# INGSA-GESDA Simulation Game

## *QUANTUM WORLD BUILD*

### *Governance of Revolutionary Technology*

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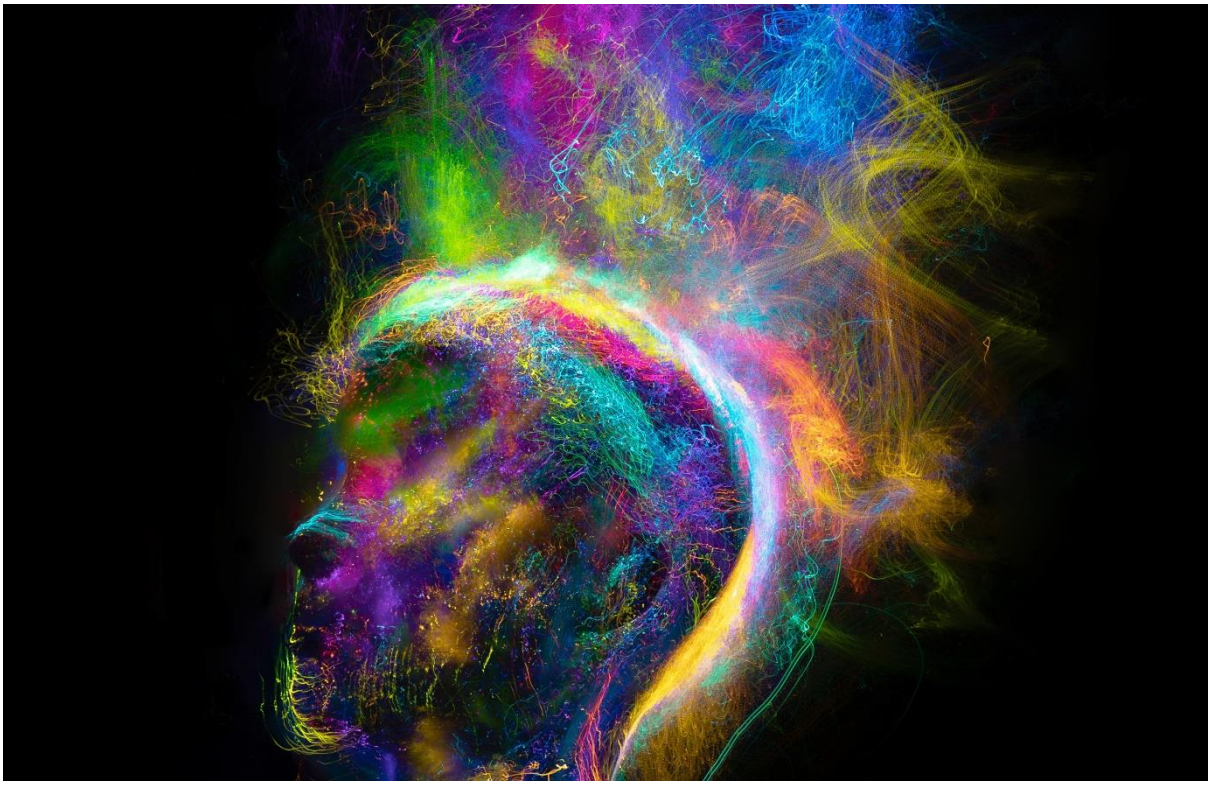
# 2. Workshop Facilitation Guide



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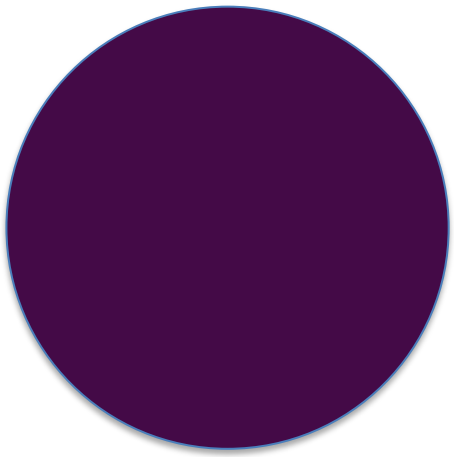

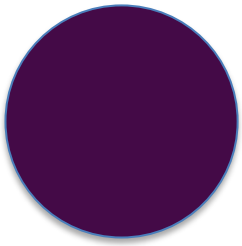

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# *QUANTUM WORLD BUILD*

***Governance of Revolutionary Technology***

## Background: Time-lapse case study

This is a time-lapse case study, broken into three parts. At the opening of the workshop, participants will be presented with the world in 2032 when large-scale quantum computing has been achieved and issues related to the access to the technology are coming to the fore. The case study then rewinds to the present and asks teams of participants to undertake an exercise to explore what decisions could be made to mitigate the negative 2032 situation.

The aim of the exercise is for participants to reflect on ideal futures, and then respond to the fictional scenario from the perspective of their assigned characters, and in doing so, generate dynamic circumstances to which they have to respond.

Participants will work in teams of approximately eight. The case study will provide a fictional scenario, to which teams will respond and overlay their own choices. All teams will then share their 'world-builds' to a new team, and each team will be responsible for evaluating whether the choices made will result in a 'world' that is moving towards a positive outcome to the challenges outlined in the scenario.

## Preparation for workshop

In advance of the workshop, it is recommended to circulate the case study's BACKGROUND section to participants. This could be the day before or on the day, prior to the case, so that participants are able to have a couple of read-throughs of the background information. The World Economic Forum report also provides a suitable primer for the related issues, with pages 4 and 9 particularly relevant context for the workshop.

## Setting up for workshop

- We strongly suggest creating "Character Cards" that include the Character Roles in large format text. These can be folded to stand on a table in front of participants so that everyone can see their role. We recommend teams of 8 but there are more characters that can be randomly assigned to ensure teams have a range of different configurations.
- Provide pens and highlighter pens to each table.
- Divide the group into tables of 8-10
- Have group members blindly pick a role from the stack of "Character Cards"
- Fold Character Cards so that other players can see what your role is.

## Game structure

This case study can be adapted to the length of the workshop. Longer workshops enable more rounds of world-building (i.e. passing one team's record of decisions to another team, who will then need to overlay their own decisions according to the new circumstances). 'Wildcards' can also be developed to add additional complexity to the scenario, should you wish to.

Shorter workshops can allow for just a single round of world-building.

Workshop planners should always allow time for a final round in which team swap their world-builds one final time. In this round, teams are asked to look at the world-build they have received and to assess whether the decisions that had been made were likely to lead to a positive or negative scenario.

**Step 1. Seeing the Future (20 minutes)**

At the opening of the workshop, participants will be presented with **the world in 2032** scenario when large-scale quantum computing has been achieved and issues related to access to the technology are coming to the fore. The first step in the workshop is a group-wide discussion to help envision what a better or more positive scenario might look like. Participants are asked to reflect on the characteristics of a future that has better outcomes given the same types of constraints.

**Step 2. Decisions today (40 minutes) – World Building**

The group then breaks into teams of approximately eight members to rewind to the present. The fictitious context for which these teams are convening in the present day is BNU's international symposium on quantum computing to discuss ideas for how to ensure that the core value of Common Good is upheld in quantum computing and its outputs. Each team comprises of character roles of specific attendees at the symposium. Characters include scientists, businesspeople, NGOs, and government officials from Bria and other Quantum States, as well as national and international industry and civil society groups and representatives of multi-lateral organisations.

Teams will be asked to undertake an exercise exploring what decisions about principles and their application could be made to mitigate or avoid the 2032 scenario they have just seen, and to steer towards the preferred outcomes they have discussed instead. To do this they will complete the TEMPLATE (see 3. Workshop Resources) with their decisions (or not) for each sector.

The aim of the exercise is for participants to respond to the fictional future scenario from the perspective of their assigned characters in the present. They will work through a series of prompt questions and make decisions from their character's perspective. In doing so, they will generate various dynamic circumstances that will shape their world in the next 5-10 years.

**Step 3. World Building Round 2 (40 minutes) - OPTIONAL**

If you only have a short workshop then you can skip Step 3 and move straight to Step 4. In this round, teams pass their completed template to another team (teams are not aware of this swap at the outset). All teams have to assume that **all of the actions outlined in the other team's template have been implemented**. In essence, they receive a world that is a few years advanced from 2022, in which circumstances have been shifted by the decisions made by the original team.

Each team then needs to respond to the world that they are given. Are the original team's choices likely to have made a difference i.e. moved the world towards the positive outcome? Have their actions be contradictory and created friction, is one stakeholder or sector been given too much freedom, thereby distorting the market or impeding progress? With consideration to this new scenario, teams are asked to complete a **new** template with the actions that they would implement, given the new reality they are faced with.

IMPORTANT: Teams are given scope to be creative with the world that they inherit, so long as the team members agree. Some time is given for teams to discuss what they think the outcome of the 1st round of world building will have on the scenario, in order to flesh out the world that they then need to respond to.

**Step 4. Assessment (20 minutes)**

At the end of the previous step, each team's responses will be passed to another team (teams are not aware of this swap at the outset). Each recipient team will be responsible for evaluating the proposed changes, and determining whether those choices are more likely to lead to the negative scenario presented or the more positive scenario developed by the group in the first exercise. If more than one round of world-building has taken place, then Assessment should encompass both rounds and indicate whether the 2nd round changes helped or hindered the choices made in the 1st round.

The teams will give reasons for their assessments, and together the whole group will unpack the:

- Influence of different actors in decisions (national, transnational, multilateral)
- Influence of structural conditions and how path-dependencies were addressed/redirected
- How decisions were made with incomplete information and uncertainties

**Step 4. Conclusion of play and debrief (30 minutes)**

The group will then collectively debrief in a discussion led by the facilitators.

Some prompt questions for debrief include:

- What are the issues now, and how might these issues evolve to result in the crisis?
- What decisions/structures led to the foreseen future?
- What are the risks of acting? What are the risks of doing nothing?
- What are the opposing forces you can see and how might these be balanced?
- What are the limitations in your knowledge and the risks involved?
- What are the gaps (in governance and/or in evidence) that could assist in supporting a decision? Are your decisions likely to have social licence? Could they backfire?
- What structures could have been put in place before the crisis, to make information flows, trust, decision-making and collaboration simpler?

The Workshop Resources includes other prompts for facilitators about the tensions and dynamics between characters that might occur. These can be part of the debrief discussion if needed.

## The role of mentors

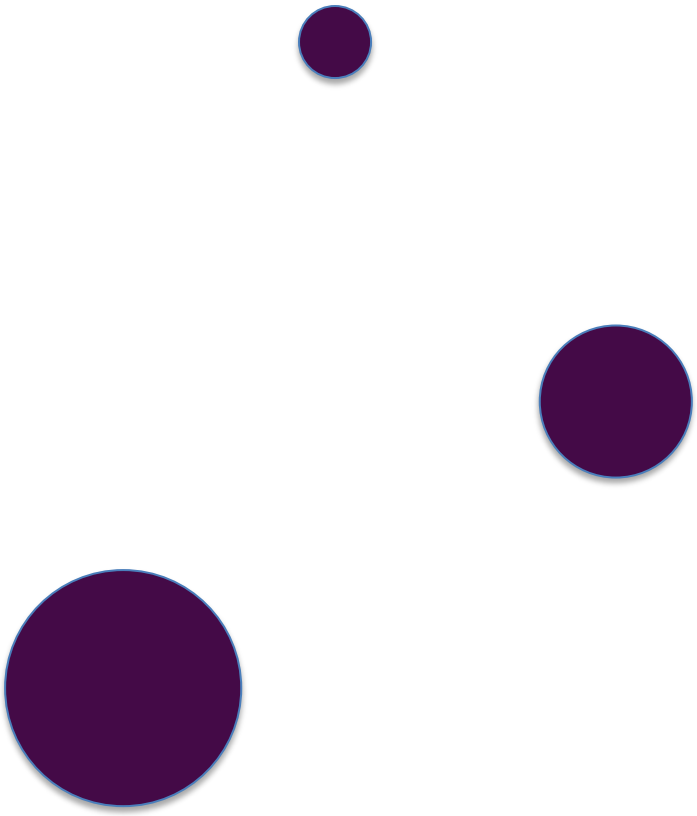
The primary aim of the game is for participants to consider the governance and policy decisions (and the difficulty of implementing these) required to avert a crisis situation.

It is for them to think about what types of information, action, or collaborations they might require, the difficulties of obtaining this, and what challenges their policy decision might result in, and how they might get around these to negotiate an equitable and sustainable future.

It is therefore not the decision that matters but the understanding of the dependence, limitations and requirements of informed governance of new technology.

Where circumstances allow it, 'mentors' should be assigned to each team's table. Mentors should help ensure that teams understand the task and don't get distracted by unnecessary details. Mentors should be ready to help refocus teams on the main questions outlined above, and to make sure that teams are credibly responding to the circumstances of the 'world' with which they are presented.

Mentors should also feel empowered to respond to teams' decisions with questions that help to deepen the discussion and debate.



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This simulation was developed under the auspices of the Geneva Coalition on Anticipatory Science and Diplomacy, initiated in 2021 by the Geneva Science and Diplomacy Anticipator (GESDA) encompassing 14 Swiss and global institutions to empower the current and next generation of leaders with a multilingual mindset in science and diplomacy.

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