

INTRODUCTION

FORESIGHT TOOLS

Foresight allows us to explore long-term outcomes by engaging early so we can respond to challenges and opportunities as they emerge.

'Foresight tools' refers to the methods and models used to guide and implement foresight thinking. These tools are designed to explore what is possible and invite discussion, clarify strategy and make the unseen 'seen'. Consequently, they help us become more observant, agile and antifragile in relation to the world around us. They help unlock the future.

FORESIGHT CONCEPTS

Many standard concepts that underlie common analytical tools also apply to foresight. For example, collecting and verifying data; sorting and categorising data; preparing and exploring timelines; ranking trends and drivers; and testing assumptions. Once these concepts are developed, value comes when results are assessed critically and independently.

FORESIGHT METHODS AND MODELS

There are many different types of methods and models. This selection has been colour coded to illustrate whether they are primarily scanning tools, mapping tools or scenario tools.



Scanning tools aim to identify what has changed, is changing, or might change.



Mapping tools aim to show relationships and connections.



Scenario tools aim to create a glimpse into a future world. They may take the form of a story, a video or an artefact from the future.

Although the Institute categorises foresight methods and models into the three groups above, other practitioners may group the same tools differently.

These tools offer great flexibility. There is a clear linear relationship between the three groups, but in reality, practitioners tend to move back and forth between scanning, mapping and scenario development.

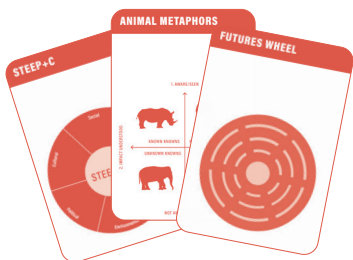
All three types of tools can be explored lightly (taking hours) or in depth (developing over weeks or months). These tools can be used by individuals, small local groups or large groups of participants from around the world.

Some practitioners focus on one particular group of foresight methods and models (i.e. scanning or mapping or scenario development), and others will practise all three. Practitioners tend to have favourites.

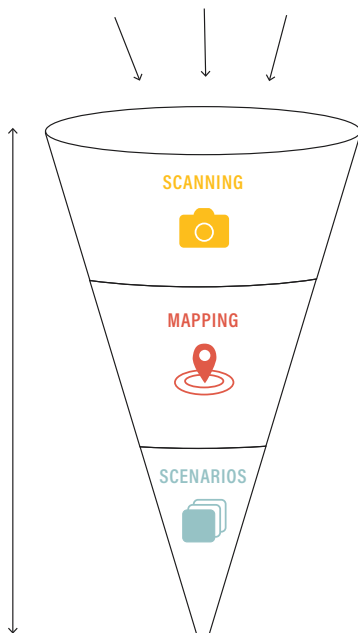
The extent of due diligence and expertise required to use these tools will depend on the importance of the decisions being made. For instance, arguably, defence scenarios require higher levels of due diligence than vegan food scenarios. The purpose of each scenario, the extent to which a decision can be reversed, and the related costs, risks and benefits, are also important considerations.

FORESIGHT TOOL CARDS

The foresight tools cards are designed for practitioners to select a combination of cards to create an exercise in order to explore a particular issue or problem.



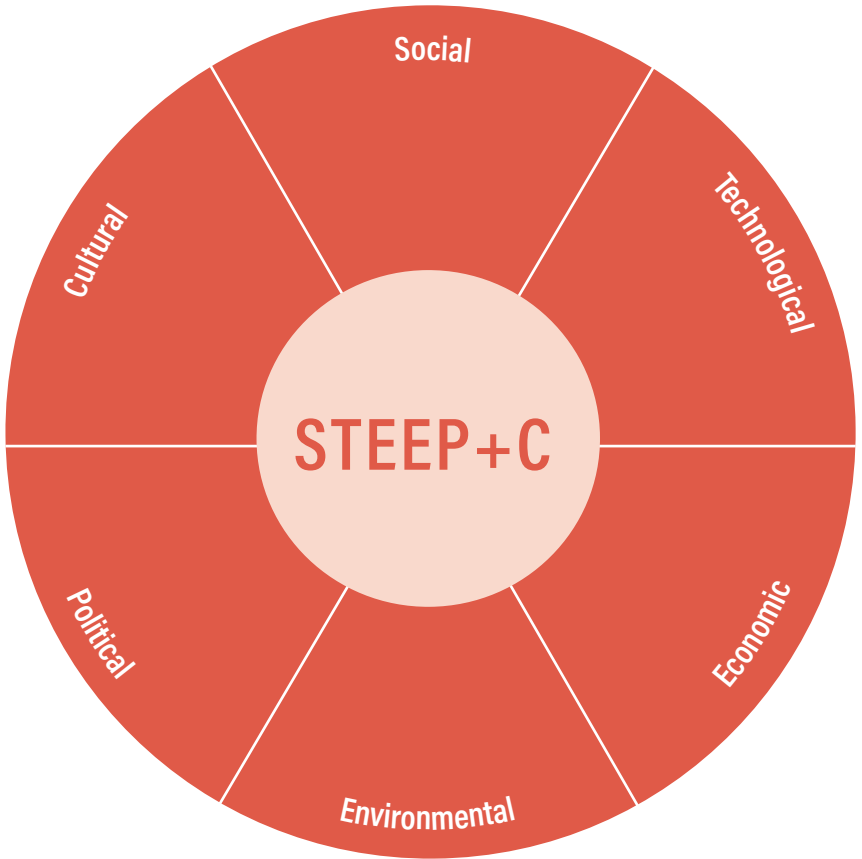
SIMPLIFIED FORESIGHT PROCESS



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Note there are more tools to come.

The McGuinness Institute is a non-partisan think tank applying hindsight, insight and foresight to explore major challenges and opportunities facing New Zealand over the long term.

STEEP+C





DESCRIPTION

STEEP+C is a tool used to assess the external factors that impact an organisation's or country's future.

PURPOSE

It helps categorise trends or issues into elements and therefore enables participants to share and engage more deeply in an issue. As a consequence, it helps prevent bias and makes users actively seek out other viewpoints.

HISTORY

The acronym STEEP refers to the first five categories listed on the right; however, we prefer Peter Bishop's version from his paper *Understanding paradox through strategic foresight* (2011), which adds Cultural as a sixth element.

WHY IT IS USEFUL

STEEP+C is one way that data trends or drivers can be grouped together for further analysis.

HOW TO USE

Categorise data, trends and/or drivers into useful groups for ongoing analysis and discussion.

MORE DETAIL

SOCIAL/PEOPLE

Social changes such as demographic change, or changes in people's behaviour and lifestyle.

TECHNOLOGICAL

Technological advance and integration such as innovations and product development trends.

ECONOMICAL

Economic environments such as overall economic growth, interest, income, market and competitor.

ECOLOGICAL

Ecological impacts of products and/or services, both physically and biologically.

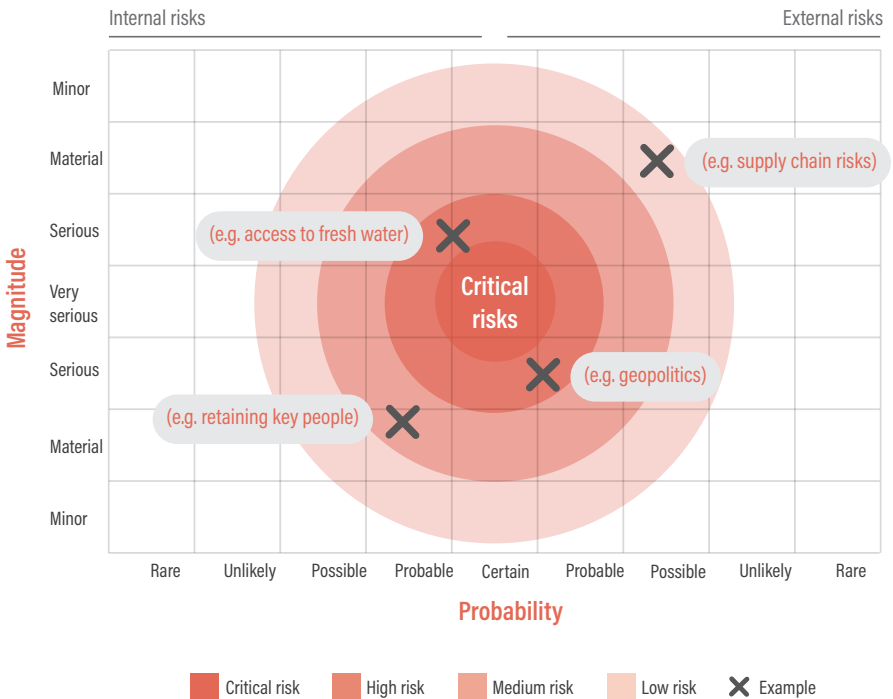
POLITICAL/GOVERNANCE

Political changes involving laws, regulations and policies such as development goals, incentives or policy burdens.

CULTURAL

Cultural contexts including language, beliefs, values and norms that allow us to live and work with others in the world.

MAPPING CRITICAL RISKS



MAPPING CRITICAL RISKS



DESCRIPTION

Not all risks are created equal. This tool, *Mapping Critical Risks*, illustrates how risk can be analysed by:

- probability/likelihood (often as a percentage)
- magnitude/impact (e.g. very serious, serious, material or minor)
- time (e.g. 0–5 years, 5–10 years, 10–20 years, 20+ years)
- velocity (the speed at which risks could impact, e.g. very rapid, rapid or slow).

PURPOSE

Mapping Critical Risks creates a way to have a conversation about the types of risk an organisation or country faces, and how those risks might be prevented/addressed.

HISTORY

Risk management is thought to have evolved from the lessons of World War II.

WHY IT IS USEFUL

It enables decisions to be made or delayed based on quality information and a shared understanding of the issues.

HOW TO USE

Identify a list of risks the organisation or country faces. See, for example, New Zealand's National Risk Register.

Analyse each by probability and magnitude.

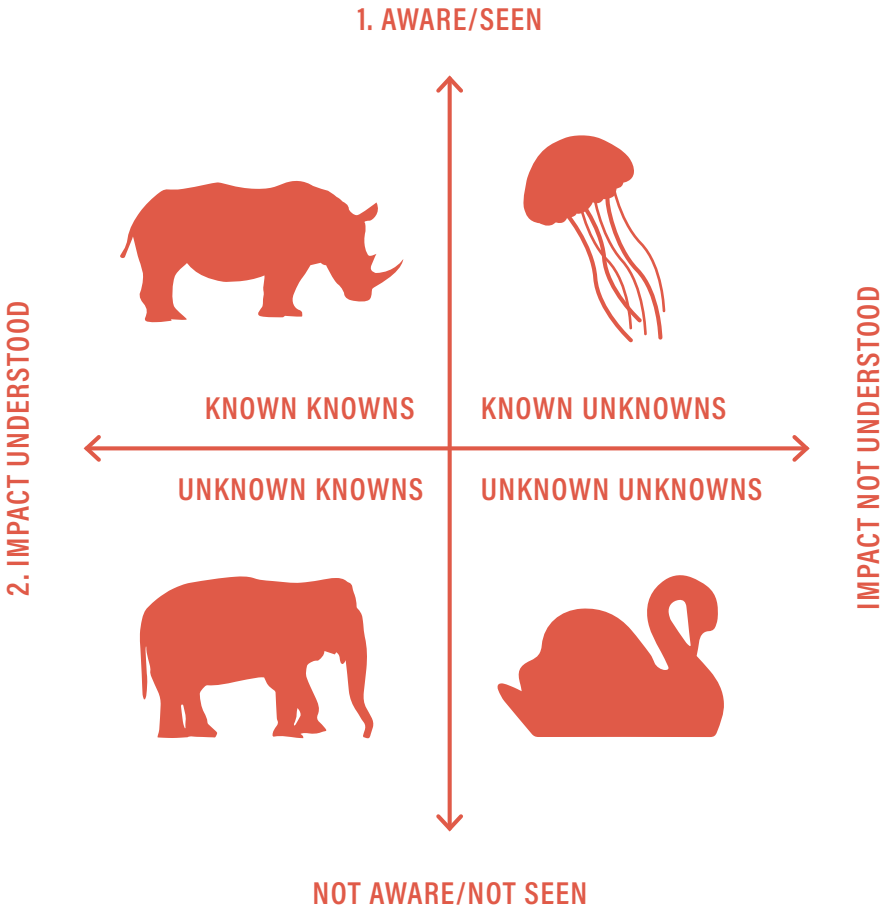
Then map. See example overleaf.

Lastly, discuss ways to move risks away from the centre.

MORE DETAIL

Managing risk is a key aspect of foresight. For example, anticipatory governance is a foresight tool that aims to increase foresight and decrease risk through the development of efficient methods to address events when they first emerge or prevent them altogether.

ANIMAL METAPHORS



ANIMAL METAPHORS



DESCRIPTION

Futurists often use animal metaphors to describe the nature of an event/issue.

PURPOSE

The aim is to make us think about the difference between what we are aware of and what we understand.

HISTORY

Unknowns and knowns were popularised in 2002 by US politician Donald Rumsfeld.

WHY IT IS USEFUL

It enables practitioners to discuss issues and events quickly and playfully.

HOW TO USE

Categorise each risk.

MORE DETAIL

GRAY RHINO (KNOWN KNOWNS)

Things we are aware of and understand. Futurist Michele Wucker popularised the term in her book *The Gray Rhino: How to Recognize and Act on the Obvious Dangers We Ignore* (2016) – while we disregard the warnings, the event continues to stampede towards us like a rhino.

BLACK JELLYFISH (UNKNOWN KNOWNS)

Things we thought we knew but that in reality prove to be more complex and uncertain. The jellyfish illustrates that an event may start rather innocently, but over time prove to have not only a long tail, but one with a sting. It is inspired by jellyfish blooms.

BLACK ELEPHANT (KNOWN UNKNOWNNS)

Things we are aware of but do not understand. Poet Ivan Krylov may have coined the term in his fable 'The Inquisitive Man' (1814). The fable tells the story of a man who goes to a museum and notices all sorts of small things, but fails to notice the elephant in the room. Michele Wucker distinguished her gray rhino from 'the elephant in the room' by its tendency to charge, not just stand quietly waiting to be noticed. A similar metaphor is the lion in the grass, when risk is hiding in plain sight.

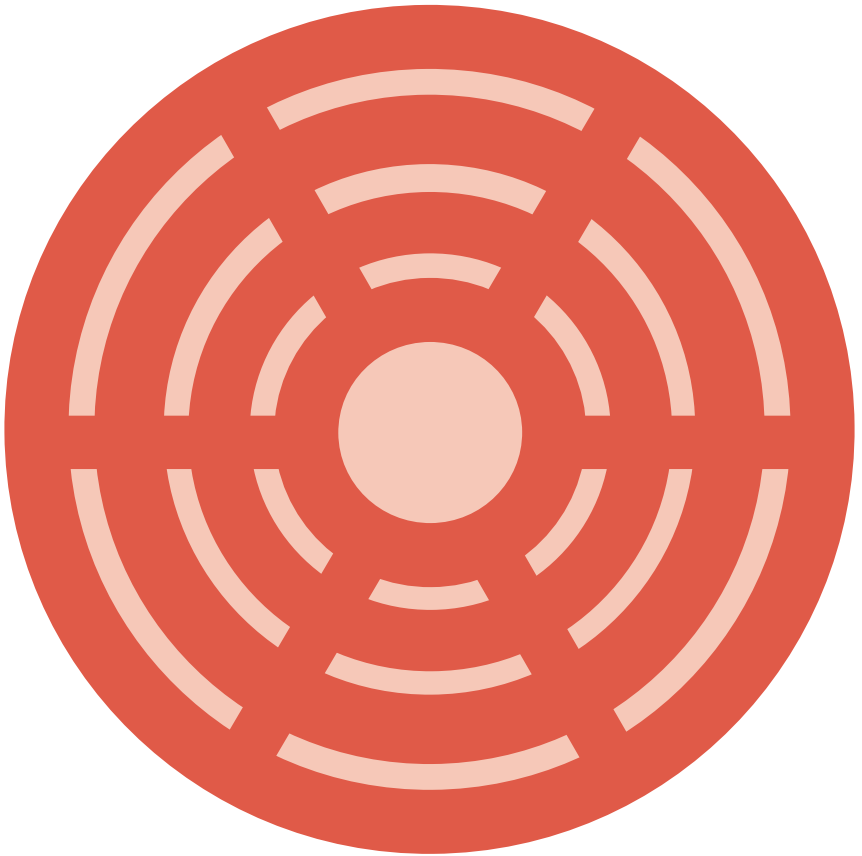
BLACK SWAN (UNKNOWN UNKNOWNNS)

Things we neither are aware of, nor understand. Futurist Nassim Nicholas Taleb popularised the term in his book *The Black Swan: The Impact of the Highly Improbable* (2007).

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FUTURES WHEEL



FUTURES WHEEL



DESCRIPTION

The *Futures Wheel* is a quick and easy tool that can be applied to a wide range of issues.

PURPOSE

The aim is to identify possible causal ripple effects over time.

HISTORY

The *Futures Wheel* was invented by Jerome C. Glenn in 1971.

WHY IT IS USEFUL

It can help futurists develop an understanding of causality by mapping how a change in one area can create a ripple effect. It is extremely useful at identifying previously hidden unintended consequences of decisions.

HOW TO USE

Choose a problem, decision, event or trend and place at the centre of the wheel.

Then, ask what-if questions, moving outwards from the centre to at least third-layer impacts.

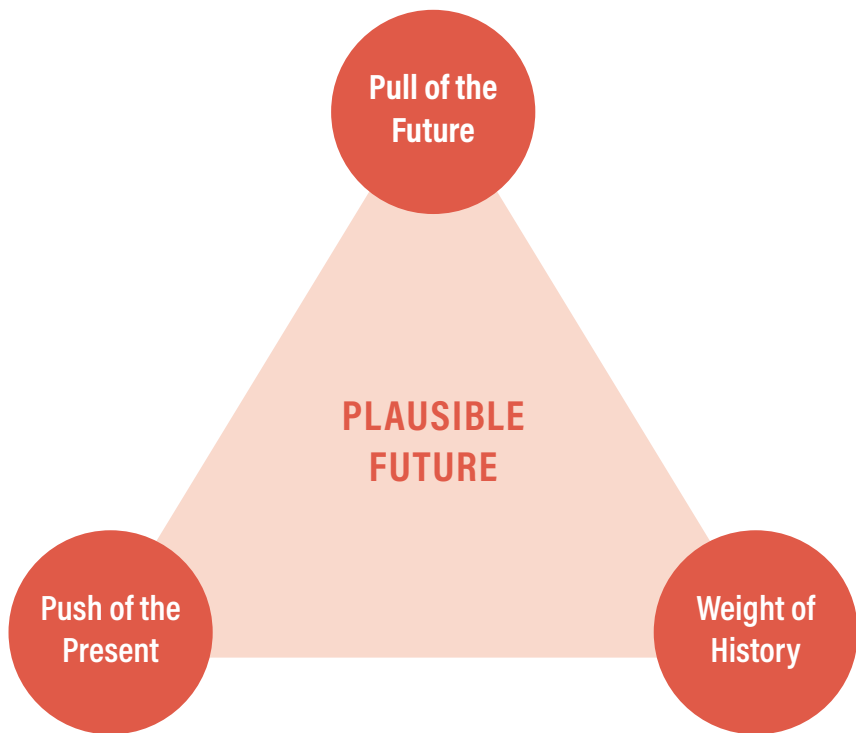
MORE DETAIL

The history of the *Futures Wheel* is explained in Jerome C. Glenn's paper 'Futures Wheel' (2021). The paper states:

'The Futures Wheel is most commonly used to:

- think through possible impacts of current trends or potential future events
- organize thoughts about future events or trends
- create forecasts within alternative scenarios
- show complex interrelationships
- display other futures research
- develop multi-concepts of the initial concept of the trend or event
- introduce futures thinking in a group context
- engage workshop participants into thinking together about the future
- nurture a futures-conscious perspective
- aid in group brainstorming
- help prevent being blindsided by surprises.'

FUTURES TRIANGLE



FUTURES TRIANGLE



DESCRIPTION

The *Futures Triangle* maps today's views of the future through three dimensions:

- *Pull of the future* refers to a visual representation of our desired future.
- *Weight of history* refers to the barriers and obstacles that currently exist.
- *Push of the present* refers to trends and drivers that are shaping the future (e.g. demographic shifts).

PURPOSE

By analysing the interaction of these three forces, the *Futures Triangle* shifts the conversation from possible futures to plausible futures.

HISTORY

The *Futures Triangle* is a tool developed by Sohail Inayatullah in his paper *Six pillars: Futures thinking for transforming* (2011).

WHY IT IS USEFUL

The *Futures Triangle* helps to kickstart the process of thinking beyond the now. While it is a simple tool, it can support deep discussions about possible futures.

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HOW TO USE

The tension and interaction between each of the three dimensions sets the context.

MORE DETAIL

Inayatullah identified six futures questions:

1. 'What do you think the future will be like? What is your prediction? More and more progress and wealth? ... Why?
2. Which future are you afraid of? Random acts of violence? Do you think you can transform this future to a desired future? Why or why not?
3. What are the hidden assumptions of your predicted future? Are there some taken-for-granted assumptions (about gender, or nature or technology ...)?
4. What are some alternatives to your predicted or feared future? If you change some of your assumptions, what alternatives emerge?
5. What is your preferred future? Which future do you wish to become reality for yourself or your organization?
6. And finally, how might you get there? What steps can you take to move in toward your preferred future? As it says in ancient Buddhist texts, much of the solution to the challenge of life is simply in being pointed in the right direction.'

SCENARIOS BY THE NUMBERS

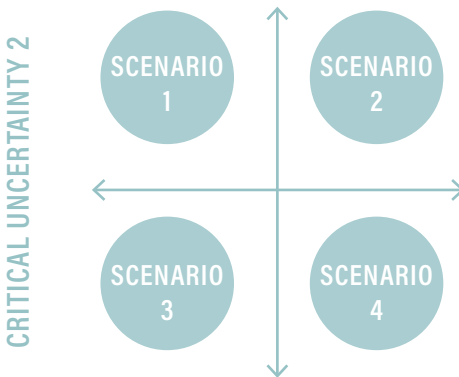
CRITICAL UNCERTAINTY 1



CRITICAL UNCERTAINTY 1



CRITICAL UNCERTAINTY 1



SCENARIOS BY THE NUMBERS



DESCRIPTION

Scenarios explore complexity through the creation of unique narratives and images that illustrate one or more specific future worlds. Importantly, they are not predictions.

PURPOSE

Scenarios aim to stretch minds, confront assumptions and enable people to think differently about the future.

Unlike sensitivity analysis, scenario analysis is a foresight tool. Whereas sensitivity analysis measures how a change in one variable affects the outcome of another variable, scenario analysis considers the impacts of a number of variables at the same time (e.g. AI, aging population and geopolitical unrest). Sometimes one (or two) variables are selected to be the critical (or primary) uncertainty variable/s.

HISTORY

Scenarios have been in use for over 50 years. Early examples include Rand Corporation scenarios and Shell Scenarios. See *40 years of Shell Scenarios* (2013).

WHY IT IS USEFUL

Scenarios provide insights into how current and emerging drivers might evolve and create alternative trajectories, and suggest ways organisations or countries might forward engage with difficult issues.

It is extremely useful to identify a list of signals that might indicate movement towards (or away from) a possible future world.

HOW TO USE

Scenarios explore situations where there is more than one change happening at the same time. Futurists are interested in how combinations of events and their order/sequence might shape the future.

MORE DETAIL

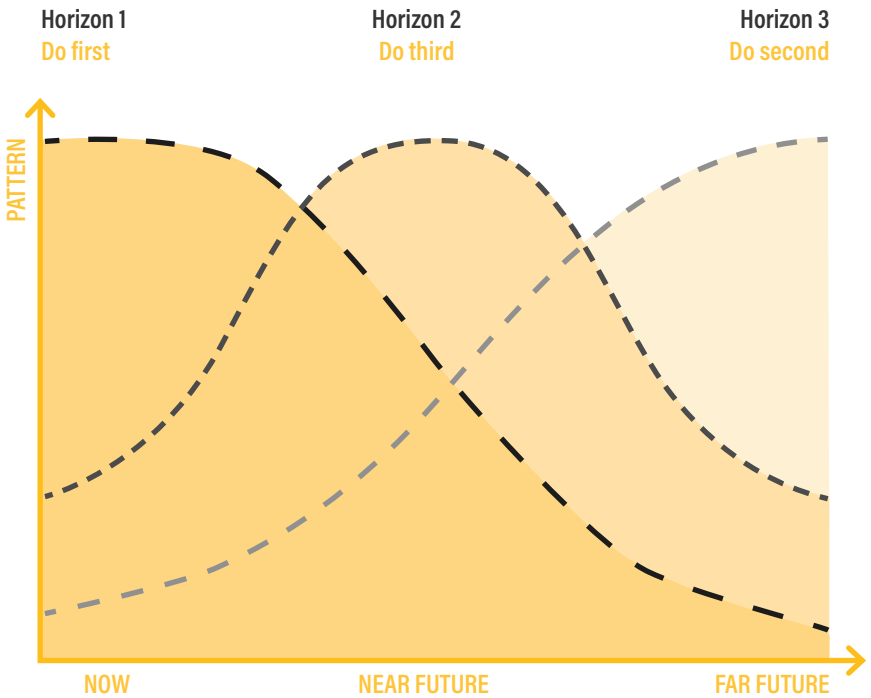
Scenarios require a great deal of expertise beyond what can be described here.

What is very important is the need to be transparent about what type of critical uncertainty/ies and variables are being applied. It is also important to be aware of the potential for bias and hidden assumptions in the process, which might contaminate the final results.

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THREE HORIZONS



THREE HORIZONS



DESCRIPTION

FIRST HORIZON

Current context and conditions; the focus is maintaining stability, and the mindset is that of the manager.

THIRD HORIZON

Transformative emerging changes, ideas about possible futures, and visions of preferred futures; the focus is on transformation and disruption, and the mindset is that of the visionary.

SECOND HORIZON

Actions taken in the present to resist change, to adapt to change, or to build on change; the focus is on creating and managing change, and the mindset is that of the entrepreneur.

PURPOSE

Three Horizons describes three patterns of activity and their interactions over time. It maps a shift from the established patterns of the first horizon to the emergence of new patterns in the third, via the transition activity of the second.

HISTORY

Three Horizons was developed by Bill Sharpe of International Futures Forum as part of work for the UK Foresight Program's Intelligent Infrastructures Project.

WHY IT IS USEFUL

This tool draws attention to the three horizons as existing always in the present moment, and shows that there is evidence about the future in how people are behaving now.

HOW TO USE

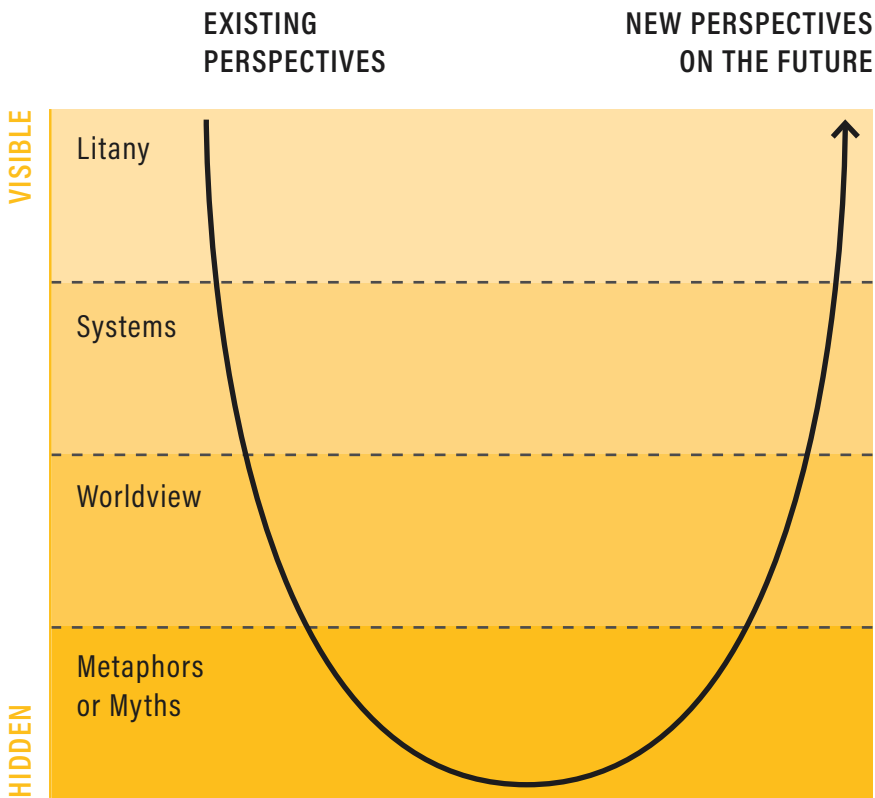
Use sticky notes to populate the framework with ideas from a group brainstorm, then discuss and move around as needed.

MORE DETAIL

The horizons are typically introduced and thought about in this order: H1 – H3 – H2. Without a third horizon it is impossible to make the distinction in H2 between 'sustaining innovation' and 'transformative innovation'. Three central practices that the framework encourages:

- see things as patterns
- put ourselves in the picture
- convene the future

CAUSAL LAYERED ANALYSIS



CAUSAL LAYERED ANALYSIS



DESCRIPTION

Causal Layered Analysis is a tool used to analyse and explore the deeper layers of meaning and causality underlying a particular issue or topic.

PURPOSE

It explores four layers of analysis: the surface understanding of an issue (litany), the causes creating and sustaining the situation (systems), the different perspectives shaping it (worldview) and the underlying stories that might feed it (metaphors or myths).

HISTORY

Causal Layered Analysis is a tool developed by Sohail Inayatullah in his paper *Causal layered analysis: Poststructuralism as method* (1998).

WHY IT IS USEFUL

Analysing cultural, social and political dimensions unveils hidden assumptions and facilitates the development of alternative future scenarios. It enables examination of the issue from various angles.

HOW TO USE

Fill in the tool from top to bottom by answering questions related to each layer.

1. LITANY

The official and generally accepted description of the topic or issue.

Ask: What is currently happening?

2. SYSTEMS

Social, economic and political structures, actors and policies underlying and maintaining an issue.

Ask: Why is this happening?

3. WORLDVIEW

Deeper cultural assumptions and perspectives that enable structures and justify behaviors.

Ask: What is true?

4. METAPHOR OR MYTH

The social narratives and imagery, acting at the level of collective consciousness, usually expressed through art, stories and symbols.

Ask: What are the collective symbols?

MORE DETAIL

The challenge is to conduct research that moves up and down these layers of analysis. This tool is well known for the insights that can be gained from moving from metaphors to litany.