



# IMAGINATIVE SCENARIO PLANNING

## FOR SECURITY AND LAW ENFORCEMENT

*A toolkit for practising with uncertain security futures*

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This toolkit was produced out of the Imaginative Scenario Planning For Law Enforcement Organisations project funded by CREST. You can find more about the project here:  
<https://crestresearch.ac.uk/projects/imaginative-scenario-planning/>

The toolkit has been designed to help organisations prepare for hitherto unknown security threats and their unknown effects; and to do so in a way that (1) imagines a variety of possible futures, (2) undertakes a holistic analysis of those futures, and (3) strategically plans for the long term.

## About CREST

The Centre for Research and Evidence on Security Threats (CREST) is a national hub for understanding, countering and mitigating security threats. It is an independent centre, commissioned by the Economic and Social Research Council (ESRC) and funded in part by the UK security and intelligence agencies (ESRC Award: ES/N009614/1).

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# THE TOOLKIT

## INTRODUCTION

This toolkit is a step-by-step guide to assist security and law enforcement officers in becoming familiar with scenario planning techniques.

The toolkit and an underlying report have been produced from the 'Imaginative Scenario Planning for Law Enforcement Organisations' project, funded by CREST.

The research from this project indicates that multiple future scenario planning is not widely practiced in law enforcement organisations. Instead, operational and tactical planning dominates policy and management. Those organisations that are able to devote resources to focusing on future trends tend to develop strategies based on past trends.

The scenario planning approach offers an accessible alternative to the more established prediction thinking to enhance the capacity of organisations to detect, anticipate and mitigate future security threats.

By following the steps in this toolkit officers will be able to:

1. Imagine a variety of possible unknown future security threat scenarios;
2. Undertake a holistic analysis of those possible scenarios;

3. Strategically plan for the inconceivable.

This toolkit has been designed as a practical guide for managers and officers who are otherwise unfamiliar with scenario planning techniques. It can also be used by subject matter experts or training professionals within a workshop setting. For those officers who require a more in-depth understanding of the research and subject, the report compliments the full research report which can be accessed here: <https://crestresearch.ac.uk/resources/imaginative-scenario-planning-report/>.

The project was developed and executed within academia and validated by practitioners from the Landelijke Politie (National Police) in the Netherlands and the National Crime Agency in the UK. Throughout this toolkit, examples from work with these organisations have been highlighted in purple text boxes, to help users visualise some of the processes.

# THE PROBLEM WITH PREDICTION

There are inherent problems that arise from using prediction as a strategy for determining how to mitigate future threats.

Whilst success may be found predicting trends on a short-term basis, mid and long-term events are contingent on many interacting factors and prediction therefore becomes unreliable.

## ALTERNATIVE: SCENARIO PLANNING

Scenario planning offers an alternative solution to this issue. The usefulness of the technique is not dependent on the likelihood of the scenarios coming true, but the opportunity for security and law enforcement organisations to set flexible strategies to deal with them. It is the development of a flexible response that marks the success of this technique.

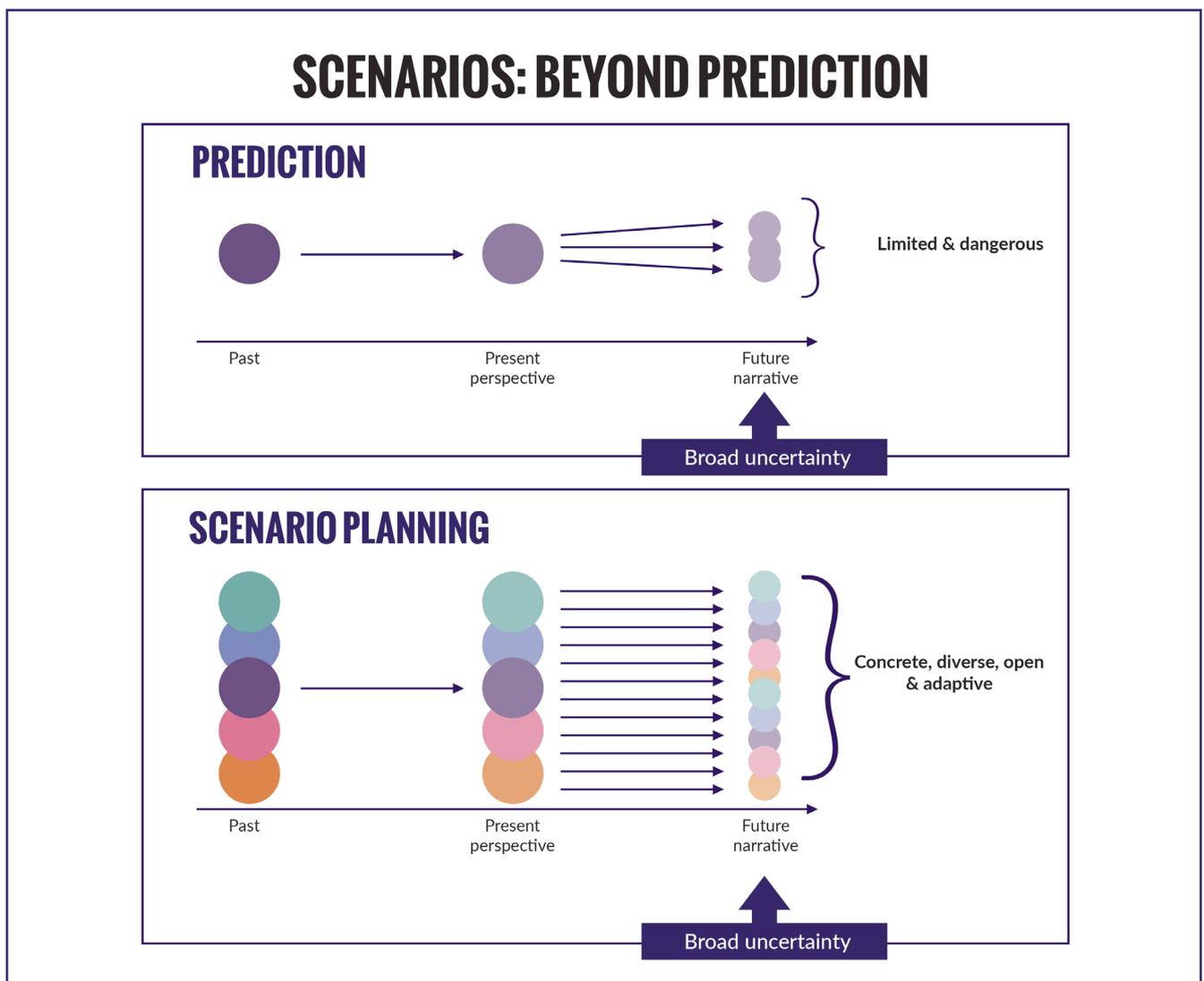


Figure 1: Scenarios help move away from thinking about a single most likely future – toward multiple futures based in multiple presents and pasts. Adapted from Vervoort et al. (2015).

# ENGAGING WITH AN UNCERTAIN FUTURE

## *Six basic key recommendations*

Societies are by definition complex and dynamic, and need to cope with existing and future uncertainties. Security and law enforcement agencies need to anticipate certain future developments as part of their task to prevent and mitigate future security threats. Not only are future threats and risks uncertain; the future consequences of taking preventive and anticipatory action today are also unknown.

*So how can security and law enforcement agencies work with the future?*

# DO

### *think multiple futures*

A great way to get out of our biased present based mindset is to think of many different, surprising, challenging future scenarios. Even if some of these scenarios simply project our ideas about the present into the future, by creating many alternatives, the set as a whole is more likely to surface new insights.

# DO

### *link futures back to present-day adaptive capacity*

Planning for every future contingency is impossible. The challenge lies in building a law enforcement organisation that has the 'adaptive capacity' to deal with the future, however uncertain. 'Adaptive capacity' is the ability of an organisation to adapt to constantly changing conditions.<sup>6,7</sup>

The lessons learned through practising with the future should connect back to present-day activities in a manner that actually allows the organisation to become better at adapting to uncertainty in a concrete sense - leading to new skills, capacities, ideas and strategies. The approaches outlined in this toolkit should be used to critically investigate what goes on in law enforcement organisations, as well as investigating plans for the future.

# DON'T

## *rely on the biased present*

The present blinds us to the possibilities of the future, and we are often unaware of how the present limits our thinking. Current trends are the ingredients of a biased present. Relying on the likelihood that any one emerging trend will become a future reality is dangerous.

# DO

## *practice with futures: experiment, simulate, take perspectives*

Security and law enforcement organisations should practice with different futures to investigate and improve their abilities to adapt. This means experimenting with different scenarios: How would the security and law enforcement organisations respond? How would the antagonist behave? What would members of the public do? And so on.

# DON'T

## *try to predict the future*

The default mode of any organisation faced with planning for the future is to look for prediction. For shorter-term futures and for tactical-level planning, prediction may be adequate - not perfect, but practically useful.

However, when law enforcement agencies consider changes beyond the next few years, and what these changes mean for them, it is important that there is a widespread realisation that we are dealing with 'deep' or irredeemable uncertainty.<sup>1,2</sup> We cannot resolve it completely.

# DO

## *use creativity and imagination*

Even when we are engaging with multiple futures in order to move away from the present, we can become stuck due to our thought on how plausible the options may be. This can limit our thinking.

We need to let go of the idea that we are trying to think about the most likely scenario, and just come up with as many ideas as possible. Those scenarios that are difficult to imagine actually help us to understand the strengths, weaknesses and risks in an entirely new way.<sup>3,4,5</sup>

# WORKING WITH UNCERTAIN FUTURES

## *A step-by-step guide*

Following these five steps will enable you to imagine the future, develop scenarios and build strategies to meet them

**A**



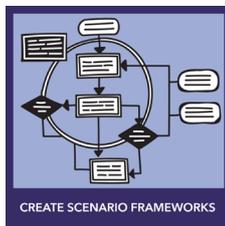
**Ask questions**

**B**



**Build lists of driving factors**

**C**



**Create multiple scenarios**

**D**



**Develop scenario narratives**

**E**



**Experiment with strategies**

# A | ASK QUESTIONS

Before you start, ask yourself:

## 1. WHAT ARE WE TRYING TO ACHIEVE?

Your goal may be to enable your organisation to take specific decisions on resourcing and prioritisation, or to facilitate a new approach, or to develop new skills.

Whatever the purpose, this should be articulated and decisions should be made on how to measure whether the objectives have been met.

## 2. WHO ARE THE END USERS?

Different groups of users will have different methodological preferences, different amounts of time they can allocate to the process and different time-horizons as their focus.

Developing futures with the end user has proven to be the most successful approach as the futures created are then owned and understood by all involved. Users are more likely to take scenarios, collages and other imagined futures seriously if they are involved in generating them.



## 3. WHAT ARE THE CAPABILITIES OF THOSE INVOLVED?

Who is involved in this process and what are their experiences? What methods are they familiar with? Are there others they should learn? Are they able to effectively integrate the foresight process into relevant decision-making processes?

## 4. DEFINE THE SCOPE

What time horizon is considered? What problems, systems or societies are in scope?



# Worksheet

Using the information and example on the previous page fill in the worksheet:

## 1. WHAT ARE WE TRYING TO ACHIEVE?

## 2. WHO ARE THE END USERS?

## 3. WHAT ARE THE CAPABILITIES OF THOSE INVOLVED?

## 4. DEFINE THE SCOPE

# B | BUILD LISTS OF DRIVING FACTORS

A key challenge at the beginning of the process is determining what is relevant to investigate. What are the developments, processes, movements and major changes that will impact the system you are interested in? In order to help people to overcome their 'present thinking' bias, we recommend the following:

## 1. BE CREATIVE!

Use an approach that stimulates creative thinking. In this toolkit, we describe one such approach: creative collaging, but other approaches could also be used.

## 2. MORE IS MORE!

The more issues and driving factors that your team can come up with, the better. It is important to be exhaustive. Creating a long list of driving factors is often valuable, because people will come up with the most obvious driving factors first. In this phase, having too many driving factors is not a problem – selection happens in the next step.



## 3. ENSURE DIVERSITY!

Explore driving factors from multiple perspectives (e.g., cultural, social, technological, financial etc.) Don't worry if they may seem rather far removed from the system being focused on, such as factors changing economic conditions or global geopolitical forces that may impact at a local or national level.

### DEFINITION

#### *Driving Factor*

*A driving factor is a development, process, movement or major change that will impact the system you are interested in.*

# CREATIVE COLLAGING

Collage: is the process of using fragments of found images or materials and gluing them to a flat surface to portray phenomena.<sup>8</sup> This is a great approach for lateral and creative thinking about key issues and drivers.

## HOW TO 'DO' IT:

1. Flick through magazines (with lots of pictures) and cut out pictures and slogans that relate to your imagined 'future' or even better let the images from the magazines inspire you: what images spark ideas about a far-away future?
2. Assemble the selected images into one collective picture (the collage) by gluing the selected images to a larger paper in any way you want.
3. The creators should then explain the collage to the other participants. The open expression of ideas through a pictorial representation allows a whole range of attitudes, beliefs and feelings to emerge and to be explored, thus generating greater understanding of others' perceptions of the same situation.

The following themes could be discussed:

- what stands out in the collages;
- what each of the images represents;
- what the stories are behind each image;
- why they were selected;
- how they relate to each other.

This should all be recorded in order to capture all the details.

## WHY USE CREATIVE COLLAGE MAKING?

*(from Butler-Kisber & Poldma, 2010)<sup>9</sup>*

- You will gain direct involvement from the participants on the issues they find relevant.
- The process is intuitive; arranging image fragments can reveal unconscious connections.
- Collaging offers ways to make tacit knowledge and ideas explicit.
- It provides "the ability to freely associate disparate events or themes".
- Collaging can develop a more nuanced understanding of an event or theme.

## SHOULD COLLAGE MAKING BE DONE IN A GROUP OR AS AN INDIVIDUAL?

**Group:** allows discussion on selecting images, group members can query each other; some groups discuss what to look for first, others prefer to each select images and then discuss these for final selection. One disadvantage: the process can be taken over by a dominant group member.

**Individual:** provides all the space to follow one's own ideas and thoughts, but lacks the interactive engagement with others and opportunity to be challenged.

# EXAMPLE

In our example collaging had two parts:

- (i) What does the world look like in 2040?;
- (ii) What are the main threats and drivers in that world?

**As a result of the creative collaging, several less predictable future threats emerged:**

- Growing joblessness among middle class.
- Separation of body and mind – online identities separate the physical and cognitive.
- Water and electricity wars.
- Tech-savvy specialised crime becomes mainstream.
- Increase of vigilantism (supported by governments, end of policing).
- Notwithstanding the advance in technology, traditional crime will stay (gun/knife).
- It will be easier to lead double lives and thus for criminality to go by unnoticed.
- Space tourism, hacking of rockets, space mining (debris attacks planet earth).
- Manipulation of science to create criminals.
- Manipulation of food to create chaos and deadly viruses.
- Dark side of algorithms and self-thinking machines: spying for insurance and space satellites that will disrupt infrastructure or let them crash.
- It is getting easier to influence people, and for people to be influenced.



Figure 2: Collage making in The Hague (project photo 2017)

# C | CREATE MULTIPLE SCENARIOS

Having a large number of driving factors is important when developing scenarios, but the selection of key factors is needed for the initial structuring of diverse scenario sets. To determine these driving factors, first, a choice has to be made on how the scenarios will be structured. A number of methods exist:

## 1. DECIDE HOW TO STRUCTURE THE SCENARIOS

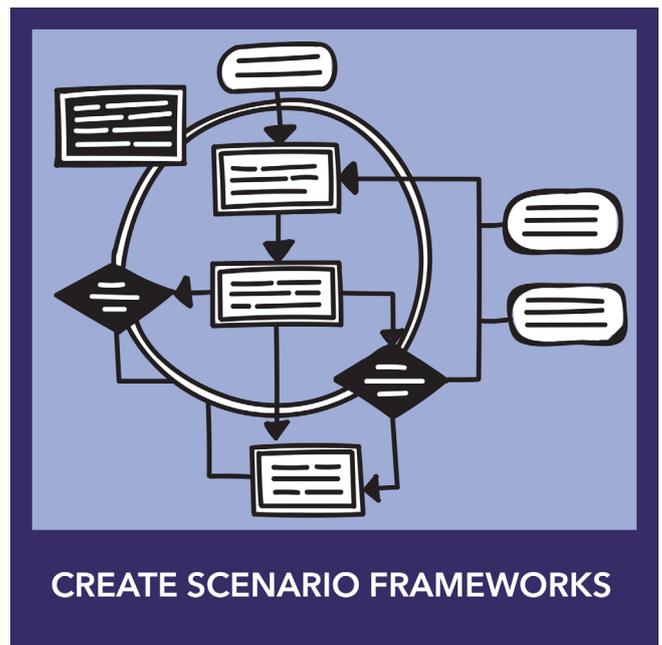
A classic and often-used approach to scenario development is the 'two axis method'. This is the creation of a set of four scenarios by taking two drivers of change, developing two alternative future states for each of these drivers, and combining the two drivers and their alternative states into a set of four alternative scenario worlds – see figure 3.<sup>11</sup> This approach is accessible and has proven its worth. However, it has the limitation that the set of futures is dominated by just two drivers of change. We recommend this method, although others are available.

## 2. IDENTIFY KEY DRIVING FACTORS

Identify those factors that:

- (i) May have a high impact on the system in question;
- (ii) Are expected to be highly uncertain (i.e., unpredictably develop in significantly different directions);
- (iii) Are the least commonly thought about in present day practice.

In order to do this, place the lists of driving factors generated in Step B on the walls of the room you



are in. Ask people to place different coloured sticky dots on each factor (see case study on next page).

## 3. DECIDE ON WHICH COMBINATIONS OF DRIVING FACTORS TO USE

Which drivers, when combined, make the most challenging and suitable scenarios? Some combinations of drivers create sets of four scenarios where all scenarios show the promise to be useful – but others might create a scenario set where two scenarios are less interesting. Try out different combinations and select pairs of drivers.

## 4. DEFINE POLAR OPPOSITES FOR EACH DRIVING FACTOR

This is an important step. For each driver, define opposite states that ensure the most interesting and useful exploration of that driver. For each driver, there are many possibilities. For instance - the driver 'world economy' could be defined as 'strong economic development' versus 'weak economic development'; but it could also be defined as 'stable global economy' versus 'volatile global economy' – creating entirely different scenarios.

# EXAMPLE

## STEP ONE: Decide how to structure the scenarios

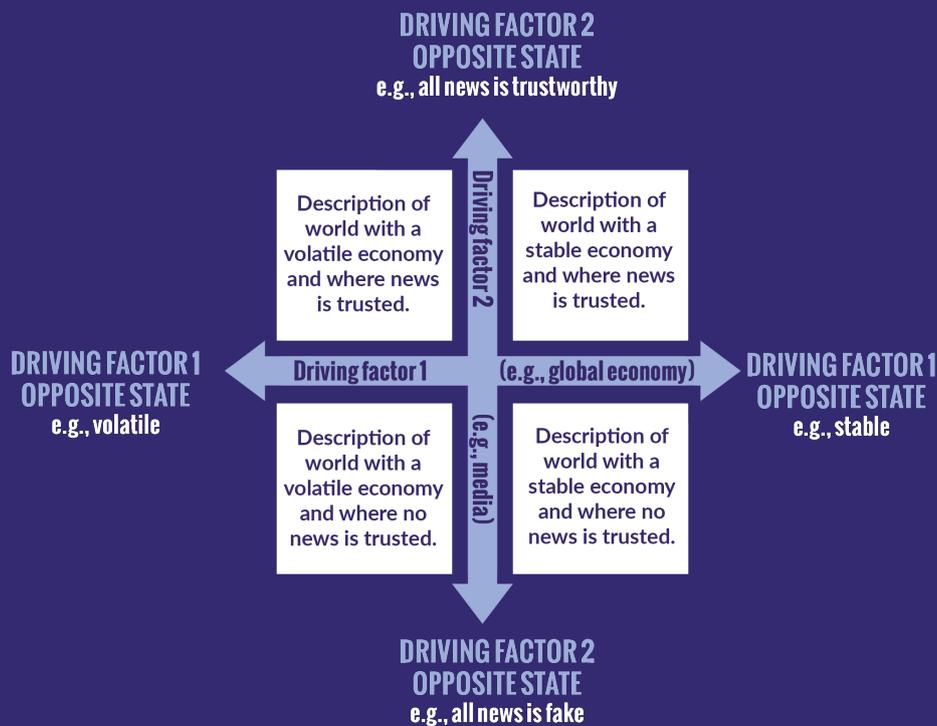


Figure 3: The two axis method. Adapted from Rockefeller Foundation (2010).

## STEP TWO: Identify key driving factors

In our workshop, the collaging process provided our participants with a long list of drivers. The list was placed around the room and participants were invited to place 3 different stickers (see Picture 4.3) next to the drivers that they thought would:

- Have the most potential impact on the issues discussed (blue sticker)
- Have the most uncertainty associated with them (green sticker)
- Are least discussed in law enforcement (orange sticker)

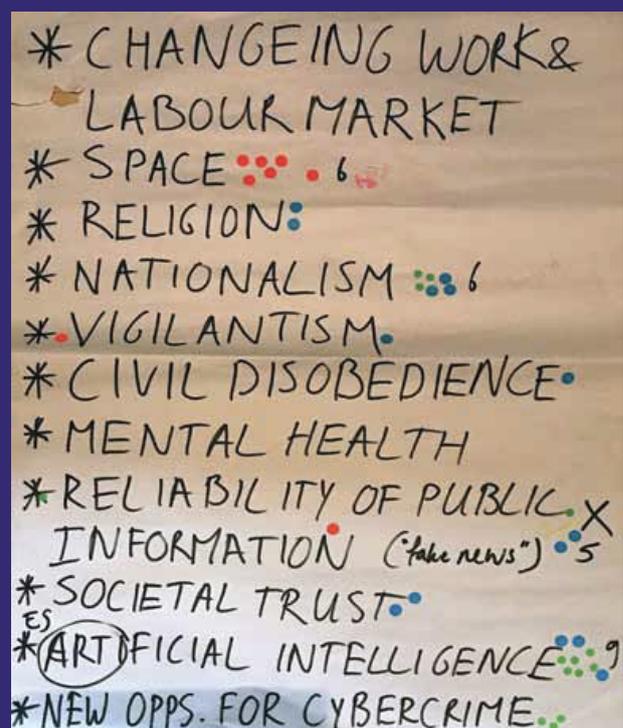


Figure 4: Drivers marked with different colours for impact, uncertainty and novelty [project workshop photo 2018]

Those that received the most number of stickers were chosen to be taken forward into the scenario planning process; they are highlighted in blue below:

- Migration
- Space
- Changing energy systems
- Age of leadership
- Role of algorithms
- International conflict
- Religion
- Water scarcity
- Change in warfare
- Virtualisation of life
- Inequality
- Nationalism
- Material scarcity
- Possibilities for community organisation
- Fluidity of gender identities
- Climate change
- Vigilantism
- New ways of self-organisation
- Biodiversity loss (awareness)
- Role & structure of families
- Ageing population
- Civil disobedience
- Technological capacity of criminals
- Longevity / life expectancy
- Individualisation
- Online living & ordering
- Mental health
- Difference in tech-savviness between generations
- Alternative / non-modern lifestyles
- Surveillance vs. privacy
- Changes in money & currency
- Reliability of public information
- Evolution of information availability
- New ways for social intimacy
- Availability of advanced biotechnology
- Isolation
- Societal coherence & trust
- Fundamental changes in (global) political system
- Work / life balance
- Changes in economic structure
- Robotisation
- Control over Artificial Intelligence
- Gender balance in leadership roles
- Manufacturability of online identity
- Changes in healthcare
- Changing labour market
- New opportunities for cybercrime
- Gender balance in global workforce
- Possibilities for invisibility in online sphere
- Quantum computing

## STEP THREE: Decide on which combinations of driving factors to use

The following pairs of drivers were chosen as the teams believed that they made the most interesting combinations:

1. Control over artificial intelligence & Changing energy systems.
2. Space & Surveillance/privacy.
3. Isolation & Role of algorithms.
4. Fundamental changes in (global) political system & Quantum computing.
5. Reliability of public information & Nationalism.

## STEP FOUR: Define polar opposites for each driving factor

The workshop was split into five groups of two participants. The subgroups took one pair of driver each. They used the two axis method to create their scenarios by defining polar opposites for each driver, thereby creating four 'worlds'.

The scenario making exercise resulted in a total of 20 different scenarios (4 for each of the 5 teams that explored the intersection of two drivers).

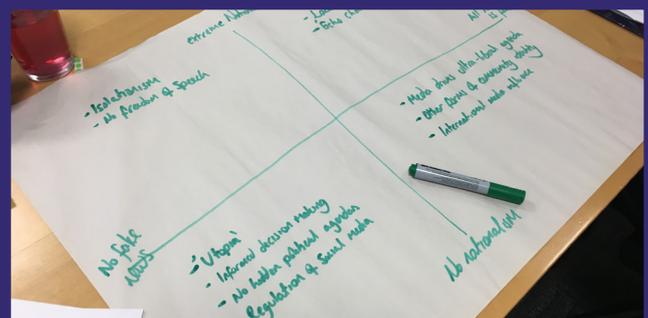


Figure 5: Four different scenarios for two drivers [project workshop photo, 2018]

# D | DEVELOP SCENARIO NARRATIVES

Once a scenario framework has been created, scenario narratives must be developed to investigate what happens in each scenario and the consequences of each scenario for the objectives of the process. Give some time for this (anywhere from 2-3 hours). We recommend the following 3-step approach to narrative development:

## 1. CREATE A VIVID SCENARIO

Starting at the end, with the time horizon of the project in mind, create a vivid scenario world where the basic dynamics of how the scenario works are clearly understood. If they combined to create a future world, how would this world function? What are the most salient elements of this future? What would life be like in this future world?

Try to engage the imaginations of those involved to bring this future to life (see also the section about games and role-playing in the appendix).

## 2. HOW DID THIS FUTURE WORLD DEVELOP?

Develop a timeline from the future world imagined in the previous step to the present. This can be done by 'back-casting' – start with the future condition, then imagine the dynamics at a time just before that, and a time just before that, and so on until the present is reached.



Note: many of the insights of a scenario's relevance for the present are typically found in the development of scenario narratives that connect futures to the present.

## 3. CONSIDER WHAT THE SCENARIO MEANS FOR VARIOUS VARIABLES OF INTEREST

In this third step, develop the scenario in more detail by exploring what the scenario would mean for various concrete and specific key variables and indicators of interest to the project.

Work in small groups to develop these narratives and then report back to everyone for further discussion. The two axis framework is a useful discussion tool.

# EXAMPLE

Figure 6 below shows the details of the four scenarios as envisioned by a group that selected 'isolation' and 'the role of algorithms' as their axis. Isolation was further developed as "group isolation" and "individual isolation" and algorithms were differently understood as "privately owned" and "publicly owned".

The emerging scenarios then revolved around the consequences of:

- Privately owned algorithms in futures in which individuals would isolate themselves;
- privately owned algorithms in futures in which groups would isolate themselves;
- publicly owned algorithms in futures in which individuals isolate themselves;
- publicly owned algorithms in futures in which groups would isolate themselves.

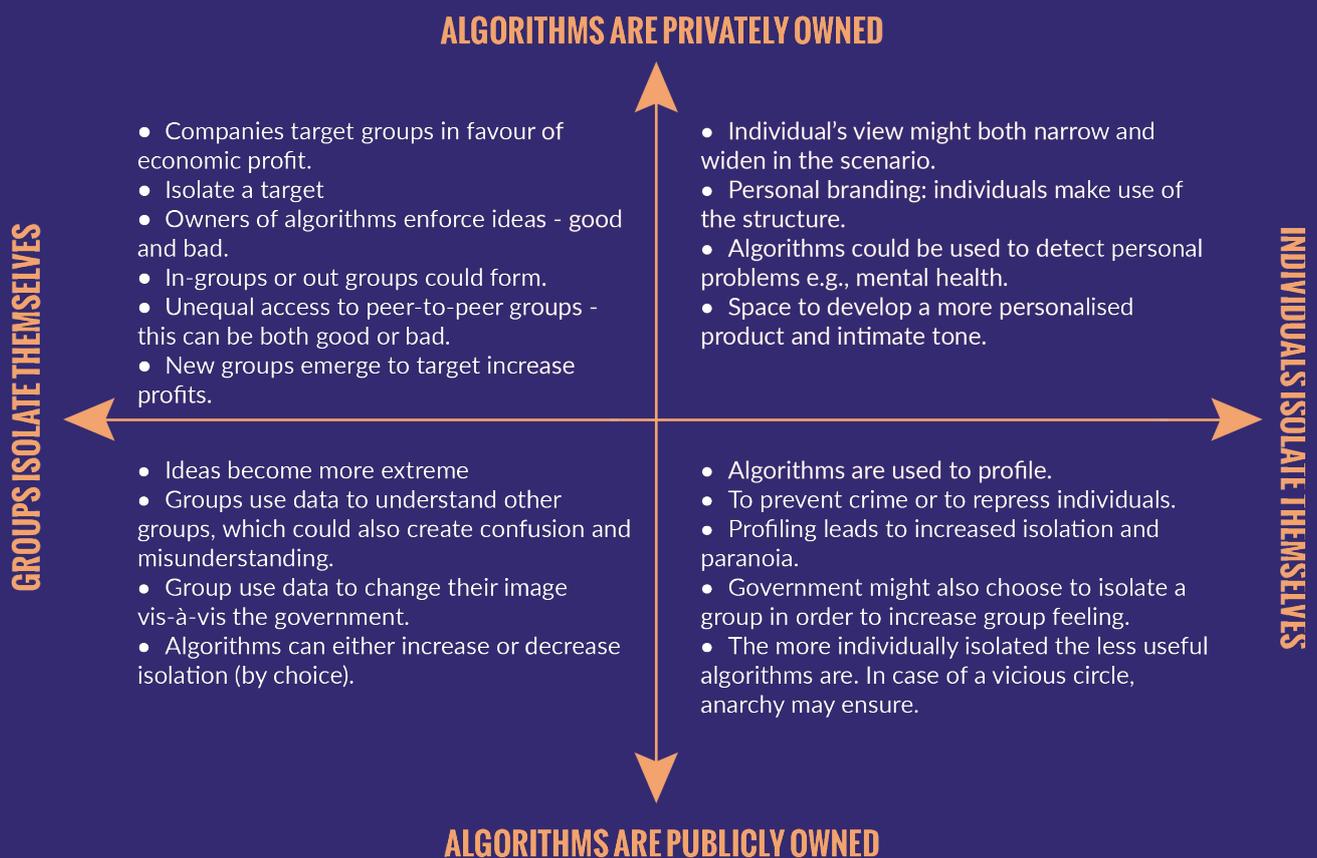


Figure 6: The four scenarios related to 'Isolation' & 'Algorithms' [project workshop 2018]

# E| EXPERIMENT WITH STRATEGIES

Collaging and scenarios are particularly useful to security and law enforcement organisations if they critically examine the capabilities and strategies of their organisations.

## TESTING PRESENT CAPABILITY

The gap between long-term futures and the focus in security and law enforcement on present-day problems can be resolved by using scenarios to investigate current capability.

This can be done by imagining how the organisation could/should respond to each scenario that has been derived from following this process. Helpful questions include:

- Where would present-day capability fall short?
- Would there be time and resources to change and adapt to each challenge?

Different scenario contexts could be used for a high-level strategic conversation focusing on the main features of the organisation. But scenarios can also be used for in-depth and detailed reviews of organisational capability by examining existing approaches and protocols step by step through the perspective of each scenario. Simulation gaming and role-playing (see also below) can be particularly useful.



## EXPERIMENTING WITH NEW STRATEGIES AIMED AT SHAPING THE FUTURE ORGANISATION

Next to the testing of present-day capability, scenarios are also commonly used for robustness-testing of new plans and strategies. This can be done as follows:

1. A draft strategy can be reviewed against various scenarios. Each scenario will highlight different strengths and weaknesses in the strategy, and will lead to different recommendations. The more diverse the sets of scenarios, the more diverse the recommendations for strategy improvement will be.
2. The next step is to compare results across all different scenarios and evaluate 1) what common weaknesses and strengths are identified across all scenarios; 2) which recommendations for strategy improvement come up across the different scenarios; and 3) which challenges and opportunities emerge only in very specific scenario contexts but are nonetheless valuable to consider for the revision of the strategy or plan.

## IMAGINATIVE SCENARIO PLANNING

Game and role-playing approaches for strategy testing can be particularly useful given that the strategy in question is not yet implemented. When players take on antagonistic actor roles, implementation problems, loopholes and unintended consequences can surface. Similarly, when players take on new/future roles that are to be created as part of new organisational capability, problems with the execution of future strategies can be identified.

A list of weak signals may not signify much to leadership, but an analysis of how weak signals correspond to different narratives of the future produces more strategic insights.

# EXAMPLE

## Formulating plans in the context of scenarios

After having discussed and described the details of each scenario, the project workshop groups were asked to come up with a set of organisational strategies which law enforcement organisations would be able to employ in response to the threats inherent in each scenario.

## Role change: responding to plans

After discussing and determining the various scenarios in their own groups, one member of every group was requested to remain at their original table, while their partner moved tables. The remaining group member had to explain to a new partner all four scenarios and the responses that were formulated.

This new partner then took on an antagonistic role, such as a criminal or terrorist, based on their own scenario set – in other words, not the scenario

set that the plan had been based on – and try to counter, circumvent, sabotage or otherwise deal with the plan proposed. These role-playing participants had to punch as many holes in the plan as they could – resulting in a new set of critiques that was often unanticipated by the maker of the plan, which was based on a different scenario set.

The goal of this exercise was to make it very clear to participants that *plans formulated in response to any one set of scenarios would still be vulnerable to threats coming from other sets of scenarios* – highlighting the need for flexibility in strategies; and the need for exploring many diverse futures.

The exercise was repeated so that each strategy was 'attacked' by a player from a scenario set that had not inspired it.

# REFERENCES AND FURTHER READING

There is a growing body of literature on futures methods and specifically on the methods outlined in this toolkit. This list contains the key publications that were used for each section of this toolkit, as well as further reading that goes beyond this toolkit and into the foundations of futures work.

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