GAMES, EXERCISES AND SIMULATIONS

FUTURE TRENDS EXERCISE. FRACTURED DIGITAL FUTURES: AI IN SERVICE OR AGAINST DEMOCRACIES? SOLUTIONS AHEAD

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Introduction

The following exercise scenario is based on the "Futures Frequency" methodology developed by the Finnish think-tank SITRA (Finnish Innovation Fund)[1], which employs it in order to establish possible future scenarios with the help of experts in the field. It was played during the Workshop, *Fractured Digital Futures: AI in Service or Against Democracies? (*September 2, 2021, Bucharest, Romania) within the Security in the Black Sea Region: Shared Challenges, Sustainable Future Program.

It includes three stages:

1. Challenging assumptions about the future
2. Imagining future scenarios

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[1] SITRA, Futures Frequency. Retrieved from https://www.sitra.fi/en/projects/futures-frequency/, Accessed 9.08.2021.

3. Action – establishing the steps we need to take in order for the imagined future to occur.

While this type of exercise can focus on numerous topics, or can discuss more topics in a single session, the particular exercise we will carry out today will focus on the overarching theme of *Fractured Digital Futures: AI in service or against democracies? Solutions ahead.*

Core themes

The exercise will focus on the following core themes:

1. How will the development of AI affect democracy, free speech and elections?

2. Will AI-enhanced education bring about a better cognitive development or will it make it more difficult to grasp abstract ideas?

3. How will medicine look like once AI is part of our life? Will we still become sick and die? Will human security be affected?

4. Will we live on a healthier planet? How will AI help with energy consumption and combating climate change? How will these developments impact state and global security?

5. Will we travel farther faster? How will AI help with the planning and security of transportation?

Stages – the exercise will proceed through the following stages:

Stage 1: The "What if?" stage – 20 minutes – Full Assembly

At this stage, all participants will be assembled in the main hall and will work together as one single, large, group. The moderator will ask participants to imagine a radical change about the mid-term future (ex. 2050) and to write it on a post-it in the form of a "What if?" question. However, given the topic of the overall workshop, participants should focus on possible changes brought about by the development of Artificial Intelligence, rather than about general topics. For example, one could ask himself/herself

- What if the medical profession would cease to exist, being replaced by medical robots? Will this affect decisions about who lives and who dies?

- What if drastic climate change will lead to robots regulating artificial closed environments where the financial, political and scientific elite will continue to form a small global society? Will these communities live in artificially created ecosystems, while the disenfranchised will struggle to survive in a chaotic outcast world?
- What if global decisions get to be taken by statesmen based on the algorithmic calculations and predications of the AI that is too complex for the human mind to grasp? Can humans still ensure self-governance?
- What if some individuals have died due to AI decisions in inevitable car accidents? AI has calculated which route variant implied a lesser number of victims, and that should be enough!

The goal of this initial step is to get everyone to think creatively about the future. This will represent the basis for the next stage, in which participants will be asked to challenge their assumptions about the future.

Stage 2: Challenging assumptions – 40 minutes – Small groups of 5-8 individuals

At this stage, the assembly will break up into small groups of 5-8 people each. Each of these groups will receive a pre-designed "vignette", a small story about a possible future. The five stories elaborated will each address how the evolution of artificial intelligence will impact a particular field of human activity: politics and democracy, education, medicine, transportation, climate and energy, and how each of these will affect the overall fabric and evolution of states and human communities in the future.

The participants will be first asked to read individually this "vignette" and then to discuss the assumption about the future it includes. Then, the participants will have to discuss what other assumptions they have about the topic at hand and to collect them on a whiteboard. In order to have a focused discussion, each group will work on the particular topic on which they received the vignette.

The goal of this exercise is for the group to conduct a deliberative discussion about each participant's assumptions about the future. After each participant has presented his/her assumption, the group can discuss what they think about it: whether it is realistic or not, whether it is based on sufficient knowledge about the current development of Artificial Intelligence. At the end, each person's assumption is expected to have been improved by being subjected to the collegial scrutiny of others.

It is important at this stage to maintain a respectful approach and to criticize exclusively each other's visions.

Stage 3: Timeline – 30 minutes – Small groups of 5-8 individuals

At this stage, given that participants will have a more-or-less clear conception about how their imagined future will look like, they will be asked to position themselves at a moment in the near future (2025) and look into the past to draw a timeline on the whiteboard. On this timeline, they will place the relevant events that occurred in the field of artificial intelligence before 2021 or are likely to occur soon after, given the directions of current technological research.

Moderators will advise participants to use their mobile phones or the laptops provided in order to identify the relevant events, if they do not have already a clear view on which they are. At the end of the stage, ideas will be collected and participants will explain why they believe these ideas represent stepping stones to the future they imagine.

Stage 4: Policy recommendations – 30 minutes – Small Groups of five to eight individuals

At this stage, participants will be asked to think about what policies they would adopt in order to bring about the desired future/ avoid negative futures that they have imagined. They will be asked to think of themselves as a decision-maker / adviser to a decision maker that has the power to adopt a particular policy. The action has to be well justified and to address a concrete aspect which has the potential

to bring about/avoid the future imagined. In order to clarify the idea of relevant policy, the moderator can refer to three possible types:

- influencing people's behaviour or practices;
- influencing structures - legislation/taxes - which are coercively imposed by the state;
- influencing people's thinking – attempting to convince people to think in a particular way.

Each participant has to clearly explain the policy they would adopt and formulate concrete actions they would take.

The facilitator will encourage participants to avoid keeping things at a high level of generality and seek concrete solutions. Participants will be advised to be concrete about both actions and motivations. For example: "I would tax the use of AI-based gambling to a greater extent than regular gambling because the organizers have a higher chance of winning."

It will also be important to tie the recommendation to the future imagined in the first part. For example: "Through this, I will avoid the creation of gambling monopolies in the hands of those who use AI when organizing gambling."

> **NOTE:**
> At the end of the exercise, each group will elect a speaker who will present the group results in front of the whole assembly and the board of panellists. Each presentation will focus on the assumptions identified, timeline of events and policies to be adopted, as decided by the group.

Stage 5: Making assumptions about the future.

The following vignettes aim to illustrate the idea of assumption about the future. It presents a "glimpse from the future" which shows how a situation might develop based on a particular assumption which is not explicitly stated but can be inferred from reading the text. The goal of the exercise is to identify participants' assumptions about future trends and to challenge them through open discussion.

Vignette 1:
A glimpse from the future – politics and democracy

20.11.2050

Welcome to SELECTION DAY

Once again, dear viewers, we invite you to tune in for the next 15 minutes to be part of the wondrous moment that takes place every 5 years. Whether you choose to open your radios, TV or virtual reality device, it will still be irrelevant for who will our leaders over the next five years be.

However, we can still invite you to participate and to watch as ELECTOR 2.1™, the latest version of our leader-election artificial intelligence program will select all the five Members of Parliament and the Supreme Leader. Watching our program will, at least, give you the chance to imagine that 50 years ago you wasted much more time from your life for the task of selecting leaders. Imagine the waste: actually looking at the programs of each candidate and at their personal characteristics and then making a decision! I mean, really, ELECTOR 2.1™ integrates all this information a billionth time faster and can easily make the best decision within seconds. It quickly processes information about all people in our country such as reasonableness and level of patriotism and it chooses a Supreme Leader in seconds. Just think how politics was conducted 50 years ago. What was the point of having a two-chamber assembly? And a dedicated judicial branch? Leader's election process uses up so little time these days and reaches far better decisions! Just see the war we just won! And how quickly those guilty of sedition were dealt with, fractions of seconds after they were trying to assemble a "peaceful" protest against the war!

So, tune in minutes! Or don't! But be aware that ELECTOR 2.1™ will be working and a new leader will be announced 20 minutes from now. See you soon and all hail the new leader!

Vignette 2:
A glimpse from the future of AI regulated climate change mitigation and clean energy production

08.08.2050

Had we not acted in 2025 ...

Today, the International Committee for Climate Change Mitigation has reunited the world's climate change and pandemics mitigation policy makers and scientists in a global format, with the aim of evaluating of the progress made to curb the effects of global warming and related pandemics. One of the most invoked dramatic moments was that of the 2025 pandemic and climate change crisis that led to the signing of the Global Agreement and the setting up of the International Committee for Climate Change Mitigation.

"What if in 2025 we had not acted?", was the question addressed to the audience by the President of the Committee, who reminded participants that if drastic measures had not been taken in 2025, a significant part of the world states would have, by now, faced failure and massive migration, as well as calamities and death of the vulnerable population.

"Today, we can cope with the changes because 2025 stopped the world from a doomsday scenario minutes before the point of no return", she added, emphasizing "the importance of maintaining the rhythm of technological progress in mitigating climate change, as well as the need to step up the implementation of The Global Responsibility Act that allows the implementation of policy and climate security initiatives worldwide."

"The pandemic and climate change crises in the beginning of the 2020's had a major impact on humanity! A global change of mindset, advanced by scientists, shifted the focus of world economies from putting AI and robotics in service of increased industry efficiency to addressing the dramatic impact of climate change. First timid interventions and slow global change pioneered by the EU and the US has set the tone. Let us remember that 2025 was the year of massive worldwide popular protests, with not only the poor and third world

countries affected, but also the entire globe perceiving effects of draught and famine, severe floods and hurricanes. When another pandemic started from the deforested Amazon jungle, the Paris agreement and national policies proved their limitation and new drastic measures became necessary for humanity to survive. It was then that global leaders met, under the pressure of massive civic protests, and launched a global task force which was given responsibilities and power to enforce initiatives to mitigate effects and attempt to curb global warming. The world is still struggling today, in 2050, but survived the worst in the last 1000 years, with unprecedented mobilization and solidarity across continents.

And nothing would have been possible without AI and robotic technology now in service at global level! The sensors fly autonomously across the atmosphere and oceans to detect pollution, swarms of robots work in parallel to cover large areas and collect data about climate changes, robotic assistants are used to build and maintain across the world, regardless of national borders, renewable energy stations – from solar power systems, to wind towers, hydroelectric generating stations and the newly invented **Blue Tdor** technology that uses algae in the oceans to generate clean energy and power the agricultural and living domes that make our lives still possible!

Today, vertical agricultural stations in highly technologized domes enhance efficiency, reduce the use of chemicals and protect harvest from severe weather oscillations; Deepmind AI predicts well in advance wind patterns, which have become strong and rapidly changing. They help optimize wind farms and early warn citizens to start the shelter function in their collective AI managed homes. Recycling has become the norm and reduces the need to produce new resources, which are increasingly scarce. Robotic systems are also used to rescue the victims of the many temporary but also permanent floods that make people leave their homes behind due to the increase in the sea level. Fires have also become a regular challenge we get to be confronted with these days, and robots are used to rescue victims. AI is used to assists with post floods and post fire recovery and restoration of biological impacts, planting trees and regulating the number of invasive species that put at risk the frail ecosystem balance. None of

these circular, zero carbon footprint economy and lifestyle would have been possible for the world nations without the scientists' contribution to AI solutions to address climate change or the dramatic mobilization of world governments and policy makers! They saved the human race in the last hour of the planet. It is now up to us to build a future for the human race away from the point of no return that haunted our last 50 years!

Vignette 3:
A glimpse from the future of AI assisted medical system

27.05.2050

Meet MediChat – your medical personal assistant

Have you ever encountered any difficulties in making an appointment with your doctor or with a medical specialist to get treatment for a specific medical condition/problem? Xvitia comes now with the perfect solution for the struggle to visit a doctor!

Meet MediChat – your daily virtual assistant who brings the doctor into your house. You will be able to report to the Chabot your symptoms and health concerns at any time and the algorithms will diagnose your illness and will automatically schedule you to visit a specialist, either based on your preferences (introduced when creating your profile) or based on your location (the closest hospital to your home). MediChat has access to all the medical institutions, private and public, in your country and abroad, being able to offer you recommendations on the availability of specific interventions at medical institutions from other countries. When making the appointment, you can opt for a physical or online consultation, taking into account the seriousness of your illness and level of symptomatic discomfort, as well as the availability of the identified specialist. MediChat will also function as a reminder, sending you notifications when your appointment is due or when you should schedule your annual consultation.

The AI-app includes a feature of diagnose tracker that helps it to develop new medicine based on the symptoms claimed by all users. The collected data is sent to a system of super-computers that uses the information on biochemical ingredients in order to create and test new, targeted, adapted medicine, before sending the prescription to the MediChat.

The mobile app can be installed free of charge, being available on any operating system (IoS, Android etc.). In addition to the application, Xvitia has also launched the MediChat smart watch that automatically connects to the app and that collects data with regards to your medical condition, helping the app to permanently analyse your medical profile and identify any worrying changes that need further investigations. Imagine your phone will now be able to measure your temperature every morning and put you in contact with any specialist one click away! And when the time comes, it will be able to inform you that there are no more medical options available and that you can now schedule the termination program in the 3 months' timeframe indicated by the robot. Xvitia helps you take informed and timely decisions on your health and lifespan!

Vignette 4:
A glimpse from the future of AI for autonomous or self-driving vehicles

20.11.2050

Meet the next-generation #Robotaxi

Dear father,

I sent you a hologram message from 2050 Phoenix, where 30 years ago we used for the first time a Robotaxi. Do you remember when we were included in the first fully self-driving taxi service developed by Google, Waymo One, legally allowed to operate in Phoenix, Arizona USA, in May 2021?

It was just the beginning… and at that moment we could not imagine the evolution of the transportation market with the complete

expansion of Artificial Intelligence in the development of fully autonomous vehicles. If 30 years ago, the AI technology research was focused on traffic and navigation system, today, the company that I am working for shifted focus to make fully autonomous cars integrating the custom-built and high-performance computer solutions.

The complexity in software also increased exponentially, with an array of redundant and diverse deep neural networks (DNNs) running simultaneously as part of an integrated software stack. Huge sums were invested by both technology companies and traditional car-makers, from Waymo One, Zoox, Voyage in the U.S., to DiDi Chuxing in China, to Yandex in Russia.

Imagine that people in every part of the world are able to order a driverless Robotaxi and use it for weekly shopping, nights out and without challenges as leaving the motorway or roads closed off with traffic cones, difficulties that we encountered with Vimeo One in 2021.

Now we can request a fully autonomous vehicle through the ROBOTAXI GO app. The app includes virtual reality navigation while the vehicle features remote car honking, allowing users to easily locate it. To unlock the vehicle we simply scan a QR code with health information for pandemics prevention purposes. Than we give a simple 'Start the Journey' voice command. The vehicles do not have safety drivers behind the wheel, but they do feature a 50G-enabled remote driving service that allows a Robo-remote operator to control them in the event of an emergency.

Each ride costs only 4 MercurCoins, and the service is open to passengers aged 18 to 100. So you are invited to use frequently the next generation #Robotaxi, a complex supercomputer on wheels. The car is fitted out with high-definition cameras and sensors that collect data and feed it into a machine-learning application. Moreover, the autonomous vehicles are constantly upgradeable to take advantage of the latest advances in AI algorithms, the language of the future, as you predicted when I was a child.

Yes, you are right… Seniors need a safe and affordable Robotaxi service. That is why, with the next generation of #Robotaxi all concerns towards safety and security completely disappear! Only one small thing has delayed the launch on the market – and that is the NGOs that keep

protesting on ethical issues and refuse to understand that all progress comes with risk. So what if some individuals have died due to AI decisions in inevitable car accidents? AI has calculated which route variant implied a lesser number of victims, and that should be enough!

However, the demand and adoption of AI technology in transportation are increasingly growing and we are ready to see drastic changes in the domain every year!

So, dear father are you ready to meet the next-generation of #Robotaxi?

Love, Peter!

Vignette 5:
A glimpse from the future of AI for teaching and education

21.09.2050

International teacher's conference 2050

Today's panel featured a discussion on the best teaching methods to be applied with teenagers and university students. Three participants took place and each had the opportunity to share some of their experiences featuring the education of the relevant age group. Especially, during the age of virtual reality, which can confuse some of the very young minds, it is crucial to develop critical thinking and the ability to distinguish between virtual and real realities.

TEACHER 1.0, created by IntellTech Corporation, showed how it exposes high-school and university students to virtual reality in a controlled environment and how it shows them that in virtual reality certain physical laws can be broken, which would not be possible in the real world. This is exemplified by the fact that in virtual reality, animals, such as pigs, can be programmed to fly, which, attempted in the real world, would be prone to fail.

ACADEMOR, programmed by the Research and Academic Writing Laboratory of the Department of Homeland Security, showed the latest trends in security studies paper writing and how this can be done in virtual reality. However, it highlighted the fact that papers

written in virtual reality might not be accepted in proper conferences, as they rely on empirical results which are not possible in the real world. It exemplified this with a paper describing the results of a battle simulation where one tank was able to destroy more than 50 others without sustaining any damage. Later, it was found that the programmers of the virtual reality had cheated and made that tank invulnerable.

SPORTSMAN 3.5, funded by Grime Corporation, focused on the effects of virtual reality on sports education and illustrated its presentation with real-life injuries of young people who attempted the same basketball schemes in real life as those in virtual reality.

At the end, the three participants concluded that a stronger approach is needed to clearly explain to students that virtual reality can be programmed based on laws of physics different than those of real life, but that addiction to virtual reality can lead to severe physical and psychological damage.

What assumption about the future is illustrated in the text? What other assumptions about the impact of Artificial Intelligence on education do you have? Discuss with your peers.