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СУНЪИЙ ИНТЕЛЛЕКТДАН ФОЙДАЛАНИШ БИЛАН БОҒЛИҚ МАСАЛАЛАРНИ ХАЛҚАРО ҲУҚУҚИЙ ТАРТИБГА СОЛИШ

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МЕЖДУНАРОДНО-ПРАВОВОЕ РЕГУЛИРОВАНИЕ ВОПРОСОВ, СВЯЗАННЫХ С ПРИМЕНЕНИЕМ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА

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INTERNATIONAL REGULATION OF ISSUES RELATED TO THE APPLICATION OF ARTIFICIAL INTELLIGENCE

Uzbekistan could get involved a little bit more in international organizations, in standardization of AI. AI has become popular last 10 years. 3-4 years ago international organizations started regulating the area of AI, because there are not just positive sides of AI, but also negative sides. The issue is to prevent the abuse of AI.

There is a set of 9 international organizations which are all active in regulating standardization of AI. Thus, we are involved in this highlighted 5, by we meaning our group. As I see Uzbekistan is present in UNESCO but not in others. So this something Slovenia can help with, at least in terms of connecting you to the right people so that you maybe get status of being observer.

Why is it important? Because it would give you international access to the network and you could actively participate with your own views on AI regulation. Thus, just to list some of these organizations, one is Council of Europe. Council of Europe is an organization is Strasburg. It is not related to EU, it's separate and a little bit HR mostly. And yesterday we started new committee in AI which leads towards to legally binding document treaty. At least countries which will sign this treaty will have to obey. This is very important.

The second one is European commission, our continent EU is preparing the most important document which will be released in one year from now roughly, which is called EU AI Act. And this will be legally binding as well. This will be most

likely the first legally binding document on AI in the world. Now we already have 2 to 3-year discussion what it should be. Once we have legally binding document, basically we need to obey it and it's always on balance between the risks, on the one side the risks of technology and on the other side we have risks not to prevent innovations, products, companies and so on. So AI act is something you should be careful about.

The third organization is FRA. This is connected to European Commission's Fundamental Rights Agency. And next organization is called GPAI, Global Partnership on AI, which is at the moment has 18 countries. It started with France and Canada but 1st founder countries are also Slovenia, the US, Germany and couple of other countries. So this is maybe the place where you could apply and get member. IDB is an American Development Bank maybe not relevant. The next one is OECD. OECD is the most active organization, because OECD is technically a think tank. It's a big think tank with almost 1000 people which does economic analysis from all sides. They establish this AI committee 4 years ago and I was a member from the day one on and so OECD is leading the way in many ways. The UN has also digital cooperation committee which has AI as a part of it but it's a little bit slow. Then UNESCO, you are a member of UNESCO. Last year UNESCO adopted this AI ethics document which is also quite influential. And the last one is the World Bank Group. Just to conclude here, we are happy to have Uzbekistan to get involved at least as observer state with some of these organizations but you need to be a little pre-active either as experts or policy makers. I think at universities you have enough technical experts which could also participate here or on the other side policy makers meaning people from government ministries who could participate there as well. So this is quick overview of the organizations. Now few things what we do. We have a list of important documents which have been coming out of these organizations. Maybe one thing which could be interesting for you, in OECD in 2018 we have already have started to work on defining AI. Everybody talks about AI, but actually in legal terms AI wasn't very clear. This is not an official definition of AI. What we see here is cat. This is just the opposite of what AI is. Usually in AI machines, computers mimicking living beings but here we see the cat which is mimicking the machine. This is just the opposite of AI. The actual definition of AI is these 3 sentences which we were working with 8 months. At the end there was a vote with presences. 44 countries voted for this definition. Later this definition was adopted by G20 and also with European Commission with slight modifications. Every word here has meaning. Maybe important element is human-defined objectives. We are not defining AI but an AI system, which makes it more tangible. This is just the graphical representation of this definition of which has lots of policy implications. On top of this definition we can attach many other legal elements. This definition has lots of positive consequences.

Then there is the OECD AI Policy Observatory. AI is very fast developing area and exchanging every few month plenty of new things which one needs to be aware of it. So the old fashion way of observing something like AI is just too slow. That's why we purpose to the OECD to make something which makes observing

AI in real time, as it happens. So this is how the OECD AI Policy Observatory appeared. These are the addresses <http://oecd.ai/> and <http://oecd.ai/en/trends-and-data>.

This is visualizations which we are showing not to go too much into details. Here we can see bubbles. Each bubble is one country. The more to the right, more scientific production this country has in AI. If you start near to 2000, the lower bubble China is still behind. But last 20 years China really made huge progress, as you see it's moving fast. Otherwise, it's the US, the EU and China, these 3 are the AI superpowers. We have plenty more of these visualizations inside.

AI is a global area. And as we see before it's the US, China and EU. But if we analyze who works with who, where the development actually happens, we see in the world, globally two big bubbles, two big islands. On the left side we see the island which is basically Chinese development, which is fairly separated from the rest of the world. From the right side it's European and the US and on the bottom also Australian collaboration. And there are also a few connections really back to the Chinese development. China is also really developing fast and developing internally as well as you see from this picture.

It is another important view for policy makers. AI at the end it's really battle for the talent and battle for smart people. If you don't have people, you can't do AI, physically this is the message. Now one of the things which we have calculated is who is gaining AI talents and who is losing AI talents. Who is losing smart people and who is getting, employing smart people. This is list of countries, the bottom are the countries which are losing talent like Venezuela, Tunisia and couple others. And the top is Luxemburg, Arab Emirates and some of the EU countries and Singapore, Canada and so on. So this is important to be observed also Uzbekistan. You should be careful not to lose people. You can't recover from it. If you start losing people, then you need some number of years to recover.

The last slide is about who is investing money into AI. At the end this is one summary slide on venture capital. So it's basically the US and China. Already EU isn't investing comparably well. Therefore, mostly the US and China. For China the graph is too low. It's because the service where we get the data we can't cover everything that is happening within China.

One of the messages here is 3 superpowers which has dynamics here. Next superpower which is appearing is India. You can expect by all these hidden indicators which are not hidden anymore for us, India most likely in 5-10 will become one of these big bubbles on the right as well. They have such push inside of science, technology, also seems like many recently that it's inevitable they want to become a big player.

Artificial Intelligence in Digital Governance: the “country digital twin” paradigm. Some new technologies are used in Slovenia and in not many other places. One of these is digital twin of a country.

How do AI technology to digital government bring to itself? In many ways AI is a set of tools which are solving sometimes complex but simple narrow programs like face recognition or things like this. But governments or country

level things are way more complicated than just face recognition. And this area how to use AI to monitor or regulate and observe or how to use AI for proper decision making on the level of the country, this is the message. Thus, the technology is digital twin technology. The main message here is to make digital copy of the country from the data which is already available and let's use this for proper inform decision making. This slide is relevant for whoever looking for answers. Unfortunately, too many decision makers go to the left way, for simple answers. Not necessarily to right side. This is what digital twins will try to do: going to the right side.

Let me tell you on this slide a story which we, Slovenia but not only we but other countries also had when COVID 19 started 2 years ago. The speed of decision making increased, governments had to decide on majors fast on daily basis or weekly basis not in a month. One month was huge amount of time. So the speed of decision making increased but the systems were simply not prepared for this speed up.

Next thing, we had to adopt to new situations. Nobody knew COVID 19. It was a new situation, adaptation became total necessity, but government procedures of all countries were too slow and weren't adopted. Therefore, governments maybe good in solving isolated issues but COVID again brought something which we had to understand consequences of our decision making. So this is another observation. What is interesting is that data which basically we would need to make proper decision making was available and each country today has enough data to understand what's happening in society. It is just the problem that this data isn't integrated properly or not accessible for legal reason or technical reason. I know that data exists, but nobody is using it. The last point is that even more funny that technology is totally available but not used in critical spots.

These are 5 observations. Now what is the answer? How to respond to these 5 observations. Let's make this digital twin technology, to solve these problems the answer will be this digital twin of the country.

One important element when we talk about digital twin is to have proper situational awareness. Think aware of situation today, right now, as it happens, not in a month time or next year or at the end of the year. So this situational awareness cycle. It has several elements: it has perception, comprehension and projection. These are 3 key steps which we need make. Thus, perception meaning: let's get the data, comprehension: let's to standard data and projection would mean let's use this data to form decisions or recommendations for decision making. Perception usually can be today or tomorrow. This isn't a big problem anymore. Maybe it's a legal problem but it's not a technical problem. The problem is a comprehension and projection. So this where AI can help. Let me show you now approximately what we will try to do with digital twin. You can see small metrics. On upper line we can see 7 types of questions. We need to answers to these 7 types of questions: What? (What is happening?), When? (time), Where? (geography), Who? (who is doing it?), Whose? (where is the origin? What

supports the data to get the trust?). The last 2 questions very important for decision making: Why things happen? (Causality, how things are connected) and What if? (simulate possible decisions/outcomes).

What we need to do in vertical side? There is history, present and future. These 7 principals can be done for historical data, for current data and also with AI we can do some forms of predictions as well.

The next slide is another type of the summary. What kind of questions should we ask from digital twin.

1. Understanding a history of last years or last 10 years
 - How were events in the past interconnected? How was the history structured? Learn from the history since it's very important to learn from the history.
2. If something happens we would like to understand the reasons for this. So this is what we call Root-cause analysis. So where is the root-cause of some events which happened.
3. We see how things are happened and we would like also to predict what will be the next. We cannot say 100% always but with high probability we can often say what will be next. So given current situation what's happening right now, can we say what's happening next days, next weeks or next month.
4. As I mentioned before, we can simulate possible future scenarios by what-is questions. So if we take the decision what are likely consequences in the future.
5. Sometimes society or country is just too complicate to us all possible questions. And, the AI system also can suggest what are the questions could be asked. Sometimes we don't know all questions, and system can help detecting what are relevant either anomalies or surprising phenomena such complex system as running the country.

Couple of pictures from January 21, 2020. We were in European Commission; this was the time when there were zero cases of COVID in Europe. There was a meeting of state secondary and so I prepared this speech so Covid was appearing. Covid was mostly in China far away from here. So I prepared it in the afternoon few slides and it took me 15mins to show this situational unawareness in that particular moment.

This are the questions which I was showing before: What? Who? (who means organizations, people are involved) Sentiment? (this is what sentiment of people) Places which are relevant, when things were happening. In upper left corner, in which languages it was reported, which media was covering Covid and what topics were covered. This was an example. In January 21, 2 years ago we already collected articles over 10000. But still you see, the EU didn't basically react and was waiting till it was too late as so many other counties

The next question was where things were happening. It was already seen from our platform. This was Covid related events reported in media already, very complete. Each dot which you see here was a set of either publication information that something is happening mostly it was about China.

The next thing is which things are related to Covid and how they were connected so this is one diagram. I can show this slide but it is a little bit complicated.

And then what is the story like. This was big news back then “Deadly coronavirus outbreak DID start from the animal market in Wuhan”. Everybody were reading this article and it was interesting

As an answer “Country Digital Twin” covered in last 3 slides.

How did we approach country digital twin in Slovenia at start of Covid. Now I’ll be showing slides from end of January 2020. First the discussion in Slovenia happened in March. Although, everything was happening already before. So, we were called from the ministry and the question was: How can you help with AI? And we purposed to use digital twin technology at least to establish situational awareness across many areas which are shown in the next slide. Everything was fine except the legal problems appeared like access to data. Also, fears, this crazy AI will appear and will know more than we were supposed to know which was not true. This fears from different government offices were indefinite. That why the building of project was also a little bit slowed down. But within less than 2 weeks we built working protocol which was monitoring in real time couple of aspects of society: economy, transports, media and well covered. But the problem was with health the data which actually existed in real time. But for legal reasons we had issues to get some of other data.

If we talk roughly about digital twin of a country what kind of data one will need to have. They don’t to have everything but this would be an optimal case. Every country has statistical office, and the data is available, it is not a big problem. Health data, especially if we have health crisis it is necessary from hospital, national health office or equivalent organizations. This something that usually all countries have, we are tracking it. It is just the speed of collecting information is a problem.

Then there is information from pharmacies and general stores, what people started buying. If you monitor pharmacies, you can spot mental health, drugs or substance are being bought or people start buying things which are unusual. This like a signal before official signals can be spotted.

Economic data from transactions either from banks or depends on financial administrations which I’m sure you have. You can see pretty much how economies being shut down or how it’s going back in real time. So we were able to do this in minutes not in hours. In minutes we saw how different parts of economy were reacting to different measures.

It’s strategically very important to monitor supply-chain data. Supply-chains are getting disrupted so you can expect problems. Transport data is one of important one. We can track cars, trains and so on. So this is usually not a problem to get. Energy data just exists you just maybe not interlinked. Media is not a big problem with a proper system. Either social media or main stream media, this is important indicator, especially social media for emotional state of the nation. Despite low quality of this data, social media is pretty much real time indicator of emotional state of the nation.

And informal societal information would also be organizations, NGOs and so on which collect different data source. Connecting all these data sources into one single system you can imagine that it helps with the questions that I stated before. You can actually understand what is happening within the country extremely efficiently. You don't need to do any kind of privacy intrusion or so on. So this is on the level of the country. So you see the trans in the society you are not infringing any individual person.

In the conclusion, the message here was the real-time modelling of data sources which most likely you already have. And using technology like digital twin can help improving decision making in complex systems like governments. AI today is mature enough. This digital twin technology is used for factories, machines and this kind of systems but not for governments. So we were one of the first ones on the level of the country.

Since Covid was a big global crisis which had bad sides. We didn't ask for it, but since it happened, we need to use it. The point is that don't waste good crisis, use crisis also to do something good. So this was the one of message we tried to provide.