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future

risks and opportunities toolkit

future risks and opportunities toolkit

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About this toolkit

In this toolkit:

- About this toolkit
- How to use this toolkit
- 19 Tool cards
- 3 Diagram cards

Helping organisations build strategies for the future.

What the tools are: Techniques and methods for strategically identifying and analyzing future risks and opportunities.

What to use it for: To think about the future using futures thinking and analysis to make better decisions today.

Who it is for: The toolkit is intended for futures analysts, policy-makers, strategists and people managing a futures process.

The content of these cards is from the UK Government's Foresight Horizon Scanning Centre's work on future thinking and is taken from their Exploring the Future: Tools for Strategic Thinking toolkit.

Their toolkit draws extensively (but not exclusively) on the approach that the Foresight Horizon Scanning Centre takes in its own futures work.

For more detailed information on all these techniques, steps, and case studies of organisations and businesses using them, visit:

http://www.foresight.gov.uk

How to use this toolkit

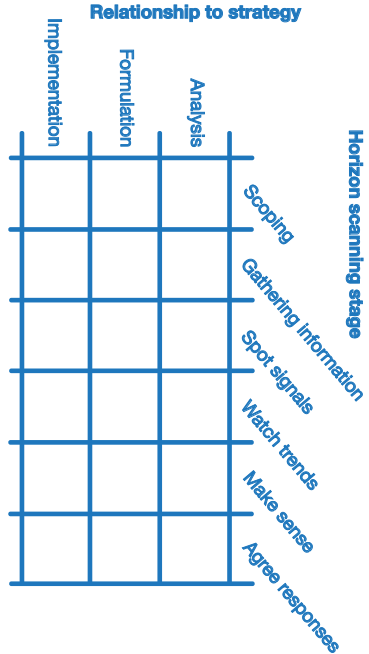**Each card contains detailed information about the tool, how to use it and what resources you will require:**

- **Tool/technique name**
- **Overview:** What the tool can be used for.
- **Description:** How the technique gathers and uses information to help organizations develop their strategy. This section also includes which part of the strategy and policy process the tool can be used for.
- **Expertise:** Relative amount of expertise the tool requires.
- **Time horizon:** Relative time horizon the tool can consider.

- **Timing:** Relative amount of time needed to use the tool. NB Timing for most could be extended.
- **Participants:** Relative number of participants needed to use the tool. NB Most require collaborative working.
- **Steps:** Practical step by step guide for using the tool including how to run sessions.
- **Helpful hint:** Some additional hints that will help using the tools.
- **Equipment:** Details what equipment you will need for using the tool.

Each technique can be mapped to one of six stages in the horizon scanning process and to one of three stages in the strategy development process (Putting the horizon scanning and strategy processes together creates a 3x6 matrix). The stages in the strategy development process are:

1. Strategic analysis: during this stage of the strategy development process, strategists gather and analyse knowledge about the area of strategic importance;
2. Strategy formulation: this is the stage where the organisation describes its strategic visions, identifies aims and objectives, explores strategic options and identifies the resources required to deliver the strategy;
3. Strategy implementation: the stage where organisations move into delivery mode.

These stages are not always wholly distinct or linear.

To help users of the toolkit navigate through the scanning and strategy processes, each tool details which stage it is relevant for in the Description section.

Relationship to strategy

Implementation · Formulation · Analysis

Horizon scanning stage

Scoping
Gathering information
Spot signals
Watch trends
Make sense
Agree responses

Backcasting

Describes a preferred future and sets out the steps to make it happen

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 1 day +
Participants: 3 or more

Description

In Backcasting, policy makers and strategists describe a vision of their preferred future, then work out the steps towards this future and what may impact on them achieving this future.

This approach helps to agree responses in the formulation and implementation stages of strategy.
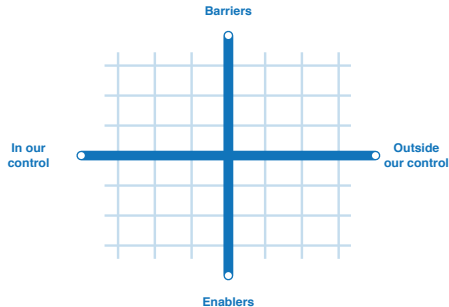
Steps

1. Define a timescale eg 20 years in the future.
2. As a group in a workshop setting, describe your preferred future. To encourage participants, you could think about what a press release might say or what the headline for a newspaper may be.
3. Define the key differences between your preferred future and how things are today.
4. Identify the key steps needed to achieve the desired future and map these on to a timeline. Push participants to populate the whole timeline.
5. Brainstorm the drivers and trends – both positive and negative - which could impact on your ability to achieve the preferred future.
6. Map these drivers and trends onto the matrix according to whether they are barriers (to achieving the preferred vision) or enablers (towards achieving the preferred vision); and whether they are in your control or out of your control.
7. Discuss what you need to do to ensure that barriers inside your control are minimised; and that enablers inside your control are optimised.
8. Brainstorm to explore how to get around barriers outside your control and capture this thinking.
9. Define performance indicators that will help you monitor progress towards your preferred future.
10. Allocate tasks to participants and stakeholders that relate to these performance indicators and drivers.
    Helpful hint
- It is really useful to have external experts involved in this process. They offer an objective view and knowledge of the subject area.

Equipment: Agenda and activity sheet, Matrix chart, Timescale, Flipchart, Sticky notes, Pens

Causal Layered Analysis

Layers four levels of analysis of events, trends and conditions to develop alternative futures on a topic

Expertise

low medium **high**

Time horizon

short medium long

Timing: 0.5 day +
Participants: 3 or more

Description

The past, present and future of a particular topic are analysed through four levels:

1. Litany: the official unquestioned view of reality
2. Social causes: systemic persectives
3. Worldview - discourse: unconsciously held idealogical and discursive assumptions
4. Myth - metaphor: the unconscious emotive dimensions of the issue

This layered approach increases meaningful understanding of the topic, and challenges beliefs and prevalent views.

This approach develops greater understanding in the early analysis stage of strategy.

Steps

1. Define the field and clearly express the purpose or question that you are responding to.
2. Invite participants to a workshop setting. in the session, capture thoughts on sticky notes and pay attention to myths that emerge out of the brainstorms - group these into themes where appropriate.
3. Analyse and brainstorm the topic through level 1: the Litany of current events, trends and conditions.
4. Analyse and brainstorm the topic and outcomes of level 1 through level 2: the Social causes, such as social, technological, economic, environmental and political (STEEP) factors, the intent of government, relationships and systems.
5. Analyse and brainstorm the topic and outcomes of level 1 and 2 through level 3: the Worldview - discourse. These will be deeper statements of discourse, values and cultural structures.
6. Analyse and brainstorm the topic and outcomes of level 1, 2 and 3 through level 4: Myth –metaphor. These are emotive, less-specific, heart-felt issues and archetypes.
7. Select one of the myths or metaphors that emerge from the conversations. Then, work in reverse order, upwards, through the levels to develop the scenario. In this way, the layers of myth, world view and causes build a new litany and set of 'events' to fulfil the scenario. The result is a well-developed (possibly alternative) perspective.

Helpful hint

- Ensure your facilitator is knowledgeable about Causal layered analysis.
- A more challenging approach is to alter one of the worldviews or myths in some way, and work back up the layers with that.

Equipment: Flipcharts, Sticky notes, Pens

Delphi

Involves a wide dispersed group of participants to gather opinions on the future of a field

Expertise

low medium **high**

Time horizon

short medium long

Timing: 30 - 45 days
Participants: 7 or more

Description

Delphi is a consultation process involving a wide group of dispersed participants.

It uses a set of predefined questions to seek expert opinions on a given field on when events are likely to happen and on their underlying influences. Delphi allows anonymity of responses, which helps to ensure that independent opinions are gathered and that groupthink is avoided.

This approach can be used to gather diverse distributed opinions or to reach a consensus.

This approach helps to spot signals in the analysis stage of strategy.

Steps

1. Determine a well-defined set of topics aligned to a broadly-defined field (e.g. communications).
2. Select a moderator with experienced at managing the dynamics of a group and knowledge of the field.
3. Develop the survey using multiple choice questions that are designed to elicit the opinions of the panel on experiences and judgments, predictions and/or recommended activities. The survey should also include contextual questions about the respondents and the process by which they reached their decisions. Map this process onto a flow chart to aid the construction of the survey.
4. Enlist a Delphi panel consisting of experts on all or portions of the topic and ensure they are comprehensively briefed. A secondary panel consisting of a broader stakeholder set can be consulted in later iterations of the process.
5. In round one, circulate the survey. Each panellist responds anonymously.
6. The moderator analyses the responses with the focus on capturing the distribution of opinion of the participants for each of the questions. These opinions can be plotted on a chart.
7. Share the analysis with the panel and gather feedback. If you are intending to gather diverse distributed opinions then the process stops here.
8. If you intend to come to a consensus, amend the survey to include only the most common answers. Repeat further rounds of the questions and analysis until you are able to reach a consensus. Two rounds of questions should produce high quality results in most cases.
9. If desired, circulate the question set to a wider stakeholder group to check the expert opinion with that of other stakeholders.
10. Analyse the results and write up.

Helpful hint

• Ensure that the topic area and questions that explore it are well-formed through perhaps performing an Issues Tree activity in advance or sampling a subset of experts.

Equipment: Preferred form of panel exchange eg e-mail, telephone, online forum, online survey

Dialogue

An open-ended conversation to explore, probe and categorise topics

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 0.5 - 1 day
Participants: 5 - 15

Description

Dialogue is an inquisitive review of a topic that encourages an intelligent exchange of ideas and personal insights to establish topic structures and areas for further investigation. Dialogue can also help to build teams and reveal participant thinking styles and their specific interests.

This approach helps to agree responses in the formulation stage of strategy.

Steps

1. Outline the specific futures topic and the issues to be addressed.

2. Recruit participants and provide them with a brief overview of the topic and with a few direction-setting questions. Ask them to briefly conduct individual open-ended investigations of the topic.

3. Assign one participant to prepare an overview of the topic or a deeper study of a particular area.

4. In the workshop, start the session with a 'warm up' conversation of about 15 minutes on an unprepared different topic and then the prepared presentation.

5. Explain the 'rules' of the Dialogue session and expectations of the day: unearthing contextual information. Rules should include: showing respect for the ideas presented and an expectation to challenge conventional thoughts. It is helpful to emphasise good listening habits and observation skills, such as noticing body language.

6. There is no formal facilitator in Dialogue, as the conversation is open ended. However, some gentle guidance may be necessary to keep it on track and ensure all participants are being heard.

7. Expect the conversation to get complex and use a large-scale mind map to capture the conversation. Encourage each participant to add to the diagram, taking turns at expressing views and leading the conversation. Separately, individuals should be encouraged to capture thoughts in their own notes.

8. At the midpoint, check for clarity and ask participants 'What has been the key learning (or most important revelation) to you so far, and why?'. Group these key learnings by theme.

9. Theme and frame the remaining discussion by these key learnings.

10. Capture outputs from the discussion focusing on sticking points, key learnings, themes and relationships of themes.

11. Ask for post-dialogue comments to be forwarded via e-mail or on a member-only, collaboration platform, such as Google Groups. This platforms can be used to post notes or large files such as audio recordings and photos of the participants.

Equipment: Recording equipment, Cameras, Videos, Flipcharts, Pens

Folksonomies

Provides a map of what people find interesting or important through focusing on user-generated and shared information

Expertise

low | medium | high

low

Time horizon

short | medium | long

Timing: 1 hour +
Participants: 1 or more

Description

Folksonomy is a form of metadata (data about data) mapping, where individuals create classifications of meaning and attach it to data. These classifications are shared and form connections with other classifications to create metadata. In Folksonomies, categories are not prescribed hierarchies, meaning is interpretative and open to limitations ie misspellings, but crucially it introduces creative perspectives, randomness and unexpected linkages.

For example, Wikipedia provides three descriptors about a particular place: E83BJ, 17 and sunny. Here the metadata is the postcode, date (17th) and the weather. The three descriptors are data themselves, and can have another layer of metadata assigned to them. This could be the format of the date, conditions that make up the weather description and so forth. This approach helps to spot signals in the analysis stage of strategy.

Steps

1. Identify topic and potential websites to investigate. Some examples are as follows:

- Del.ici.ous: a social bookmarking website. Users apply tags to bookmarks (web pages) of interest to them. These tags are stored online, so that you can access them from any computer. You can also browse the bookmarks that others have tagged and share those that you have tagged.

- Flickr: a community-oriented, photo-sharing web site where users tag their own content – which can be made private or public.

- Slideshare: a community for sharing presentations which users tag for content, quality and usefulness.

- LinkedIn: a social network with a business orientation. Questions are put to communities, recommendations, opportunities, referrals and introductions are some of the core activities.

- Twitter: a social networking and microblogging service that be used to follow conversations on particular tagged topics and what topics are trending.

Equipment: Computer, Internet access

2. Browse and follow how individuals have connected topics.

3. Compare folksonomy information to that of more traditional sources, think about what differences and what similarities do you see?

Helpful hint

- Using folksonomies require participation, a little trust and some patience.

Gaming

Encourages participant interaction to explore
a topic, test coherence and indicate possible
outcomes for futures work

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 2 hours +
Participants: 9 or more

Description

Gaming involves getting participants to test decisions
about the future or develop ideas, in a controlled, risk-
free environment.

Gaming can be used to develop alternative
perspectives of the future, or to test the strengths and
weaknesses of other future thinking work, such as
scenarios.

Gaming types include:

- Roleplay
- War Gaming
- Property Mogul
- Ultimate Challenge

This approach helps to make sense of information n the
formulation stage of strategy.

Steps

1. Identify the topic or situation to be tested or developed.
2. Select which game is the most appropriate – games can be personalised for any situation or topic. The following is just one example of using roleplay to test three – four scenarios (you will need to develop scenarios in advance).
3. Invite participants to a session and brief them on the intention.
4. Consider three different stakeholders who are related to the scenario (for example: government, citizens, industry are all suitable candidates) and assign participants to these stakeholder groups and ask them to roleplay their perspective.
5. Carry out a SWOT analysis of the first scenario from the perspective of the stakeholders.
6. Use the SWOT to inform a discussion that determines the extent to which each stakeholder likes living and working in the scenario.
7. Ask stakeholders to should identify what they want government or the market to do in order to maintain or improve their level of satisfaction.
8. Step out of role and (imagining that the scenario is an accurate representation of the future) make a number of recommendations for current policy. These recommendations should reinforce the elements of the scenario that participants believe to be beneficial and should address those elements which are likely to be less beneficial.
9. Repeat steps five – eight for the other scenarios.
10. Compare the results of the different scenario discussions to identify robust policy challenges (ones which appear across all or most of the scenarios) and scenario specific challenges.
11. Carry out (if required) a plausibility and favourability vote and explore what the results mean for future policy activity.

Helpful hint

• Distributing information prior to the workshop can help participants make their assessments or decisions, and be more comfortable in their role.

Equipment: Props, Scenarios

Horizon Scanning

Reviews a broad spectrum of information from different sources and participant insights, to identify challenges and trends into the future

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 3 hours +
Participants: 10 +

Description

Horizon scanning is a structured, evidence-gathering process that engages participants by asking them to consider broad sources, typically outside the scope of their expertise. This can be summarised as looking ahead, beyond usual timescales and looking across, beyond usual sources to look at societal, technological, economic, environmental and political areas.

The approach looks for evidence at the margins of current thinking as well as in more established trends to develop insights. These can provide the basis for prioritising research and development programmes, gathering business intelligence, designing organisational scorecard objectives and establishing visions and strategies.

This approach helps to gather information in the analysis stage of strategy.

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Steps

1. Identify an area for discussion and formulate a question.
2. In a workshop setting, brief participants on the area and provide a focus and time horizon for the exercise. Allow the participants time to familiarise themselves and ask them to consider: What is the question trying to address and what criteria are important?
3. Provide plenty of reading materials and other sources (eg Internet access, newspapers, magazines, journals, previous studies and investigations) that are both on and off topic for the group to source insights from. Each individual selects a reading source/article.
4. Allow about an hour for individuals to work alone on developing an abstract of their reading source. Ask participants to include the following in their abstracts: the source of the article, the article's title, article's gist, personal insight the article caused.
5. As a group discuss the abstracts and capture them as trends on a timeline. It is fine that the article may trigger an insight in another area.
6. Analyse these trends by clustering, ranking or voting, considering aspects such as the relative impact of each trend on the area and its likelihood of occurring over the timeframe given.
7. The participants should agree on how to address the resulting trends in the following ways: Have the participants ask questions of the assembled work? Which trends feel more certain, so that any strategy should take them into account? Which emerging trends need monitoring? Where are the key areas of uncertainty that need further research? Where are the gaps? Are there new, interesting insight directions? What futures tools would be useful next?

Helpful hint

• Abstracts should be short and quick – the most important thing for this part of the approach is the insights that they trigger.

Equipment: Reading materials & sources, Internet access, Sticky notes, Timeline

Issue Trees

Identifies a high level question to address and logically structure sub topics and issues to explore

Expertise

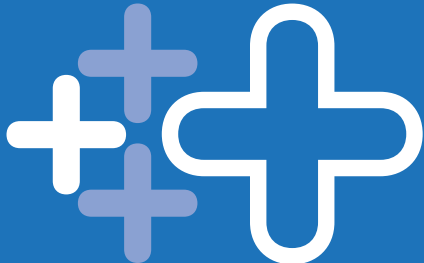low | medium | high

Time horizon

short | medium | long

Timing: 3 hours +
Participants: 6 – 12

Description

Issue Trees use individuals' views on a topic to establish a key question and sub-level of questions. The tree structure provides a logical sequence for addressing the question and potential workstreams. It can encourage the participation of stakeholders and broaden the knowledge of participants.

This approach helps to scope in the analysis stage of strategy.

Steps

1. Identify a topic for discussion and provide participants with a small amount of background reading.
2. In a workshop setting, ask participants to list one to three related issues of importance to them.
3. Compare these issues to build a long-list of issues.
4. Rewrite the issues as questions and then through discussion, reduce these to three to five levels of questions. These are the beginnings of the logic issue tress. The questions are considered in terms of dependency and logical 'trees' are trialled until agreement is reached.
5. Introduce the broad scope that has been identified. If still too broad continue the discussion until a clearer scope is agreed.
6. Capture critical issues through asking each participant to each select one - three issues they consider critical and to express these as questions.
7. In small groups discuss the various issues and what makes them important.
8. Consider the dependencies of the issues and whether a hierarchy can be applied to the issues. You can do this by asking: What consequences does this issue have?
9. Construct one or more issues trees of three to five levels. The most important question is the project scope. Each sublevel of two to three questions, should fully address its parent level. Test the logic and completeness of the question levels. Is the project aim suitably addressed? Does it cover the critical issues?
10. Select the final tree and agree on the final logic structure. Use the tree to identify workstreams and areas to research.

Helpful hint

- Issues trees are generally used at the start of a project to provide structure for teams who are in the early stages of building their understanding of the subject. It may be, that some output has a limited shelf life and that the questions will change as the team's knowledge of the subject area develops.

Equipment: Issue Trees chart, Whiteboards, Sticky notes, Pens

Modelling and Simulation

Enables ideas to be made real and tested,
and through representing a system can show
indicative relationships in a risk free environment

Expertise

low medium **high**

Time horizon

short **medium** long

Timing: 30 days +
Participants: 10 +

Description

Modelling and simulation are used to test (or quantify) hypotheses and ideas. A model is a representation of a system, service or product, typically at a particular point in time. A simulation 'acts' on this model, allowing the operator to appreciate interdependencies and their relative weightings in a variety of conditions.

Quantitative models, such as for testing systems, can be mathematical and express numeric results – which are particularly useful for developing and testing policy options. Other more qualitative models, such as for testing services or products, tend to be more appropriate good for exploring interdependencies, causality and behaviour, and can be used to consider alternative scenarios and to explore hypotheses.

This approach can help make sense of ideas in the formulation stage of strategy.
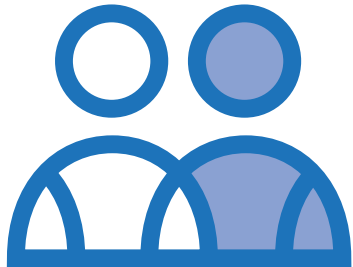
Steps

1. Set a clear, unambiguous question for the model to address. Spend time developing this question – you can use Issue Trees or Seven Questions to help.
2. Understand the core components of the model and its interconnectedness within a system before constructing the model. System Maps can help to understand relationships and dependencies and will also help to develop any briefs needed for partners in the modelling and simulation.
3. Gather research on raw data and benchmark other models. This can be used to test early models and ensures robustness and highlight tricky areas.
4. Work with stakeholders to develop the model and run the simulation with. Partners can include academic institutions, humanitarian organisations, technology suppliers and agencies (public and private), individuals
5. The partner should pilot the simulations against a roadmap, vision or scenario.
6. Modify the model as a result of the simulation.
7. Construct the final model.

Helpful hint

- Modelling and simulation can be cheap or expensive depending on the approach taken.

Equipment: Depends on model or simulation approach selected

Narrative

Develops stories to convey messages, give meaning to contextual information and capture engaging perspectives

Description

Narrative can help describe complex environments, to convey key issues in a memorable way or bring relevance to a topic. Stories about the future possess a solid base of historic or current reality, while reflecting aspects of a desired, attainable or possible future. Narrative will typically contain the elements of: a setting, characters (possibly an identifiable hero), conflict or situation to be addressed, key event, a pivotal moment or climax and a resolution.

Story creation can be done individually or in groups, can be free form or framed with parameters. Broad categories for stories include:
- A day in the life
- My perfect day
- In a perfect world
- Headlines for the future
- The future backwards

This approach helps to make sense of ideas during the formulation stage of strategy.

Steps

1. Identify a topic and state the parameters and timeframe.
2. In a workshop setting, divide participants into groups and each group selects a category to develop their narrative eg Headlines for the Future. Use key questions, important themes and story construction elements to consider all aspects of the narrative.
3. Depending on the category consider some of the following ideas:

- **A day in the life of:** What do you do at the start of the day? What job do you have and what do you do there? How do you travel? What do you eat, why and where? What do you do for leisure time, who do you meet and talk to? How do you rest and when? What is important to you and is it the same as today? What products and services do you use?
- **Headlines of the future**: Is this headline catchy enough to attract the reader's attention? Is the story compelling enough to keep the reader's attention? Introduce the story in a subtitle in one or two

sentences and then a cohesive description in a few paragraphs. Think about what it is news, and why it has the headlines..

4. Bring the groups back together and ask participants to share their stories. Discuss key insights of the storyteller and listeners.
5. Use the stories to enrich one or more futures descriptions and/or to investigate any potentially important areas they identify.

Helpful hints

- If developing the whole story seems daunting, break it down and develop parts of the story in chunks using sticky notes to mark key points.
- Narrative is not a common tool and the process can feel uncomfortable for some participants. At an appropriate interval, tell a compelling story to the participants.
- Do ask questions about obvious gaps in narratives.

Equipment: Flipcharts, Timescale, Sticky notes, Pens

Plausibility Matrix

Compares different scenarios to identify which futures are favourable and highlight the strategic choices facing decision makers

Expertise

low — **medium** — high

Time horizon

short — **medium** — long

Timing: 1 - 3 hours
Participants: 10 - 16

Description

Plausibility Matrix helps groups familiarise themselves with an existing set of scenarios and explore what they mean for strategy or policy development.

The approach uses a series of questions to highlight the extent to which participants agree about the future. It is designed to reveal differences of opinion and to highlight the strategic choices that need to be made to ensure that policies or strategies are fit for the future. Outputs can feed directly into other discussions, or the exercise can simply be used to start people thinking. The matrix can also be used at the end of a scenario development workshop to inform the next stage of strategy.

This approach helps to agree responses in both the analysis and formulation stage of strategy.

Steps

1. Identify a topic and select several scenarios.
2. At a workshopw, introduce the scenarios individually and ask the group to spend ten minutes discussing what they like and don't like about the first scenario.
3. Spend five minutes noting likes and dislikes on a flipchart.
4. Introduce the other scenarios in the same way.
5. Draw the plausibility matrix – hiding the column headings – on a flipchart. Invite the group to vote for each column by a show of hands and only reveal the question as you get to each column. The questions (which will need to be customised) are:
- which scenario is most plausible
- which scenario is most favourable to (say) citizens
- which scenario is most favourable to (say) business
- which scenario is most favourable to your organisation
- which scenario is closest to now
- which scenario is closest to the future that each participant aspires to
- which scenario is closest to the future that your organization is knowingly or unknowingly pursuing
- which scenario is closest to the future that government policy is leading to.
6. Consider the results and invite the group to reflect on what they mean for the team's activities and strategy.
7. Write up the vote and offer a more detailed analysis of the outcome. Where possible, identify the strategic questions and challenges emerging from the discussion

Helpful hint

It is important to remind people that the vote is not scientific. It is a subjective analysis designed to illustrate differences of opinion about the future.

Equipment: Plausibility matrix, Scenarios

Reverse Engineering

Identifies current and future threats and opportunities and how to manage them through setting an agenda for forward action

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 2 - 4 hours
Participants: 12 - 30

Description

Reverse engineering is an approach for identifying events that are certain to occur and that will have a high impact on a team or a department. The approach uses scenarios to identify short-term threats, opportunities and issues that need to be addressed, as well as numerous medium to long term issues to track.

This approach helps to agree responses in the formulation and implementation stages of strategy.

Steps

1. Identify a topic and select scenarios.
2. In a workshop setting, split participants into 'scenario teams' to work on different scenarios.

Part 1: Identify and map events

3. Teams discuss the strengths and weaknesses of their scenario.
4. Each team identifies the events that need to occur if the scenario is to happen. To facilitate you can ask everyone to think of five events that need to occur.
5. Participants should then map events on a matrix according to their impact on activities and the certainty of their occurrence. Teams should come to a consensus over events and ensure they don't sit between quadrants.

Part 2: Identify opportunities and threats

6. Each team identifies how to consider the certain, high-impact events and identify:
- whether these events are likely to occur in the short, medium or long term
- whether the impact is positive or negative
- what (if any) indicators might signal that the event is imminent
- how the department, the team or stakeholders need to respond
7. Each team then identifies indicators to track for uncertain, high–impact events, considering:
- whether the uncertainty is high, medium or low
- if the event does do occur, whether the impact will be positive or negative
- whether the department, the team or stakeholders are prepared if the event does occur
- what indicators you should track to monitor whether the event is going to occur.
8. Capture the content that has been discussed to inform strategic planning or to set an agenda for operational activities.

Helpful hint

Organise the report around timescale – short, medium and long term - and the associated opportunities and threats in each case.

Equipment: Flipcharts, Pens, Sticky notes, Scenarios, Matrix

Roadmaps

Indicates future developments using a variety of techniques, and formulates an outline response and action plan with objectives

Expertise

low   medium   **high**

Time horizon

short   **medium**   long

Timing: 3 - 8 weeks
Participants: 5 or more

Description

Roadmaps are a technique that combine research, trends, applications, objectives and action plans and are particularly useful for science and technology.

A roadmap shows the development strands of key elements, their connections with other strands, and potential applications that result. The roadmap also outlines a response to this environment with an overall action plan, detailing key objectives to be met.

This approach helps agree responses in the formulation and implementation stages of strategy.

Steps

1. Scope the project to set the boundaries of investigation, thinking about: the specific area, timeframe, level of detail needed and participants required. Participants could be an expert group or participants for a workshop. Ensure while scoping the project you are answering the question 'why'.

2. Gather research on the area with a view to uncover the key drivers that underpin the topic and also potential developments. The research can be desk based, from workshops, in a collegiate environment, ethnographic or a combination of these approaches and should be wide ranging to ensure you uncover current and potential future knowledge and developments.

3. Draw a timeline adding trends and developments. Establishing timelines for potential discoveries is key to this approach. When expressing technologies on the timeline, it is useful to show their lifecycle. The timeline should also consider key actors (eg looking at communications, twitter, text messaging and email will all have different relevancies and lifecycles for different age groups), resource requirements and their availability. The construction of timelines is ideal material to address in a workshop setting.

4. A validation process, through sharing the research with your expert group, ensures that the timelines and relationships are representative of the opinions and research, and facilitates any changes that need to be made.

5. The final stage is to build an action plan that illustrates key objectives necessary for success within this environment and identifies clear routes for achieving these objectives.

Helpful hint

- Before starting the process, think about how you will use, interact and display your roadmaps, as this may provide design steerage.

Equipment: Access to research

Scenarios

Structures thinking about the future to plan for future uncertainties and imagines better futures that inform decision-making today

Expertise

low medium **high**

Time horizon

short medium long

Timing: 2 months +
Participants: 8 or more

Description

Scenarios are a way to structure, think about, and plan for future uncertainties. It requires the articulation of more than one possible future (typically three or four) and is a robust method to communicate strategy.

It is important to not think of Scenarios as predicting the future, rather they provide the means to consider today's policies and decision-making processes in light of potential future developments.

This approach helps to make sense of ideas in the formulation and implementation stages of strategy.

Steps

1. To fully engage stakeholders conduct three workshops over a number of months. (Workshop 1: driver identification, Workshop 2: scenario construction, Workshop 3: feedback developed scenario narrative and seek further input).

2. Identify a topic, scope, timescale and desired outcomes of the exercise.

3. Invite participants, who ideally should be experts or stakeholders, and fully brief them on the proposed activities.

4. Gather research on the area through a combination of primary research (including interviews and ethnographic research from participants and non participants) and desk research to fill any gaps identified.

5. In a workshop setting, construct the scenarios focusing initially on the drivers. Reduce the number of drivers through methods such as ranking, voting, dialogue and de-selection to leave the most critical drivers. Assess these remaining drivers in terms of impact and uncertainty.

6. Construct the scenario frame by identifying the axis that will comprise the scenario matrix - it is important to select axis that are independent of each other.

7. Cluster the most critical uncertainities (high impact and high uncertainty) into groups of 5-10.

8. Test the scenarios firstly as to whether they offer any additional insights and compare against existing policy areas. You can test scenarios through scenario analysis tools including: gaming, windtunnelling, plausibility matrix or reverse engineering.

Helpful hint

- Brief participants that scenarios are not about prediction, but preparation to avoid issues like the development of good versus bad scenarios.

- Judgement remains a crucial element of the scenario process, therefore, the level of knowledge that participants bring to the exercise will have some bearing on the robustness of the output.

Equipment: Scenario matrix frame, Whiteboards, Flipcharts, Pens, Sticky notes

Seven Questions

Asks open-ended questions to draw perspectives on the future from key individuals

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 2 days +
Participants: 6 or more

Description

Seven Questions draws information from key individuals, such as senior managers and decision makers, regarding the future and can be used as an alternative to workshops.

The seven open-ended questions are designed to explore information that the interviewee may have about the future and to encourage them to place themselves in the future.

This approach helps to scope in the analysis stage of strategy.

Foresight
Government
Office for Science

Steps

1. Define the scope of study. Select interviewees (for example: decision makers, relevancy to project).and brief them on the project - explaining that views are anonymous.

2. Build the questionnaire using the following as a basis:

- **The Vital Issues** : Would you identify what you see as the critical issue for the future? Suppose I had full fore-knowledge of the outcome as a general clairvoyant, what else would you wish to know?

- **A favourable outcome:** If things went well, being optimistic but realistic, talk about what you would see as a desirable outcome.

- **An unfavourable outcome:** As the converse, if things went wrong, what factors would you worry about?

- **Where culture will need to change:** Looking at internal systems, how might these need to be changed to help bring about the desired outcome?

- **Lesson from past successes and failures:** Looking back, what would you identify as the significant events which have produced the current situation?

- **Decisions which have to be faced:** Looking forward, what would you see as priority actions which should be carried out soon?

- **If you were responsible:** If all constraints were removed and you could direct what is done, what more would you wish to include?

3. Conduct the interviews (about 40-80 mins each): ask each question in turn and take detailed notes.

4. Highlight common key issues across different interviewees – noting frequency, emphasis given, disagreement/agreement amongst interviewees and interviewer's intuition. Cluster key themes and list into dependent themes and over arching themes.

5. Compile the material using non attributed quotes to illustrate headings and themes

Helpful hint

The approach gathers personal opinions to understand what issues stakeholders consider important, not to develop knowledge about drivers.

Equipment: Flipcharts, Sticky notes

System Maps

Describes complex systems by mapping key elements and their relationships, and can be used to test interventions

Expertise

low medium **high**

Time horizon

short medium long

Timing: 2 weeks +
Participants: 8 or more

Description

Systems mapping is the process of representing a system (a set of elements and the relationships between them) and illustrating how events in one part of it affect other parts.

Whole systems generally exhibit properties or behaviours that cannot be predicted from the properties of the individual parts and system mapping aims to characterise how changes in one area of a system can affect another area – and thus where opportunities exist to intervene. Systems maps can summarise and communicate current trends, relationships and constraints that may influence the future behaviour of a system.

This approach helps to scope in the analysis stage of strategy.

Foresight
Government
Office for Science

Steps

1. Identify the system to be mapped.
2. Develop the foundations of the systems map by identifying the basic elements of the system through a workshop that brings in key stakeholders to identify the different elements and relationships.
3. Sketch out a preliminary diagram, called a core causal loop diagram, that show the elements as boxes. Writing the elements on sticky notes and use a whiteboardso you can move elements around and redraw relationships.
4. Map the relationships between these elements through linking arrows. It is useful to show the direction of relationships through these arrows. These causal relationships can be positive or negative.
5. Evaluate the pilot core causal loop diagram by investigating: the direction of causality, the strength of each link, the impact of each link on the dynamics of the system as a whole, the certainty about each causal link, the key mechanism that explains the causal link.

Equipment: Whiteboard, Pens, Sticky notes

6. Using the outputs from the evaluation of the pilot diagram, develop an extended systems map which should describe the key properties and domains within the system. This stage may require additional research, collaboration with experts or workshops to characterise emergent parts of the system that have not been fully described in the earlier stages. Detailed review of the evolving map can be carried out using questionnaires and interviews.

Helpful hint

- A positive causal relationship means that, if one factor changes in a particular way (e.g. it increases) the factor it has a relationship with will also increase. A negative causal relationship means that an increase in one factor will result in a decrease in the second factor; or vice versa.
- The relative weightings of linkages requires some judgement of the participants and leaves the outcomes subject to interpretation by others.

Trend Analysis

Studies past performance to indicate potential future trends, their relationships, and underlying drivers

Expertise

low | medium | high

Time horizon
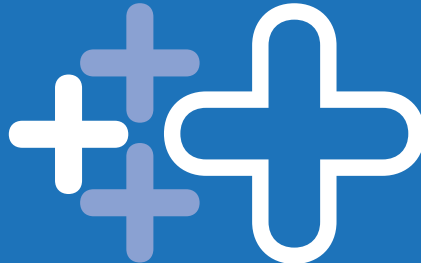
short | medium | long

Timing: 1 day +
Participants: 10 +

Description

Trend analysis is a study of historic and current performance, events and trends in order to indicate possible future trends. It aims to understand underlying drivers, investigate trend longevity and access the impact of trends. Trends are usually described as short, medium or long term.

This approach helps to watch trends in the analysis stage of strategy.

Foresight
Government
Office for Science

Steps

1. Set the boundaries of the investigation: time allotted, sources, areas to research and degree of impact.
2. Assign areas of investigation to a research team.
3. Conduct research by locating information, observation, cross-referencing and drawing synthesis. Compile trends onto cards that that outline: trend title, description, underlying causes, potential impact areas
4. Share findings with stakeholders - a workshop setting is ideal – to assess their importance and impact, and to highlight underlying causes. During the workshop initially lay out the trend cards on a table and invite participants to view the trends.
5. Ask the participants to assess the importance of the trends and gradually discard trends. Capture discussion and comments on trends.
6. With the remaining trends, ask the participants to cluster related items, around a higher order theme - this indicates a potential driver. Ask participants to name the driver - it is OK too if one of the trends in a cluster is elevated to that of driver. Capture discussion on relationships between trends and clusters.
7. Revise the trends to include new or restated observations of the participants and circulate to all stakeholders.
8. Develop response by focusing on the most critical trends and their underlying causes.

Helpful hint

- Help participants to question the underlying causes of trends by looking at where trends have historically deviated from their normal pattern and what conditions may have influenced this.

Equipment: Access to research, Flipcharts, Pens

Visioning

Communicates a shared, desired future through capturing and reflecting the views of stakeholders and setting an agenda for forward action

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 1 day +
Participants: 10 +

Description

Visioning is used to construct a single, preferred future in a clear and succinct manner. It can create a set of common aims and objectives for a project and describe what the future will be like if they are delivered, to provide a shared aspirational goal for participants.

The technique works well for short workshop-based activities and can also be scaled up to engage a wide number of stakeholders over time.

This approach helps to make sense of ideas during the formulation stages of strategy.

Steps

1. Invite stakeholders to a workshop.
2. Ask participants to use storytelling or brainstorming to describe and outline a desired end state/future in a clear and succinct way through capturing and reflecting the views of all stakeholders. You could approach this by thinking 10 years into the future after you have successfully completed a project and ask participants to describe what it looks like.
3. Share and refine these visions with participants and stakeholders and to add more detail to the structure – but not to the end state/future. This will involve debate, negotiation, synthesis, reduction and elimination between participants.
4. Personalise the vision to ensure that it is in touch with real issues and to build ownership among stakeholders. Participants should build stories of themselves or their organisation inside the vision, noting key differences between now and the future.
5. Participants identify key steps and also the barriers and enablers that could affect the vision.
6. Define guiding principles and behaviours - these are a small collection of memorable expressions that represent the inherent behaviours that stakeholders agree they will adopt to deliver the vision. They are necessarily broad, but entirely interpretable.
7. Describe resource needs and gaps through identifying current capabilities of stakeholders and their organizations. Think about human, financial and technological resources.
8. Construct a delivery plan and indicators of success.

Helpful hint

• During the workshops get participants to move between spots labelled 'now' and 'the future' when they are describing these different timeframes.

Equipment: Flipchart, Pens, Sticky notes

Windtunnelling

Asks open-ended questions to draw perspectives on the future from key individuals

Expertise

low | medium | high

Time horizon

short | medium | long

Timing: 0.5 days +
Participants: 10 +

Description

Windtunnelling tests how future changes in the environment may affect individuals' and organisations' ability to deliver a particular project or strategic objectives. Participants imagine how they would meet their objectives in different scenarios to identify critical planning points where strategy needs to be flexible and adaptable.

This approach helps to agree responses in the formulation and implementation stages of strategy.
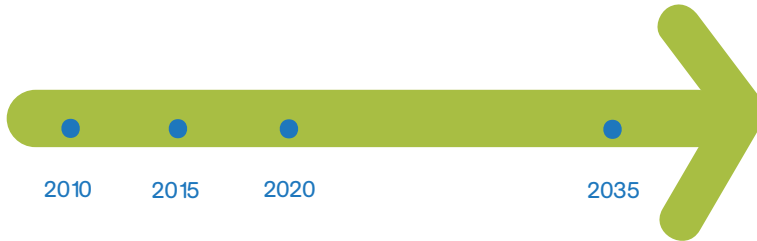
Steps

1. Develop new scenarios, or work with suitable existing ones.
2. Clarify the project idea or desired outcome to be tested with participants so they understand the project, policy or strategic goal and the strategy for delivering it. If objectives have already been developed, circulate these to participants.
3. In a workshop setting, examine how the external conditions described in each scenario affect delivery of the desired outcome. At the beginning of the session split participants into two groups and assign each group a scenario. They should consider the following questions: whether the desired outcome is still achievable and desirable, whether the desired outcome needs to be modified in any way, how the desired outcome should be achieved in this scenario, how the current strategy for delivery needs to be modified.
4. Identify the implications for strategy implementation by asking participants to discuss and feedback on the findings.

5. Draw these conclusions together to assist delivery of the desired outcome.

Helpful hint

- The purpose of windtunnelling is to test the suitability of existing strategic objectives against different futures. This stimulates discussion on their current viability. Any scenarios or futures used in the process are not seeking to predict the future or future objectives.

Equipment: None required

Timeline

2010   2015   2020   2035

Issue tree

Level 1	Level 2	Level 3
		Q1A
	Q1	Q1B
		Q2A
Q **Main Question**	Q2	Q2B
		Q3A
	Q3	Q3B

Questions 1A and 1B address question 1, 2A and 2B address question 2, and so on

Matrix chart

Barriers

In our control

Outside our control

Enablers