when it comes to the risks, as well as privacy and security issues. Concerning social inequality, what is really needed to improve the situation, is

equality of opportunity, so that everyone has the opportunity to educate him/herself and it does not depend on your background, as is the case in many countries now. Every country can improve it´s education system in this respect. When you for example think about the ICT skills, we have found out that 50% of adults in OECD countries have almost no or inadequate ICT skills. So it is not just early education, but lifelong learning possibilities. Then, the question of unemployment, as in Canada and the US, which have been unable to solve the challenge of technological development and globalisation. We know that jobs lost are mostly due to technological development, not due to globalisation. However, we have countries like Germany, that have been able to solve the problem and the unemployment rate is close to zero. You can see concrete examples of how to face and solve the challenges, and reduce the unemployment rate in a globalised world.

Ali ASLAN

Thank you, Mari for your perspective, and also for once again clarifying the OECD position on underestimating the risk, which is obviously not the case. Holger, there were a couple of questions relating to your field.

Holger MEY

First, I think that many of the jobs that we know today, will not exist in 20 years and many of the jobs that will exist in 20 years have not yet been invented, so it will be a case of adapting. In the past, if you wanted to become rich you had to invest a lot of money to build up a steel mill, or whatever. Today, you need a computer, Internet access, some good ideas and in a few years, you might have a stock market capitalisation for your company, which outweighs anything we know from the industrial age. I think that the opportunities are actually growing.

Is there any risk from Artificial Intelligence? Yes, of course, but I think that the most terrible things in history done to human beings, have been done by other human beings. If we think about Artificial Intelligence and how to programme computers, at least at the beginning, we might actually improve humanity in a sense. We do not know; the future is very open. I think that our legs did not invent the ground and the ability to walk. Our eyes did not invent the light and the ability to see. Our brain did not invent intelligence and the ability to think. In evolutionary biology terms it was the other way around; it was nature's answer to a challenge and it was developed in a context. Since there was ground, nature developed legs. Since there was the reflection of electromagnetic waves, nature developed a sensor (the eye) and a picture generator (the brain). Since there was intelligence, nature developed a brain to use it. It was always about the improved ability to escape danger and find new food opportunities. Our brain was developed, so to speak, in a time when we never thought about quantum mechanics and we do it because we can. If the brain was not constructed on hydrocarbons, but on silicone or gallium arsenide, what would be the difference? Artificial Intelligence does not carry the package of the old days in the savannah and the jungle, which may be an advantage, because as I said, people do terrible things to people. Perhaps this whole development helps us to progress in an interesting direction, which contains risks, but also a lot of opportunities.

Ali ASLAN

Thank you, Holger, for putting it into an historical and philosophical context for us. Patrick, I heard a couple of questions that related to your field.

Patrick NICOLET

You had a question on the risks side, so the good news is that Facebook could stop the experiment, so it meant they were still in control. The machines do what you ask them to do. Now, you have to put in place the monitoring and management mechanisms that will keep you in control. There are other risks that you have not mentioned, including very troubling things like transhumanism. I would refer to the message from Susan Liautaud yesterday morning on ethics, a subject we have been discussing with her for years. Maybe because there is too much money in this industry and the big companies are too rich, it is very difficult to launch an ethical debate, but Susan is working on it and it is the same with biotechnology. We need the debate so that we can understand the consequences and create a framework for progress. That would be one answer.

On cyber security, you are right. To be clear, we are only on the defensive side and we never attack, not only because I am Swiss, but because it is the Group policy. The fact is that we have all sorts of attacks, which are happening now, which means that they are automated, and AI operated. You must defend yourself, so it is machine against machine; an arms race where you escalate and spend a fortune, but as companies we have no choice. It is an arms race and you must compete, but having said that, it is human error that is responsible for 90% of cases where systems are compromised in the companies defending themselves. For example, you let a subcontractor plug a PC directly into your network without going through the right procedures, the PC is infected, and 50 000 machines are compromised in a matter of seconds. This sort of thing happens every day, so discipline is important. Here again, because you cannot change behaviours in general, you have to automate. Reduce the number of human interactions with your systems, and that will reduce the number of mistakes. Yes, the answer is an arms race in cyber space.

Coming to the next one, which is about managing data, I would like to say two things. Number one, which was mentioned yesterday, is identity, because there is data where identity matters. We discussed fake news, you can think about HR systems, etc. For those who are not involved, you would be surprised to know that one individual in one company has multiple identities, so you can imagine what it is like when you look across the system where all the individuals are connected.

Identity is a big challenge when it comes to data and the second is ownership of data, and I think that this is a topic we are addressing with the IFRI and Thierry de Montbrial. The American companies have understood the value of data, and they are fighting. I thought one day that I should sue Microsoft, but then I heard that they have 800 lawyers working in-house and I thought I better find something else. They have built these capabilities to keep, protect and leverage the value and I think there is a deficit in Europe, which is something we are addressing with Thierry.

I mentioned identity and ownership, and the last thing is education. To be practical on education, I will give you one number. We have made a business from programming and we are now reskilling 100 000 colleagues in India, from code to order, to assemble to order. This is completely different work and we have a maximum of two years to complete it. We need to equip them with soft skills that they do not have and then the hard skills, to change the way they work. This is something practical that we are also confronting.

Ali ASLAN

Time is passing, so some very quick final remarks.

Holger MEY

It is always a defence/offence competition; this is quite natural. They are microorganisms, we have a vaccination and then a mutation and it undermines the immune system. Technology development is very natural, but in evolutionary biology we also have to learn about cyber resilience or resilience against cyber-attacks. Let a kid eat a cookie that has fallen on the ground. The kid might get ill, the immune system needs provocation and challenges to grow stronger, so it is a bad idea for parents to be over-protective. However, there are certain diseases that you do not want the kid to get, like smallpox, which is deadly, so you have to make sure it is not exposed to the thret. In biological evolution it is called "isolation", which are niche developments. You need both, so invite red teams and learn to survive under attack, but do not put certain things, like a nuclear power plant, on the Internet, or at least not the critical stuff. Firewalls do not help, they are as relevant as walls around a mediaeval city after the invention of artillery, nice but useless against competent and powerful opponents. At the end of the day, it is about "resilience" because the fighting dog is dangerous not just because it can bite, but because you can beat this thing almost to death and it will still bite. It can absorb strikes. Our societies, our economies, our companies need to learn how to absorb strikes, so resilience will actually be key to providing room for manoeuvre.

Mari KIVENIEMI

We need more research, service, and evidence to really face the challenges of Artificial Intelligence in the future. We have already discussed education policy and skills a lot, but a colleague here also mentioned the Universal Basic Income. In that area, I encourage the countries that are carrying out trials on this assistance, to go further so that we

can use that evidence to see how we could develop our social security systems for a better response to the future of work.

Masood AHMED

The only thing I want to say is that while I am cautious about the way that we as a society face the consequences, on a personal level I am quite looking forward to it. At the moment, when I talk to my car and ask it to dial a number, it either lowers the windows or switches to some music for my daughter. I am very hopeful that the improvements in listening and learning that Patrick talked about will come soon enough for us all to benefit from the opportunities that Artificial Intelligence will bring us.

Ali ASLAN

At the risk of offending anyone, we will not mention what car you have. With that, ladies and gentlemen and Thierry, I think that this is a topic that will be with us for a very long time to come. We will probably be talking about AI at the 20th anniversary of the WPC as well. For now, ladies and gentlemen, I think I speak for us all when I say that this has been a very intricate and substantial and, of course, intelligent debate without any artificial ingredients. With that, I want to thank this panel and you for your participation.