

# Citizen Science NOW - resources for engagement



[www.citizensciencenow.org](http://www.citizensciencenow.org)

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# Intention

The intention of this deck is to provide the different university partners a variety of exercises that are focused on the co-creation and participation with citizens as part of the digital training program that equips citizens with capacity to flourish and thrive in CS projects (PR3).

Based on the frames of the partners, the focus has been on exercises that are easy to be used in different contexts. By exploring a range of possible exercises and inspired by tools frequently used in participatory (service) design and foresight, a selection of exercises have been selected that can be easily be adapted to fit into various citizen science project in different contexts (Germany, Spain and The Netherlands).

By offering stand-alone exercises, participant can choose, adjust and reframe the exercises to adapting to their unique context, project and participants.





# Resources & Tools for Citizen Engagement

Based on the input of the consortium partners, the suggested exercises and resources are clustered around four phases that are important in every citizen science project and focus on offering resources, and tools for CS engagement among citizens.

This deck will provide resources for the following moments in a citizen science project:

Step 01: Getting to know each other

Step 02: Defining the project (inc. topic and research question)

Step 03: Collecting data in a collaborative & systematic manner

Step 04: Activating the results for impact

## GETTING TO KNOW EACH OTHER

- 01 Value Mapping
- 02 Share Travel Stories
- 03. Go Retro AI Ice-breakers

## DEFINING THE PROJECT

- 01 Problem Definition
- 02 City Safari
- 03 Research Brief AI

## COLLECTING DATA

- 01 Collective Data Interpretation
- 02 Experience Map
- 03 Outset AI

## ACTIVATING THE RESULTS

- 01 Citizen Assembly
- 02 The Plant of Ideas
- 03 Strategic Advice AI



## Framework

These suggestions for exercises are part of tools that will equip university partners with off-the-shelf activities to be used during their citizen science projects.

We have curated the toolkit based on three levels of usage: easy, difficult and AI-focused. The easy level will be easily adaptable, while the difficulty level might need a certain level of knowledge or tools to put in place.

We have chosen to include AI-based tools due to the emerging use of AI tools within research and education. AI allows for democratising citizens' skills, often being open-source for all to use. These AI tools are beginner friendly, in which the citizen can use them as icebreakers to get to know the team better and better understand the problems.



# 01. Getting To know One- Another. Exercise suggestions





## Why is it important?

Before starting the Citizen Science Project, the participants must get to know each other. To facilitate this process, icebreakers are the most common and valuable ways to get to know each other from the community. This process would allow us to understand the background and diversity within the group. Getting to know the group better enables the team members to feel comfortable with each other, often allowing a more profound conversation where personal experiences are shared. Through this process, the members can have opinions based on trust rather than critique, enhancing the research process.

To get to know each other, we highlight three exercises, namely:

- 01 Value Mapping
- 02 Share Travel Stories
- 03 Go Retro AI Icebreakers

### GETTING TO KNOW EACH OTHER

- 01 Value Mapping**
- 02 Share Travel Stories**
- 03. Go Retro AI Ice-breakers**



## Exercise 1: Value Mapping

### What is it & why should I do it?

Before starting research as a team, one of the essential things is to understand what each value is and how they would like to base their research on their values. Value mapping allows the team members to understand each value and work together without compromising what is necessary for others.

Value mapping allows citizens to understand what areas each places their value in the research. For example, an individual might be more interested in the impact that it has on the environment compared to another on the social side of the research result. By sharing these values, the team members will better understand which aspects of the research they would like to focus on.

### Method of use

1. The citizens will be divided into teams of 2-3 people. Each will write their values based on the level of importance: 1. always important, 2. sometimes important, 3. rarely important and 4. never important.
2. The teams will then share with the other individuals in the group to see what values come up the most commonly between them.
3. The different teams get together to share each group's values and to come up with common 'organizational values' that they agree on. These values that were set together will be the core values to remember during the research process.

Reference:

<https://www.youtube.com/watch?v=Z9eacWxfd1I>



# Exercise 1: Value Mapping

INDIVIDUAL VALUES	Always important	Sometimes important	Rarely important	Never important
ORGANISATION VALUES	Always important	Sometimes important	Rarely important	Never important

## What is it & why should I do it?

What makes you do what you do? **Value Mapping** helps you answer this by enabling you to describe the values which are embodied in your personal work and in the wider organisation. These values are probably more influential than anything else in shaping what you do. They might be something that you take for granted, that you think is obvious, or that you've never actually articulated or written down. Defining these values however can be very useful when trying to explain your work to other colleagues and partners.

Once the values are defined, they can be shared and act as a common reference point that simplifies and speeds up decisions, whilst also ensuring consistency in the work that you do. This is a seemingly simple task, but one which can be hugely valuable when done properly - something this worksheet helps you do. It can be especially useful to bring all team members on the same page during projects by having the team first make their personal value maps and then match these with each other.

### HOW TO USE IT

Start by individually writing down on a piece of paper or a series of cards, what you feel is most valuable for yourself as well as for the organisation. Think of these personal values as the things that make you feel truly alive and passionately committed to what you are doing in your organisation. For one person it might be things like helping others, for another it might be creativity or innovation, for someone else it might be honesty, ecological awareness or leadership. Write down a lot of them - even the ones that you are aware of but are less important to you.

When you have listed down a wide range of values (don't worry about getting it right first time - swap them around until you have

them in the right place. To focus your activities, have a maximum of five in the 'Always important' column.

Ask your other team members to do the same. Once all their worksheets have been defined, these can be shared and agreed upon. Showing your completed worksheet to someone who knows you well and asking for their feedback helps clarify what is important to you. Together you can establish what values are important to the organisation as a whole.

Always important	Sometimes important	Rarely important	Never important
INDIVIDUAL VALUES			
Always important	Sometimes important	Rarely important	Never important
ORGANISATION VALUES			





## Exercise 2: Share Travel Stories

### What is it & why should I do it?

Sharing travel stories allows the participants to communicate each other's visions and imaginations for the project. Through this exercise, the participants can find aspirations by sharing their visions with others.

Sharing travel stories is more intricate than value mapping. In this exercise, the citizens will share their stories of how they see their works working successfully. By imagining the outcome of their activity and the impact that it will have on citizen science, participants will feel empowered to work and to see how each individual might hold different views of what is a successful Citizen Science project.

### Method of use

1. Form a team of 2-3 individuals. Each shares how they see this Citizen Science project to go on and imagine the impact that it will have on the citizen. Try to focus on what your 'success' looks like: is it to have a direct impact on scientific research? To make the locals' life more manageable?
2. Go back into more prominent groups, and each member shares the success stories that they came up with.
3. After going around everyone, choose three forms of success that all citizens align on. These will set the stage for what kind of impact you want your project to have on the Citizen Science Community and the local community you are working with.

Reference:

[https://www.undp.org/sites/g/files/zskgke326/files/2022-10/UNDP-RBAP-INCLUSIVE-IMAGINARIES-TOOLKIT-2022\\_0.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2022-10/UNDP-RBAP-INCLUSIVE-IMAGINARIES-TOOLKIT-2022_0.pdf)



## Exercise 2: Share Travel Stories

### Instructions

Once you are done taking participants through the Guided Travel, break up participants into groups of two for the Share Travel Stories activity. Ask them to remember their visualisations and in turns play the role of an interviewer in the future.

### Facilitator's Script

"Stay with your visualisation. Once you're in the breakout rooms as pairs, assume it's \_\_\_(day) the \_\_\_(date) in \_\_\_ year in the future. You are meeting to be interviewed by the other for a magazine article on the success of your vision. Remember - you're in the future, talking in the present tense.

Those being interviewed, don't think too much and allow yourself to speak what comes to mind. Each participant takes 10-15min to answer their partner's questions, after which they switch roles. As the interviewer, draw the other person out by asking the following questions of their imagination of the future."

### Ask your partner:

- What influenced your vision of success?
- What was the big breakthrough that made your fellow citizens proud of your success?
- What was unique in your approach that others can learn from?



## Exercise 3: Go Retro AI Ice-breakers

### What is it & why should I do it?

Go Retro is an easy-to-use AI-powered icebreaker question generator. The AI tool is inspired by retro questions, allowing us a more casual introduction to know each other.

Since the AI generates the questions, the organiser can save time on creating questions. This tool will also allow more spontaneity within the project, creating space for people to ease before the workshop.

### Method of use

1. Create a team of 2-3 people.
2. Project the link on a projector screen in front of the citizens.
3. Each team member will share their answers with the rest of the group.

Reference:

<https://icebreaker.goretro.ai/>

Digital focused





## Exercise 3: Go Retro AI Ice-breakers

**What would you do if you had infinite storage of one thing?**

## 02. Getting to unpack the problem and the research question. Exercise suggestions





## Why is it important?

Formulating a research question seems like an easy task, but it is more of the most crucial element defining your research. Like in academic writing or business problem solving, the problem formulation in Citizen Science will decide the type of demography, method use and a action plan that will follow the research.

Before settling onto a research question and diving into the research, the team members must align on the issues at hand and which aspect they would like to focus on in this given environment. There, we propose three methods of going forward with the research problem: first, to redefine the problem, observe the issues at hand, and finally, to produce a brief.

01 Problem Definition

02 City Safari

03 Research Brief AI

### DEFINING THE PROJECT

**01 Problem Definition**

**02 City Safari**

**03 Research Brief AI**



## Exercise 1: Problem Definition

### Problem definition

Defining a problem seems like an easy task, but different points of view may emerge when a group of people look at the same problem. Therefore, it is essential for the group to first align on what their interpretation of the question is and how they see they should address it. This process would be crucial as a starting point of the research, as it will divide the study's direction.

Although different views might appear, it is essential not to compromise the feelings of individuals. Try to hear and understand why the others in the group interpret the problem in that specific way and come to the point of a future in which everyone feels confident and comfortable with the direction of the research.

### Method of Use

1. Break up into teams of 2-3 people.
2. Each team member shares how they understand the question: who are the people concerned? What is the most urgent manner in the problem? What kind of impact would they like to have to solve this problem?
3. Come back into more prominent groups, and share each team's ideas. If necessary, reformulate the question to better align with how the team members understand the problem.

### **Reference:**

<https://www.youtube.com/watch?v=o4dddmOpQ5s&pp=ygUjZGl5IHRvb2wgcHJvYmxlbSBkZWZpbml0aW9u>



## Exercise 1: Problem Definition

### PROBLEM DEFINITION

## What is it & why should I do it?

**Defining a problem** is a deceptively simple task - what at first seems to be the problem is often merely a symptom of a deeper problem. This tool works to both open a problem up - presenting it in a way that can be examined from a number of angles - as well as helping to define the wider context and associated issues involved.

This is particularly effective when trying to focus a team of people on the key problems at hand. This tool has been designed to structure the analysis of a particular problem in a way that makes good use of your time. It introduces a small set of key criteria by which an issue can be articulated and assessed, which makes the activity highly efficient. It also gives you a standardised way to compare several different problems which might seem to be very different on the surface.

### ? HOW TO USE IT

Go through the Problem Definition worksheet individually or in small teams and reflect on a specific issue you have identified, exchanging thoughts while writing down your notes. The key aim here is to capture, compare and discuss different viewpoints on the problem. You can then review the notes and discuss with your team members whether you are making the same assumptions, and whether you are framing things in the same way.

This exercise may lead you to "reframe" the problem you initially addressed - for example, what happens if you see older people as having capacities, rather than needs? Reframing problems in such a way can offer clues to how the solution can take shape.

Working on a Problem Definition worksheet with not only your

team members, but together with other stakeholders, will usually bring up new contexts. For instance, working with service users, staff or volunteers may provide a slightly different angle to the tool than when working with managers or entrepreneurs. Feel free to experiment and rephrase questions in the worksheet to keep them relevant in such situations.

What is the key issue you are trying to address and why is it important?

Who is it a problem for?

What social/cultural factors shape this problem?

What evidence do you have that this is worth the investment?

Can you think of this problem in a different way? Can you reframe it?





## Exercise 2: City Safari

### What is it & why should I do it?

Symptoms Mapping Tool is a toolkit in which the participants share the symptoms they experience in different areas based on the regions they observe.

This toolkit is modifiable for projects that are different from geographic problems. To do so, the group will come up with the pain point of their research and the issues occurring within it. For example, concerning the lack of food production in an area, they will be able to see how the social class of the people are impacting the different outcomes.

### Method of use

1. Post a big white canvas made of paper on each wall of the rooms, based on the number of teams. Here, use Post-Its to see the emerging problems from the research. Are there more health problems? Change in the biology of the animals? Change in temperature of an area?
2. Place the stickers on the map. You can come up with a discussion of personal experiences that the citizens have experienced or through looking at existing research with data on the existing symptoms and problems.
3. Share what each group came up with with the other teams. What is the common problem they face? What are the differences? Try to think why these resemblances and differences are observable.
4. Analyse the results and put 2-3 posts on the conclusions you came up with as a group.

### Reference:

<https://citizensciencetoolkit.eu/stories/map-health-problems-through-the-symptoms-mapping-tool/>



# Exercise 3: Research Brief AI

### What is it & why should I do it?

Research Brief AI is an AI platform that allows the user to analyse the research question in-depth using AI tools. The user inputs the client, the query and the reason for the research, which the AI generates a brief. This process will facilitate the team to be on the same page about the research question and save time.

This AI tool can be tweaked to be used for Citizen Science projects as well. Instead of inputting the client, the citizens can think about the demography impacted by the research problem: are they elderly? Babies? Specific plant? Animal?

### Method of use

1. Divide the teams into groups of 2-3 people.
2. In each group, an individual will use their computers to open the link.
3. Input the demography you are concerned about in the company or client; the top question will be the research question; and finally, the reason for research concerning why you are searching for answers, such as health reasons or looking at anomalies in emerging scientific data set.
4. The AI platform will automatically generate a brief to share within the group.

### Reference:

<https://ai.boardofinnovation.com/research-brief>



# Exercise 3: Research Brief AI

## **Research Brief**

Enter the top question you want to be answered, the reason why this is important and a short company description to get your custom research brief. Use it to plan your next research project.

### Company or Client

Describe the type of company acting on the output of the research. Add "company" at the end.

e.g. Animal nutrition company

### Top Question

Do dairy farmers see plant-based milk alternatives impact their business?

Do dairy farmers see plant-based milk alternatives impact their business?

### Reason for research

Why is it important to answer this "Top question"? Why are you running this research? (Short answer is ok)

If nobody buys dairy products we can't sell animal feed to dairy

**Generate my brief**

# 3. Getting to understand the data Exercise suggestions





## Why is it important?

Data interpretation is critical in research to understand what we have discovered from the workshops. The step is needed to make sense of the data at hand and see for what purpose we should be taking action.

Data is often thought of as something objective. Yet, difference researcher, situation, time and place decides the outcome of these data. Therefore, just like the data is subjective, it is essential for the citizen researchers to take a moment to make sense of the data.

To do so, we propose three methods

01 Collective Data Interpretation

02 Experience Map

03 Outset AI

### COLLECTING DATA

**01 Collective Data  
Interpretation**

**02 Experience Map**

**03 Outset AI**



# Exercise 1: Collective Data Interpretation

## What is it & why should I do it?

Collective Data Interpretation is a collaborative way of understanding and extracting from the data gathered during research. This data interpretation has in its philosophy the knowledge that qualitative and quantitative data is not neutral but instead creates an opportunity to get richer data. Instead of mindlessly accepting the gathered data, Collective Data Interpretation creates a space for researchers to discuss what we can infer from the data and the contradictions that it demonstrates. The knowledge is, therefore, co-produced among the participants, leading to a more collective action after that.

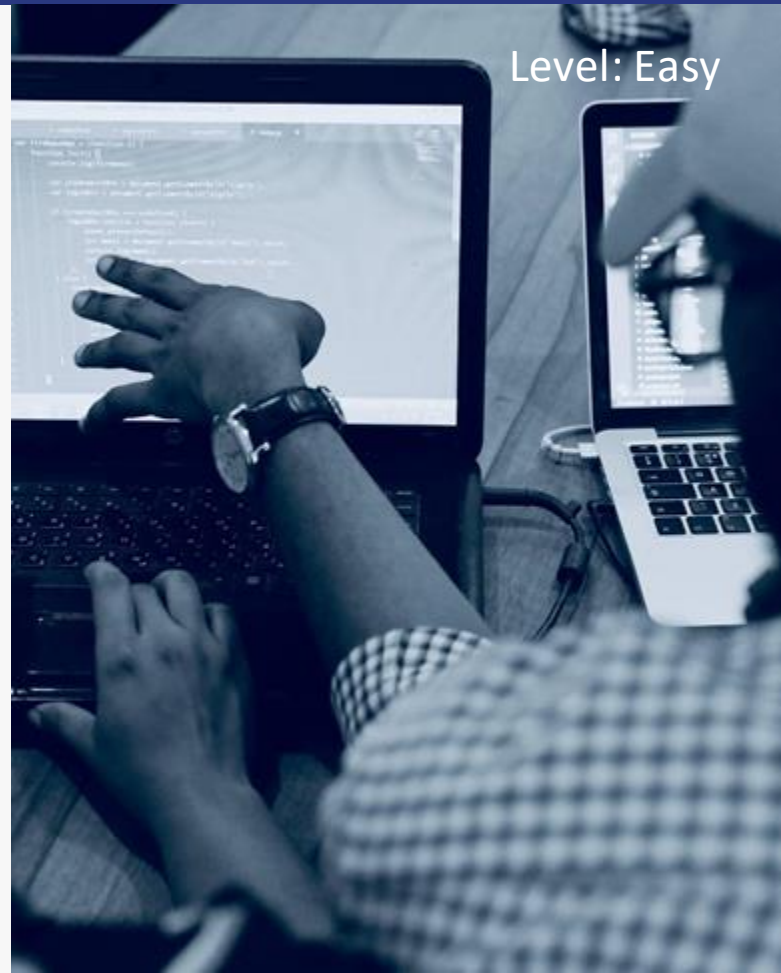
## Method of use

1. Divide the individuals into teams of 2-3 people. Each group chooses a data set to share with the rest.
2. Each team will have 5 min to present the data they collected throughout the project. The whole group will have 10 minutes to discuss the results: is it aligned with their hypothesis and expectation at the beginning? Is there something new they have learned? What seems to surprise them about these gathered data?
3. Use post-its to put on the wall based on each of the findings to remember them for the next step of formulating an action plan.

## Reference:

<https://coactproject.eu/toolkit/method/collective-data-interpretation-how-to-explore-citizen-generated-data-with-co-researchers-or-other-groups/>

Level: Easy





## Exercise 2: Experience Map

### What is it & why should I do it?

The experience map is used to understand better how your work will impact the stakeholders. This map can also be used as a way for the group to reflect on the data they have collected or the experience they had interacting with the data and make sense of what they have encountered. Each member can use this map to fill out their observations and learning outcomes they can learn from the data they have gathered. It can then be compared with the other team members to see what data they have focused on the most and what learning they have understood.

### Method of use

1. Divide the group into teams of 2-3 people.
2. Each group spends 10-15 minutes writing down their Awareness, Key Usage and Outcome observations on the exercise sheet.
3. After the time is up, come back in big groups to share what each team shared.
4. Think together about the learnings they can extract from each observation. In each of these three steps lies the understanding of what action is needed.

Reference:

<https://media.nesta.org.uk/documents/diy-toolkit-full-download-a4-size.pdf>



## Exercise 2: Experience Map

OBSERVATIONS	<b>Awareness</b> <i>How did this person hear about you? (E.G. PR, social media, word of mouth) What relevant previous experience did he or she have?</i>	<b>Key usage</b> <i>What points of contact happened between you and this person? What were the critical moments, such as especially good or bad experiences?</i>	<b>Outcome</b> <i>What was the feedback from this person? (eg. via social media or word of mouth) Was there any follow up from your side?</i>
	LEARNINGS		





# Exercise 3: Outset AI

### What is it & why should I do it?

Gathering data through interviews and surveys requires time and money. Outset AI allows those interviews to be done through the use of AI. The AI using ChatGPT would generate questions for you regarding the desired demography (such as gender, age, and nationality) to ask instead of you being there in person.

The use of Outset allows for research to be conducted even in remote areas to which the researchers might not have access. As Citizen Science research is understood through the interaction with the citizens and understanding their needs, the use of Outset allows for a broader understanding of how the population is facing challenges regarding Citizen Science.

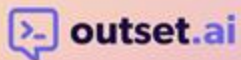
This AI tool can be used in addition to the quantitative or qualitative research you will conduct. It allows researchers to see if they have missed some critical points or different points of view that can emerge.

### Method of use

1. Break up into groups of 3-4 people. In each group, one person uses their computer to open the website.
2. Enter the desired demographic information as well as the research question.
3. AI would automatically connect you to some interviewees, in which it would ask interview questions based on your research topic.
4. Come back to the bigger team and share what your thoughts were. Also, compare these answers to the real-life interviews you have conducted to see any similarities or differences.

Reference:

<https://outset.ai/>



# Insights on Autopilot

AI-led interviews powered by GPT4



...save you time by only needing  
to be cleaned once a month!"  
How does that make you feel?  
What's the first thing you think of?

**Kelly**

Wow, I love that! I've been  
looking for a product that can do  
that for me.



**Outset Interviewer**

That's great to hear! Tell me more  
about why that is. What  
specifically makes it resonate?]



# 4. Getting it into action. Exercise suggestions





## Why is it important?

The next step after data interpretation is to put the findings into action. This process differs based on different the intention of the project. The most crucial factor to keep in mind is to be aligned with the participants on the purpose of this action and why the research was first conducted.

This stage is crucial to achieving your goal to effect change in your local environment or wherever it is needed. Any action you initiate can bring about policy change or help solve the problem that concerns your community.

The community should decide the next steps based on insights they gleaned from interpreting the data. There may be a co-designing or supporting role for intermediary organisations (assisting with producing materials). However, any action should be fully community-led, leading to actions that have a tangible impact on the community.

For this purpose, we came up with the following toolkits.

- 01 Citizen Assembly
- 02 The Plant of Ideas
- 03 Strategic Advice AI

### ACTIVATING THE RESULTS

- 01 Citizen Assembly**
- 02 The Plant of Ideas**
- 03 Strategic Advice AI**



Level: Easy

## Exercise 1: Citizen Assembly

### What is it & why should I do it?

Citizen Assembly is creating a community based on the conducted Citizen Science Project, including the participants and the researchers. This assembly is similar to a form of parliament, in which a proposal is developed by its representatives to be debated, which then is democratically voted to be passed on to be implemented in broader actions. These assemblies will work closely with the government to work in parallel with the governmental agenda to push them further into contributing to Citizen Science research and communities.

### Method of use

1. The group will be divided into 3-4 teams.
2. Each team will develop an action plan based on the learnings they have gathered throughout the research. They will write down the four key points on paper: the concerned demography, the action they will be taking, and when and where.
3. The group will gather together, in which each team will present their action plan. After all, the teams have finished, the whole team will vote on which action plan is most effective and vote. It is essential to note that each individual will only have one vote.
4. The elected action plan will then work closely with the affected demography to implement the action plan.

Reference:

[https://coactproject.eu/resources/policybriefs\\_whitepapers/brief-on-policy-recommendations-to-promote-and-strengthen-mental-health-social-support-networks/](https://coactproject.eu/resources/policybriefs_whitepapers/brief-on-policy-recommendations-to-promote-and-strengthen-mental-health-social-support-networks/)





Level: Difficult

## Exercise 2: The Plant of Ideas

### What is it & why should I do it?

The Plant of Ideas is a way in which citizen researchers can include the population in creating change and putting actions into place based on the research question. In this case, the organiser (the citizen researchers) will put a tree-shaped cutting board in the street. They will ask people walking by to put post-its based on how they see we can solve the problem discussed in the research question. The Plant of Ideas created a democratised way to involve people, where a population that is usually outside of the Citizen Science communities can share their thoughts and ideas they have to improve the environment they are living in.

### Method of use

1. The citizen scientists prepare a human-sized cardboard cut in a tree shape. They also share Post-Its and pens for the people to use.
2. The group goes into the streets, preferably where there is much traffic. They deposit the tree in the middle of the road and ask the passersby to answer the question on a Post-it.
3. The tree can then be brought back to the class to read through, helping to generate out-of-the-box ideas that will further inspire the project and the actions to be taken.

Reference:

<https://citizensciencetoolkit.eu/stories/the-plant-of-ideas/>





## Exercise 3: Strategic Advice AI

### What is it & why should I do it?

Strategic Advice AI can be used in the final phase of the research. Based on the research results gathered, the team can use this AI tool to generate strategic advice that they can use for what action they could take next. This AI tool is a unique way to use AI and human resources to think critically about strategies given by AI tools. By going through the strategic advice as a team, the citizens can point out the flaws or holes in the AI's answer and think democratically about how they can improve these strategies.

### Method of use

1. The group will be divided into five teams, according to the number of strategists on the AI tool.
2. Each team will insert the same research question to which they are looking for an answer.
3. The teams will come back together with the results shown by the tool and share their ideas on what they agree or disagree with regarding the strategies that have been produced.

Reference:

<https://ai.boardofinnovation.com/strategic-advice-ai>



## Exercise 3: Strategic Advice AI

### Strategic Advice

Personalized strategy, without the expensive fees

#### Strategist

Who would you like to get advice from?

Give me advice

#### Business Challenge

What business challenge are you trying to solve?





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