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Maxfiy ma'lumotlarni himoya qilish bo'yicha hukumat Ofisi maslahatchisi.

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АКТУАЛЬНЫЕ ВОПРОСЫ ЗАЩИТЫ ДАННЫХ ПРИ ОКАЗАНИИ ЭЛЕКТРОННЫХ ГОСУДАРСТВЕННЫХ УСЛУГ

Thank you very much, respected professor Rasulev and Research Institute of Legal Policy. Thank you for having me here. I'm really privileged and honored to be here among friends. In the few days in Uzbekistan, I will remember the people – polite, respectful, charismatic and with a huge amount of intellect. Madame Sever, thank you very much for taking a chance on me.

I usually start with photos like this (*Editor's note: slide shows a photo of a cassette tape*), because in my generation these were very popular. Everything was taped on cassette tapes. I found one in my wardrobe and my daughter asked what it was. It really shows my age. A survey was done in the US among the younger generation. They were given two options: go to prison for 10 days with an internet enabled phone, or live outside without such a phone. Over 80% of young people chose the prison option. I talked about this at MoJ yesterday and about the gap between us and the young people. A colleague there said his father cannot live without the internet and YouTube anymore, at 82. My own mother uses the iPhone and has issues with it every week. I also tell her not to overestimate herself.

I will cover three areas. One is digitalization overall – what we did in Slovenia and where we are. Then I will talk about artificial intelligence and finally about cybersecurity, which can be overwhelming as we must be able to protect ourselves and our systems.

We will look at what happens on the internet in 60 seconds with the recent rise in the use of the internet in the pandemic. 56% of the global population is now using the internet, which is a 10% increase only from January to July 2021. In 60 seconds there are 6 million searches on Google. Amazon

earns close to \$300,000 in one minute. It's enormous what is happening on the internet today and how important it is for all of us. Every year we produce more data than all of human history until now combined.

There are three types of digitalization. One is digitizing, which is turning paper in digital form. Digitalization is the automatization of processes. Finally, we have digital transformation, which is already a reality, but may represent a great gap between the most modernized countries and countries in digital transition. It means using all available technology, mainly AI and cloud servers to transform business completely in a way we never imagined possible. What we are talking about at the Slovenian Institute Josef Stefan is an example of this transformation and how it will impact the world of business and governance and that is artificial intelligence digital twins. Given its transformative power, this should be examined in greater detail.

The CEO of CISCO said: 'If you're not using new technologies, in 10 years you're out.' Companies that don't implement new technologies are obsolete in 10 years time. This is not only true of companies, but also of governments. It is the government's responsibility to ensure progress and transformation, aiming for the betterment of the living standards of its citizens and thus providing a stimulating environment for business.

One of the crucial ways in doing so is speeding up digital transformation. I highly recommend reading this article in *The Economist: Instant economics, The real-time revolution*. It is describing a new way of making decisions and policy-making, a way which is based on real-time data and hence gives decision-makers a more accurate account of the real situation, be it in business or in policy-making. The Economist is labeling it this technology as the new emerging discipline in economics (third wave economics). What they are labeling as a revolution, we are already doing in practice in Slovenia – with artificial intelligence.

For instance, the article describes a case from the 70s. In socialist Chile, a social communist economist pointed out that the data used for policy-making was outdated and inaccurate, and proposed to the leader to collect current data directly from the factories and farms and adjust how the country is run. This idea is now being put into practice with AI. It was invented in the 70s on paper, and is now used 40 or 50 years later in artificial intelligence. If you're not riding this wave, you will be left behind.

Just a few basics on AI. We hear about AI every day, but what is AI? It is putting a lot of paper into the empty 'head' of a computer which is then learning all the information, i.e. machine learning. On the other side you have data mining, which means you look for certain patterns from history. Many people say that AI is based on facts of the past, but that is not accurate. With AI we can predict an outcome or future roughly 80% of the time. In certain cases, it can be done 100% of the time. It is a very powerful technology and we have harnessed it to create an additional tool called the digital twin.

We put a name to it and it is called a ‘7W’ system, because there are 7 questions we must answer when treating data. The common questions which have been asked in the past are what is happening, where is it happening, who is involved, when is it happening and whose information we have or rather who is delivering the information, which is important. We looked at that and said this was not enough for predictions. This tells us about the past and gives some predictive patterns, but it’s not telling enough. I am a military person, and in the military we’re not happy with that. I suggested that we also need the ‘what if’ scenario. What if this doesn’t happen, and something else will happen and we have to counterattack there. At the end we added why. We want to know why something is happening.

This slide shows three data components on the right – media, internal data and social media. I will focus on internal data. Let’s take the legislative branch and input all the legislation, all the internal data into the system. We can get a clearer picture of trends and see anomalies within a particular system. It is like looking at a heartbeat graph and you see a heart-beat speeding up and you know something is there causing it to race faster. We can actually detect the very slight changes in heart-beat and we can react before it starts racing out of control. However this is still not enough – we need to know why this is happening. To know this, we may need to also look outside of the organization, look at external events. In this case we can input data from the media and social media in order to get a clearer picture of what is impacting on the organization from the outside. We could also, for instance, take data on legislation from the US, Russia, China, Slovenia, and compare and link it, if we were interested in that particular aspect. All that unstructured data, and you can take as many segments as you want, we can call a Rubik’s cube. You can see what’s happening, you understand it and you can predict what can happen. The most important feature here is that you are able to exclude some cubes, include others, alter some cubes and combine different ones as you please. This simulation gives us a foresight and the ability to predict outcomes for 1 year, two years etc. We are predicting consequences of a changed policy. In short I have just described an AI digital twin. This is the power of the new technology that it enables decision-makers to have a better understanding of what is happening within their organization, to have a better understanding of impacts on that organization from the outside and hence be able to make better decisions.

Digitalization in Slovenia

Slovenia put forward a strategy of digitalization and set a goal by 2024 to be among the top 5 countries on the Digital Economy and Society Index measured in the EU every year. Slovenia does not place very highly, but at 13th place we are just above the EU average. Hopefully with AI we can reach top 5 in three years. We won’t be able to do that without AI. Top places currently include Denmark, Finland, Sweden and the Netherlands. With this in mind, we formed 6 working groups – on public administration, new technologies, health, economy,

education, and digital diplomacy. Digital diplomacy includes a plan of opening a diplomatic representative in Silicon Valley. We also want the support of civil society, so we opened the digitalizacija@gov.si address so people can tell us which direction they want to go in. Considering all of that – civil society, working group experts' opinions – we identified 150 important projects for Slovenia to reach the goal by 2024. Then we employed three standards to determine the execution of those goals: urgency (immediacy of implementation), range of users (the reach of the goal), and time of implementation. We didn't want to take on projects with 2-3-year implementation, but rather took on projects of shorter time frame. Some of our focus was on education of young people and the older generation as well. We have Latin language lessons in schools, but not much informatics in elementary, high schools or university compared to abroad. What we also focus on is a country digital twin.

In Slovenia we have one of the oldest institutes for AI. We started in the late 70s among the first in the world. A colleague of mine has been coding since 1983. Slovenia has a vast network of universities, institutes etc. During the Covid-19 pandemic JSI was tasked to do a country digital twin. They tracked trends in the society and economy, such as financial transactions, usage of ambulances, sales of pharmacies etc. All this was tracked (with anonymized data of course) in order to give a 'live picture' of the state of the country. This helped our government tremendously in addressing the challenges which arose during the pandemic. If you want to play with a potential scenario, for instance, simulate the overloading of hospitals and how that will impact on the economy a digital twin will enable you to do that – change particular sets of data and see potential outcome. This also gives a certain level of prediction of events. It is an invaluable tool for a policy-maker.

When I was Deputy Minister of Foreign Affairs, we signed a memorandum of agreement with OECD. The Institute Jozef Stefan is the main brain behind OECD's AI program which is called AI Observatory (AI Technology Watch). The Observatory is tracking all segments of AI development globally - all research, all innovations, start ups, emerging technological companies and job market. They have a record of 300 million people working in the AI industry. They can track innovations that were done 10 years ago, and they can predict new ideas from laboratories, how it will impact the market and which could be more successful. We call this a sectorial digital twin because it is only focused on the global AI sector. It can be done for any other sector as well – oil, energy, legislation etc. etc.

Cybersecurity

We continue to cybersecurity. Imagine the State Museum of History of Uzbekistan. I believe we know what is going on inside every day. We have cameras, we have sensors, guards usually check everything in the morning, in the afternoon and see the paintings are there. They check that everything is safe. When I talk about cybersecurity, I always ask Slovenian IT experts if they can guarantee that, like in the museum, no one can see inside that network. No one

has ever said they can guarantee it. Ask your IT experts if they can guarantee their bosses that nothing that shouldn't be there is in their network. As a reminder – the cybercrime economy is worth \$6 trillion. I can buy a fully working credit card for \$50. It's probably not legal, but I can buy it. The Ministry of Internal Affairs will know much more about the dark web. The criminals are very polite in my experience. They seem like they are trying to help and are ready to negotiate. You know why? Because they want your business. This is their business model and it's a good business. We have to pay attention to it.

In Slovenia we had many debates and never resolved them all. First, we asked whether cyberwar could really happen in Slovenia and around the world. IT experts said no, while national security people said it was already here. People from CERT said the most that can happen is someone robbing an ATM machine on a Friday and not being able to resolve it before Monday. I said if that is the worst, we don't need cybersecurity. We were discussing whether we need attack capabilities or just a defense. IT experts said only defense, because we are not an aggressive country. We further discussed who is responsible for cybersecurity from top down, which is very important if you want to provide security. We were arguing who owns cyberspace – defense, police, agency for cybersecurity, intelligence? If there was a war, you need a sort of cybertzar, someone responsible. The question was who to report to. When we were putting cybersecurity in place, we immediately had big corporations at our doorstep offering their services to us. We didn't want their assistance and wanted to build it ourselves. Otherwise in 5 years we would be dependent on them which we didn't want. We may take more time on our own, but we want to be independent. I checked what other leaders and think-tanks of the world thought about cybersecurity. My colleague from NATO, General Valery Garasimov said in 2013 that cyberspace was space we needed to use in operations. Which is true. The US and China do the same. My colleague General Martin Dempsey said that the Pentagon discussed cybersecurity about 20% of the time, but that in 10 years it will be 80%. A crucial issue is who is responsible for it. I always return to Karl von Klauzevits who said war was just a continuation of policy.

So, where does Slovenia come in? Cybersecurity US expert Richard Clark said the cyberpower of each country is measured in three factors – defense, attack capabilities, dependence. USA has great defense and attack capabilities. Dependence means that the system is old, open and has a lot of users, meaning a lot of places to attack. There are a lot of possibilities for vector attacks in the US. That is not good. On the other hand, there is North Korea with very good defense, limited but very good attack capabilities. Their dependence on internet and cyberspace is very limited, not many users and it's very controlled, and therefore very well protected. They don't have anything to really attack and impact their economy etc. which is great. Slovenia in this regard is in a very bad position. I suggest, when you start working, you use this table for reference and start entering data and seeing where you stand. It's difficult to build a military,

but it's very easy, if a country decides to be a leader in cybersecurity, to quickly become among the top 15 in the world. It's easy to build the attack and defense capabilities.

Our struggle was also what cyberspace is and what to protect. There is a cross section between cyberspace (grid and infrastructure) and social media – where does one begin and the other end. My demand was that we implement informational security in Slovenia, so we needed to include both sides under one umbrella, calling it the informational environment. Some people today have pacemakers which are connected to the internet, making them very easy to kill. Former US Vice President Dick Chaney had WiFi capabilities in his pacemaker disabled for this reason. You must decide what you are protecting. IT experts will say you cannot protect and control social networks and the social dimension of it, but at the end of the day the demand of the country is simply to be protected. The attack surface is growing bigger and bigger. I compare cyberspace to a balloon – the more air in it, the easier to pop it. Today there are, I think, 7,000 billion accounts and a huge surface to attack.

This is how I see the way forward. I urge countries to utilize all available technology and bring together the best experts. In Slovenia we are always open to work through Regional Dialogue. Because you are an overall well-educated country, I implore you to be the regional leader. This should be your goal. You are the crucial player for the peace and successful environment here.

Charles Darwin said that not the most intelligent and strongest animals survive, but the animals who can best adapt and respond to change.

Thank you!