

BEYOND STRATEGIC PLANNING

A FORESIGHT TOOLKIT FOR
DECISION MAKERS



ABOUT CALIFORNIA 100

The California 100 Initiative envisions a future that is innovative, sustainable, and equitable for all. Our mission is to strengthen California's ability to collectively solve problems and shape our long-term future over the next 100 years.

California 100 is organized around 15 policy domains and driven by interrelated stages of work: research, policy innovation and engagement with Californians. California 100's work is guided by an expert and intergenerational Commission. Through various projects and activities, California 100 seeks to move California towards an aspirational vision—changing policies and practices, attitudes and mindsets, to inspire a more vibrant future. california100.org

ABOUT SOIF

School of International Futures (SOIF) is a global non-profit collective of practitioners in strategy and policy for current and future generations. Our vision is a better, fairer and more sustainable world for current and future generations. We achieve this by empowering people to use participatory futures and foresight to drive societal transformation through their organizations, communities and countries. soif.org.uk

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DISCLAIMER

The contents of this toolkit reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This toolkit does not constitute a standard, specification, or regulation.

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FOREWORD

“CHANCE FAVORS ONLY THE PREPARED MIND.”

Louis Pasteur’s famous maxim—urging scientists to make abundant observations in order to draw insights from anomalies—serves as important guidance to organizational leaders today who are navigating critically uncertain futures.

It is no exaggeration to say that we live in a period of major disruption and uncertainty. COVID-19 has semi-permanently altered the ways we live, learn, eat, and work. Climate-related challenges, such as extreme heat and coastal flooding, call into question the continued viability of entire cities and regions. And advancements in technology, from genetic medicine to artificial intelligence, offer considerable promise and risk, for our lives as well as our livelihoods.

While we have much to be concerned about our long-term futures, we also have ample cause for hope. Hope that is embodied in a new crop of public officials, organization leaders, and everyday residents. In people coming together, unflinching in their determination to tackle grand challenges rather than ignoring them. Leaders who demonstrate and inspire a refreshing openness to new ways of learning and doing.

Strategic foresight, as the Organisation for Economic Co-operation and Development (OECD) puts it, is “a structured and systematic way of using ideas about the future to anticipate and better prepare for change.” Strategic foresight is not new. Its modern development traces back to the mid 1940s and RAND Corporation’s work on the United States’ Cold War strategy, and to the 1970s, as Shell Corporation’s methods of scenario planning helped it navigate the 1973 oil crisis more effectively than its competitors.

Still, strategic foresight remains a privileged enterprise. It is still largely confined to global corporations and select national agencies and international organizations. Even though community organizations, government agencies, philanthropies, and everyday citizens have an enormous stake in our collective future, most of us are unprepared to engage meaningfully with the seismic shifts that are underway—in our economy and society, planet and polity.

California 100 and the School of International Futures (SOIF) are collaborating together because we both believe fundamentally in the need to democratize the work of futures thinking and futures design. The challenges facing our people and the planet are too enormous to confine strategic foresight for the privileged few.

This toolkit is intended as a primer on strategic foresight, with pragmatic tools that enable decision makers and strategists of various stripes—from within government agencies and philanthropies, to community organizations and educational institutions—to be better prepared for future success under conditions of massive uncertainty and rapid change.

You might ask, “What is the best way to engage with this toolkit? Should I read it cover to cover? Or can I just jump in and read whatever strikes my fancy?”

We say that the journey is up to you. Some of you might wish to read the entire toolkit, including additional resources, before you dive into any of the examples. Others might wish to try some quick and fun exercises, like the Future News Headline exercise, to whet your appetite for futures thinking and futures design.

Whatever your approach, we have three asks:

- 1. Try out a few tools**, preferably with a friend or colleague (or two, or three!)
- 2. Take time to discuss** new insights and perspectives with others in your organization or community
- 3. Reach out and join us!** We are part of a fast growing practitioner community from around the world seeking to build more just, equitable, and sustainable futures

Thank you, and we can’t wait to see you along our journeys,

Cat and Karthick

Cat Tully is managing director of School of International Futures (SOIF).

Karthick Ramakrishnan is executive director of California 100.

BEYOND STRATEGIC PLANNING: A FORESIGHT TOOLKIT FOR DECISION MAKERS

THIS TOOLKIT IS DESIGNED FOR LEADERS WHO ARE LOOKING TO APPLY FORESIGHT TO THEIR WORK.

It provides a brief introduction to strategic foresight and how it can be used to support decision-making. It contains suggestions about how to get started applying foresight for impact.

It builds on insights from California 100's work to envision and realize an aspirational future for the state of California, and SOIF's experience working with governments, civil society, and other sectors internationally.

It will not answer all of your questions, but will help you to understand what foresight is, and how it can be used to support strategic planning, policy-making and leadership under conditions of uncertainty.

This toolkit introduces a simple, pragmatic approach to using foresight in communities and organizations.

It helps you to start to connect into a broader community of practice, and to access tools, resources and approaches that you can begin to use on a daily basis.

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1 UNDERSTAND WHAT FORESIGHT IS AND HOW IT CAN HELP YOU



WHY THE FUTURE, WHY NOW?

FORESIGHT: AN ESSENTIAL SKILL FOR DECISION MAKERS.

Strategic foresight is a critical tool for effective decision making and effective organizations. It is an organized, systematic process for engaging with uncertainty and looking beyond the expected.

By thinking systematically about the future, strategic foresight helps you to understand and engage with complexity, to build resilience, set your strategic direction and improve policies, plans and strategies.

You can usefully apply foresight approaches whether working at a global or regional level, in cities, as teams or within communities. You can also apply foresight at a personal level by building individual futures literacy and understanding.

It is not about predicting the future, but about understanding the current and future contextual and operating environment. Insights gained from foresight equip organizations to recognize emerging threats and opportunities, and to respond to them by improving their competitiveness, resilience and agility.

WHY THE FUTURE, WHY NOW?

We are living in an increasingly complex and non-predictable world where change is not the exception but the new norm. This brings a higher degree of uncertainty and volatility.

FORESIGHT BRINGS THREE KEY BENEFITS

- **Build vision** Make strategic choices to shape the future you want
- **Manage risk** Build preparedness for alternative possible futures
- **Increase awareness and agility** Create future-ready and alert organizations that can adapt as the future evolves

Governments, communities, and societies are simultaneously navigating local and global challenges, climate emergencies, rapid technological transformations, demographic and value shifts, and challenges around truth and democracy.

While we may be able to anticipate some of the impacts that these challenges will have on society over the coming years, we also know that highly complex problems can only be solved using processes that are systemic, emergent, and participatory.

We have to collectively find new ways to think differently about change, anticipate disruptions, and seize new opportunities. In order to succeed, we need to move away from linear views of the future and traditional planning approaches, towards anticipatory governance.

This requires strategic foresight—an understanding of what might change and the ability to navigate uncertainty under alternative futures. We also need new governance approaches that embrace complexity, underpinned by values of participation.

TRANSFORMATION REQUIRES A PERSONAL, ORGANIZATIONAL AND SYSTEM-WIDE JOURNEY.

Ensuring effective long-term decision-making is difficult. It requires leaders and decision makers across public, private and civil society to be incentivized, and for all citizens, residents, and stakeholders to have a say about the future.

The SOIF triangle, depicted on the next page, sets out three key areas for reimagining effective democratic practice for the coming decades. It recognizes that meaningful and enduring change requires action and collaboration across sectors, and among citizens and institutional leaders.

WHY THE FUTURE, WHY NOW?

THE SOIF TRIANGLE

Citizens are involved in shaping their desired futures

Citizens – especially next generation voices – have the power to make and shape their desired futures by participating in decision-making

Organizations and sectors are prepared for the future

Organizations, social movements and sectors are able to navigate uncertain futures

**Fairness
for current and
future generations**

Leaders make intergenerationally fair decisions

Leaders are supported and enabled to take the interests of future generations into account in their decisions

Image: SOIF's anticipatory governance triangle re-imagines effective democratic practice for the coming decades. It aims to unlock effective transitions and long-term decision-making by ensuring: citizens are involved in shaping their desired futures; organizations and sectors are prepared for the future; and leaders can make intergenerationally fair decisions.

FORESIGHT FOR TRANSFORMATION

1. CITIZENS ARE INVOLVED IN SHAPING THEIR DESIRED FUTURES

The act of reflecting on the future collectively — and the capability to do so — is valuable for all communities and countries at all times. Strategic foresight is not a luxury; it is a necessity. It helps build vision, resilience and empowerment in an uncertain world

It is important to ensure citizens are involved in shaping their desired futures, and that they have the power to make and shape their desired futures by participating in decision-making. This process of collective reflection on the future enables resilience and empowerment.

You can read a bit more about how different countries and communities have used foresight, including in Aruba to engage over 60,000 participants, and how Oman developed participative scenarios as part of Vision 2040 ([page 14](#)). For other inspiration see the [Building Better Futures: toolkit](#)¹ from WCVA and SOIF based on community futures work in Wales.

2. ORGANIZATIONS AND SECTORS ARE PREPARED FOR THE FUTURE

Foresight can be applied at an organizational and sectoral level, by building the capability to be 'futures-prepared' into programs, policies, and teams. And it can be applied in engaging with policy and strategy processes, serving as a vehicle to bring different stakeholders together to design desired futures and understand the ways to achieve them.

Incorporating strategic foresight into your practice can be a fundamental skill for fostering both resiliency and innovation. It can help you view the future in new ways, imagining new possibilities and acting on opportunities.

You can read how the Canterbury District Health Board in New Zealand embraced foresight to transform their health system on [page 10](#), and how leadership-backed foresight transformed strategy for the International Federation of the Red Cross on [page 11](#).

Section 4 provides more guidance on how to start to integrate foresight into your work, building your capacity and capability as an ecosystem.

3. LEADERS MAKE INTERGENERATIONALLY FAIR DECISIONS

Decisions being made today affect current generations as well as future ones. Leaders need to be supported and enabled to take the interests of all generations into account in their decisions.

Intergenerational fairness requires approaches that help leaders to understand different views about the future, and what different generations want. It requires engagement through dialogue, deliberation and participation.

Intergenerational fairness is key to unlocking the transformative potential of tomorrow, empowering citizens, and holding today's decision makers accountable to future generations.

There are practical ways to do this, including intergenerational assessment and dialogues. More fundamentally, intergenerational fairness can also be embedded as a principle in governance structures.

Read more about intergenerational fairness on [page 15](#) or visit soif.org.uk/igf

We are part of a wider community of interest and advocacy

As a decision maker, your role is to be both an ambassador to the past and a midwife to the future. To create the conditions for change.

This requires movement building and field-building, as well as weaving networks that embrace, honor, and support champions for transformative change across the country and around the world.

You can find more about this approach and suggestions for connecting with existing communities of practitioners in [Section 5](#) of this toolkit.

HOW TO THINK ABOUT THE FUTURE

Strategic foresight is not about predicting or forecasting the future. It is both art and science that together make possible the craft of foresight. Achieving impact requires a good understanding of the tools and techniques of strategic foresight, as well as the judgment needed to use them effectively. It also requires a mindset and cultural shifts in mindset and organizational culture.

The benefit of strategic foresight is that it enables the stakeholders involved in a decision to engage more fully with complexity and uncertainty. It creates an explicit and often overlooked step in the strategic planning process where decision makers' assumptions about the future can be challenged.

As humans, we often jump to conclusions about the shape of the future. We rely on mental heuristics, commonsense approaches to problem solving based on past experiences, to make speedy decisions. In the face of overwhelming uncertainty, these mostly encourage us to assume that tomorrow will be like today.

This status quo bias is often implicit and unquestioned within organizations, professional groups, and other communities.

Impactful futures work happens when you keep an open mind. You must embrace uncertainty as a fact of life, instead of something to fear. Even the best-laid strategic plans cannot account for all the unpredictable twists and turns facing an organization or agency.

HERE ARE SOME POINTERS ON HOW TO THINK ABOUT THE FUTURE:

Take time seriously: We often think of time in a linear way, with the past leading to the present and then the future. Futures work can challenge our conventional view of time and the stories we tell about the future. A key part of this mindset shift is understanding our biases, and acknowledging that our experience of the past will shape our thinking about the future. The stories of the past are often indistinguishable from stories we tell about the future.

Be open to pattern sensing: This is a way of thinking that acknowledges we can look for and identify patterns using the knowledge we have at our disposal, even if there is no comprehensive data set available. Often exploring the future is about taking small leaps based on weak signals. You won't always take a data-driven approach. And that's okay.

Explore complexity and interdependencies: It is important to think not only about the issues and problems your organization is grappling with, but also how these issues interconnect and interplay *within* your organization and beyond. A project may be about the future of a specific organization, policy or population, but its future is built by its interactions with other systems. This is about understanding your place in the wider system, and where your leverage points are—getting clear on what is under your influence, and what is not.

Push the limits of critical uncertainties: These are unpredictable drivers that have a significant impact on the outcome. Pattern-sensing moves beyond logic and data to explore a divergent range of possible outcomes in these unpredictable factors.

Seek interesting perspectives: Foresight gives us the legitimacy to 'think together' by respecting and seeking out diverse perspectives. The act of reflecting on the future collectively is not a luxury; it is a necessity. It helps us build vision, resilience and empowerment in an uncertain world. It allows us to widen our perspective, building understanding and avoiding bias.



The California 100 logo was designed to play with perspective..

Build agency: The ultimate aim of strategic foresight is to improve decision-making today for a better future. The process of collective reflection and imagination helps people to have more agency over their futures.

CASES: ORGANIZATIONS AND SECTORS ARE PREPARED FOR THE FUTURE

CANTERBURY DISTRICT HEALTH BOARD, NEW ZEALAND



Transforming a ‘broken system’ to a world-leading one. In the mid-2000s, the District Health Board (DHB) for Canterbury, New Zealand, calculated that, if nothing changed, Canterbury would need another hospital the size of the 500-plus bed Christchurch hospital and near-doubling of trained staff in the district by 2020. Neither the money nor the staff would be available.

In 2006, the Chief Executive of the District Health Board was convinced that Canterbury could find a way through if the different parts of the health and social care system—whether public employees, independent practitioners or private contractors—recognised that there was ‘one system, one budget’.

As part of developing the strategy for this, the Health Board held an event called ‘Showcase’. This was aimed at hearing from those who were in a position to make a difference to the system.

It took place in a warehouse in which people were walked through various ‘scenes’ that set out the challenges facing the system and they were asked: How would you like to be treated? Who would you work with to achieve that? Their ideas were captured by a graphic artist. More than 2,000 people out of the 18,000 working in the district health system attended.

From 2008, his successor continued the work to rebuild and evolve a “broken system”, fragmented by numerous stakeholders pulling in different directions. The new CEO understood the need to regain trust of the CDHB across the wider community, use relatable language, and build a social movement that engaged various cultures and – together – created a simple, person-centric vision for a better health service.

Image: A tram in Christchurch, New Zealand.

By Brayden Gray

Scenarios are thus the most powerful vehicles... lifting the 'blinders' that limit our creativity and resourcefulness.

Peter Schwartz

KEY INSIGHTS

- It took courageous, selfless and adaptive leadership to first change direction and then accelerate the evolution.
- The process centered around reestablishing common goals and determine a future vision to work back from.
- The process made the community part of the solutions and ownership.
- Experiential workshops were risky, but a huge success.

READ MORE

- You can read the full case here: [A Canterbury Tale: Case study on leadership.](#)² SOIF
- [The quest for integrated health and social care.](#)³ The King's Fund.

Image: These images were produced for the Canterbury DHB Transition plan. They depict how Canterbury Health District could move from a broken (top) to an integrated (bottom) health and social services system. Reproduced with permission from Canterbury DHB.



CASES: ORGANIZATIONS AND SECTORS ARE PREPARED FOR THE FUTURE

HUMANITARIAN FUTURES AT IFRC.



HOW LEADERSHIP-BACKED FORESIGHT TRANSFORMED STRATEGY FOR THE IFRC— THE WORLD'S LARGEST HUMANITARIAN NETWORK

The Geneva-headquartered International Federation of Red Cross and Red Crescent Societies (IFRC) supports 192 member National Societies. It focuses on peacetime disaster preparedness, relief and long-term disaster-recovery planning, plus the healthcare needs of vulnerable people. Every year approximately 160 million people benefit from its services.

In the 2000s, IFRC's leaders—including former Secretary-General Elhadj As Sy and ex-Under Secretary General for Partnerships Jemilah Mahmood—recognised that a more cohesive, collective solution was required to keep pace with the fast-changing context of humanitarian need with limited resources.

Image: Photos from escape to the future. An immersive humanitarian strategy game. For more visit <https://whatfutures.org/>

Understanding their duty as stewards of the IFRC's performance in the present and future, they courageously set about transforming the organization to enable it to continue fulfilling its mission in generations to come.

They set out on a foresight process, asking three pivotal questions:

- How is the world changing around us? i.e. are we paying attention to what is happening around us
- Where and who will be vulnerable in the future?
- What is the Future Red Cross and Red Crescent?

They went to a great effort to engage a wide variety of stakeholders with about 10,000 people from 192 countries taking part. A novel brainstorming game played on WhatsApp, called WhatFutures, targeted low- and middle-income countries. Data was also gathered through facebook and face-to-face workshops.

To accomplish great things, we must not only act but also dream; not only plan but also believe.

Anatole France

Using the information they gathered, the team led by Shaun Hazeldine and Aarathi Krishnan worked with design partners (including Open Lab at Newcastle University, Superflux and Changeist) to showcase the potential of humanitarian aid futures thinking with an experiential futures exhibition.

Reactions and feedback were recorded and used to inform IFRC's Strategy 2030, which was presented at the end of 2019 to map out how the organization planned to tackle the next decade.

KEY INSIGHTS

- The key challenge was creating a more agile approach to planning that combined a top-level mandate and bottom-up support
- This was a process of culture change, creative engagement and experimentation, enabled by strong leadership.

READ MORE

- You can read the full case here: [Humanitarian Futures at IFRC](#).⁴
- Read and download the strategy⁵ on IFRC's website



Image caption: Participants at the ICRC's Future Is Now experiential exhibition.

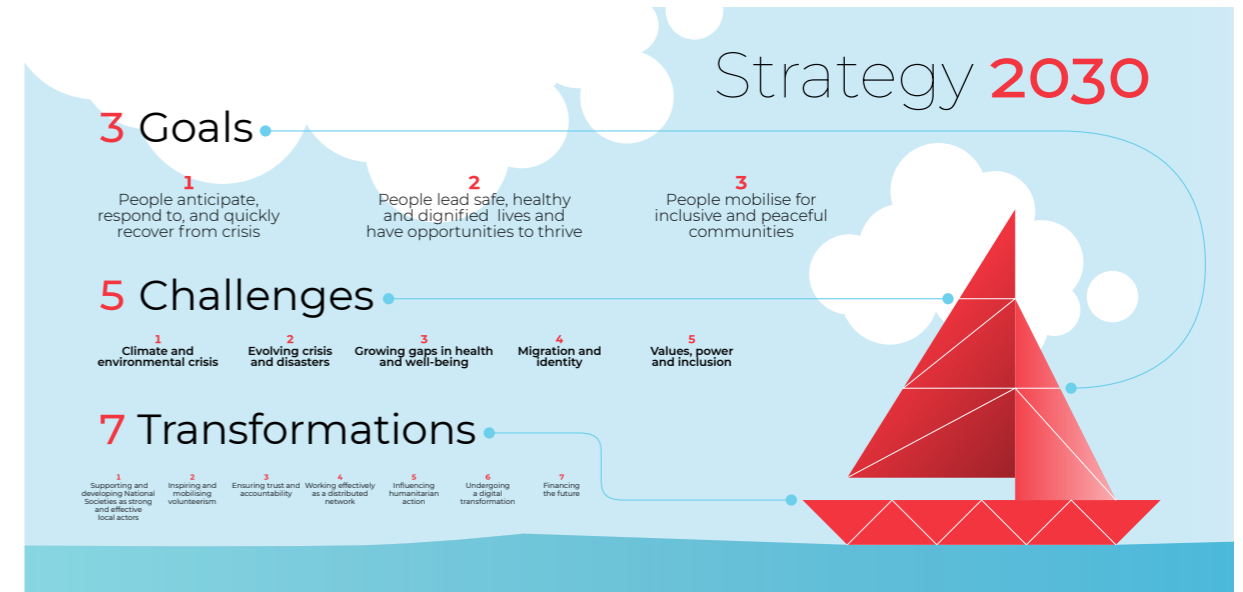


Image: Visualization showing the goals, challenges and transformations outlined in ICRC's Strategy 2030.

CASES: CITIZENS ARE INVOLVED IN SHAPING THEIR DESIRED FUTURES

TOGETHER FOR THE FUTURE: IMAGINE ARUBA (NOS ARUBA 2025)



In Aruba, 60,000 people from primary school children to pensioners—nearly 60% of the country's entire population—participated in developing their vision for the future of Aruba and a set of recommended actions to help move towards that future, for the benefit of the current population and their descendants.

The objective of Nos Aruba 2025 was the “institutionalization of an integrated and strategic planning process where the coordination between the relevant stakeholders is encouraged taking into consideration guidelines for sustainable development”.

The process ran from January 2008 to October 2009. It used Appreciative Enquiry and a wide range of participatory methods including workshops, mass participation events, social media and advertising all. This helped the nation answer four questions in sequence:

- Discover: What gives life? (Appreciating the best of something)
- Dream: What might be? (Envisioning impact: shared images for a preferred future)
- Design: What does innovation look like? (Co-constructing the ideal)
- Destiny: How to empower? (Sustaining the vision through action).

Theater, music, poetry and art were used to bring the imagined futures to life and to further engage others in creating a shared vision for Aruba.

The powerful conclusion of the process was that “shaping the future of Aruba is not the responsibility of the government, but the responsibility of each individual living in Aruba”. There is an emphasis on the importance of individual citizens, organizations across the public and private sector and NGOs all stepping up to take responsibility for their part in realizing the vision.

A set of scenarios were created to stress-test the strategies across alternative futures, to increase

the resilience and robustness of the action plan. Implementation of the strategies is now well underway. Strategies range from creating infrastructure for formal and informal education in the community to establishing the financial sector as a new high-end economic pillar.

KEY INSIGHTS

- The approach allowed people to plan in the face of increasing uncertainty, in a way that doesn't paralyze them, but gave the confidence to act,
- Importantly, public participation in policy making is now a well-established process on the island, involving all stakeholders.

READ MORE

- Read the: [Nos Aruba 2025 National Integrated Strategic Plan⁶](#)

Image caption: A lighthouse in Pescadero, California.
By Stephen Bedase

A PARTICIPATIVE FUTURE FOR OMAN: THE TURNING POINT SCENARIOS

Oman was developing a new national strategy and Vision for 2040. They wanted the strategy to be robust and supported by quality stretching scenarios that could be used to build resilience and strategic agility. And they wanted to develop the scenarios participatively with its citizens, something it had not done before.

A 2-day, high profile foresight Forum brought internationally renowned speakers and 400 participants together with ministers to explore the drivers, disruptions, opportunities and threats facing Oman from a systems perspective.

This was followed by an expert workshop to test the findings, and start to develop scenarios and implications.

The process and diversity of views in the room helped to empower participants to raise and explore issues, alternatives and ideas that are often taboo, and to discuss these openly and effectively.

They helped Oman understand the magnitude of transformation needed in the face of a changing environment.

KEY INSIGHTS

- The participative nature of the scenarios allowed Oman to co-create and test strategy; generating ideas and building resilience.
- They helped Oman develop strategic foresight capability and awareness about the role of scenarios in the Vision 2040 process and to inspire coming Omani generation and catalogue insights as a “national memory” – through the Turning Point Scenarios.

READ MORE

- Explore the [Turning Point Scenarios for Oman 2040](#)⁷



Image caption: Muttrah, Muscat, Oman. By Anfal Shamsudeen

CASES: LEADERS MAKE INTERGENERATIONALLY FAIR DECISIONS

PUTTING INTERGENERATIONAL FAIRNESS INTO PRACTICE

Public Pension System Reform

Overall assessment of intergenerational fairness:
Probably Fair

WHAT PROBLEM DOES THE POLICY AIM TO SOLVE?

The maturing of a (generous) public pension system in a context of ageing population had put the financial sustainability of the Portuguese PAYG system at high risk. Therefore, in 2006 the Government and Social Partners reached an agreement to reform the pension system.

OVERALL INTERGENERATIONAL FAIRNESS ASSESSMENT

Taking into account the objectives of the reform (partially achieved) and the clearly unfair outcome in the no-reform scenario (very high and increasing taxes for future generations), this reform is probably fair; disadvantaged people are probably better off than in the no (or alternative) reform scenario.

Transitory Period (LRF 2016)

• Almost no impact on those who retired up to 2007 (other than less generous annual updates). For those who retired from 2008 the replacement rates of their pensions (compared to final salary) have gradually descended, and the age of retirement has been increasing. This generation contributed at the same rate as previous pensioners, but will be working longer and receiving lower pensions.

Full Effect of Reform Reached (2016-2042)

• According to the government assessment made in 2006, without the reform the public pension system would have been financially unsustainable by 2016. This means that higher social contributions or taxes would have been needed to finance the system. Therefore younger workers or even younger generations would have to support the entire burden. The transitory regime of the 2007 reform allowed the smoothing of this burden and turned the system more sustainable.

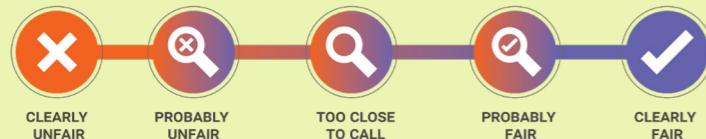
Full Effects in Place (2042+)

• Most new pensions at this time will be calculated using the new formula. New pensioners will have had 35 years to plan for their retirement on the basis of the reformed system.

DOES THIS POLICY DO ANY OF THE FOLLOWING?

- 1. Disadvantage people at any particular life stages?** The reform particularly disadvantages pensioners. It shifts the burden of keeping the pension system sustainable onto retirees. **Yes**
- 2. Disadvantage people at any period in time, present or future?** New pensioners will progressively face higher age of retirement and lower replacement rates. But without the pension reform, younger workers or even younger generations would have to support the entire burden. **Yes**
- 3. Increase the chances of inequality being passed on through time?** (If available studies point to progressively lower inequality over time) **No**
- 4. Restrict the choices of future generations?** It may be necessary to adopt the current pension regime depending on its social adequacy and fiscal sustainability in the relevant scenarios. **Probably not**
- 5. Move society further away from its vision for the future?** This reform contributes to several "Portugal we want" dimensions: promotes sustained, inclusive and sustainable economic, rational wealth to be distributed fairly and reduce inequality; a Portugal that makes decisions with the people by directly listening to communities and engaging with them. **Probably not**

For list of recommendations and detailed assessment, please visit: soif.org.uk/iff
OR scan the QR Code using your mobile device.



Younger generations are becoming more vocal about the impact of the decisions made in the past that affect their present opportunities and future. Meanwhile, concerns about intergenerational fairness have steadily climbed up the priority ladder over the past decade. The 2020 OECD Report on Governance on Youth, Trust and Intergenerational Justice outlines the intergenerational issues underlying many of today's most urgent political debates, and we believe these questions will only intensify in coming years.

In 2020, School of International Futures and the Calouste Gulbenkian Foundation published a methodology to assess whether a decision is fair to different generations, now and in the future.⁸

It can be applied by national and local governments, independent institutions, international organizations, foundations,

Image: Assessing policies to determine whether they are intergenerationally fair. This example comes from the assessment of the Public Pension System Reform bill in Portugal.

businesses and special interest groups to evaluate the impact of decisions on present and future generations.

The Framework helps assess the impact of public policies on present and future generations and make decisions better informed by the long-term. It includes a dialogue component, assessment tool, and recommendations for building institutional and systems-wide ownership.

The policy assessment methodology is freely available for use under the Creative Commons license for non-commercial use.

READ MORE

- Learn more about the [assessment framework](#)⁹
- Read about how [Intergenerational Fairness](#) supports responsible policymaking in the EU.

INTERGENERATIONAL FAIRNESS IN JAPAN

The Research Institute for Humanity and Nature in Japan used a “Future Design” method¹⁰ to host conversations about the future with unborn generations in Japan. This participative process brings community residents together as a group of current generations and another group of imaginary, future generations. Both groups discuss community policies, with the difference that the future residents discuss them from within the context of the future (2060).

The change in perspective that results, gives rise to very different outcomes around policy discussions, and flows into very concrete changes that already have positive impact in the present. Participants also indicate attitude changes towards future generations and a lasting integration of a futures perspective in their personal lives.

KEY INSIGHTS

- The process brought to light the conflict of interest between current and unborn generations.
- Participants developed a lasting empathy for future generations.
- The process not only represented future generations in the present, but also managed to change the perspectives of the present generation
- The process increased the active, civic participation of participants after the workshop

Participants realize “...what they should do now to keep them happy in 2060”

Professor Tatsuyoshi Saijo, Director, Research Institute of the Future



Image caption: The ceremonial robes of the “future residents” from the year 2060. Source: ritsuji yoshioka



USE FORESIGHT TOOLS IN YOUR WORK



FORESIGHT TOOLS

A TOOLKIT TO GET YOU STARTED




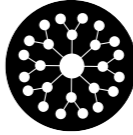

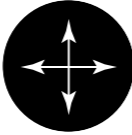




There are many ways to design a futures exercise, and many different tools, theories, methods and approaches.

Choosing the right ones for the task at hand is important — however, tools are just a means to an end. The first step to transformation is understanding your purpose, your community, and your question. Your approach should then be tailored to the particular needs of the organization and its communities, and the skillsets of those using the tools.

The range of tools here is not meant to be comprehensive.

We have chosen ten tools for you that are easy to get started with. They can be applied across SOIF's [four stage process](#)¹¹, which is designed to help you take a systematic approach to foresight.

Each tool is accompanied by a step-by-step instruction and links to different resources that can help you to start using these in your work.

<p>1. Start with a clear question and purpose</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Scoping circle Set your project up for success by understanding your question, context and approach.</p> </div> <div style="text-align: center;">  <p>7 questions Questions that elicit views on what is shaping the future and why it matters to different people.</p> </div> </div>	<p>2. Think differently about change</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Pace layers Explore change at different paces.</p> </div> <div style="text-align: center;">  <p>Futures wheel Identify direct and indirect consequences of a particular change or development.</p> </div> <div style="text-align: center;">  <p>Three Horizons Explore short- medium- and long-term change to identify opportunities for innovation or transformation.</p> </div> </div>
<p>3. Imagine alternative futures</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Scenarios Identify critical uncertainties and use these to imagine alternative futures.</p> </div> <div style="text-align: center;">  <p>Systems mythologies Rapidly imagine different systems using these thinking hats.</p> </div> </div>	<p>4. Navigate uncertainty</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Visioning Understand your preferred future.</p> </div> <div style="text-align: center;">  <p>Backcasting Start in the future and work back to identify new pathways and possibilities.</p> </div> <div style="text-align: center;">  <p>Wind-tunneling Stress-test policies, strategies and goals against different future scenarios.</p> </div> </div>

1. SCOPING: START WITH A CLEAR QUESTION AND PURPOSE

IT IS CRITICAL TO UNDERSTAND WHY YOU ARE SETTING OUT ON A FORESIGHT PROJECT

This is what we call the scoping phase of a project ([see Section 3](#)). It is about setting yourself up for success in your project, to make the most of the opportunity to create impact using foresight.

Your approach may look very different (duration, product, methods, tools) depending on why you're doing it and where the request and mandate for impact came from.

Taking the time to scope properly helps you build engagement, thoroughly understand the context and people involved, and design a cost-effective intervention for maximum impact.

You can use the [scoping circle](#)¹² as a tool to help you do this.



UNDERSTAND YOUR PURPOSE

Before you start, understand the reason for engaging with the future and the purpose of your project. There is often one dominant reason for wanting to do so—ask questions, to get clarity on this, and challenge the answers. [The foresight typology](#) can help you to think about your reason and purpose.

DEFINE YOUR QUESTION

When you're confronted by the messy reality of the future it can be confusing and hard to know where to start.

The focal question for the project sets out precisely what you want the project to answer. It is critical as it guides all aspects of the project design. It should hone in on the core issue of interest and be something all key stakeholders can agree on.

You should spend time talking to others about your question, understanding what is in and out of scope, and seeking out diverse perspectives.

Choosing the right question is hard – with the wrong question the scope can become too broad or too narrow, or tangential to the real topic of interest.

Are you looking at the future of the car, or the future of mobility? What are the building blocks of the future in the system you want to make sense of?

The [seven questions](#) can help you develop new ideas and perspectives on your question.

Tools such as [pacelayers](#)¹³, the [futures wheel](#)¹⁴ and [three horizons](#)¹⁵ can help you to think differently about change, gaining new perspectives.

ENGAGE THE RIGHT PEOPLE

Stakeholder engagement is critical for the success of any project:

- To ensure there is a mandate and buy-in from the project commissioner, and you have their permission to challenge the status quo.

- To gain insight, understand emerging thinking, generate new ideas, and get feedback and challenge.
- To ensure that the beneficiaries, communities and individuals who will be impacted are engaged through the whole project.

Who you speak to and who you choose to bring with you on the journey will affect the insights and impact of your project.

We recommend establishing a network of individuals that can help you scan and make sense of emerging insights, and provide perspective—at the start of any project.

TOOLS TO USE:



Scoping circle Set your project up for success by understanding your question, context and approach.



7 questions Questions that elicit views on what is shaping the future and why it matters to different people.

SOIF FORESIGHT TYPOLOGY

SOIF's foresight typology¹⁶ is a heuristic for thinking about why you are engaging with the future. Use this when scoping as a starting point for thinking about your reason for engaging with the future, and your question.

TYPE	REASON FOR COMMISSIONING THIS TYPE OF PROJECT	TYPE OF QUESTIONS
RISK MANAGEMENT	<ul style="list-style-type: none"> Preparedness and resilience, including contingency planning / wargaming (working through in detail a specific scenario) Challenge our assumptions and avoid unpleasant future surprises 	<ul style="list-style-type: none"> What happens if? What risks are arising? Tends to start from a position which is short-term and about protecting status quo
STRATEGY DEVELOPMENT	<ul style="list-style-type: none"> As an integral part of the standard strategic or policy planning process. Explore possibilities, scenarios & options 	<ul style="list-style-type: none"> What future developments should we be aware of in planning and resourcing to succeed?
ORGANIZATIONAL PURPOSE	<ul style="list-style-type: none"> Under conditions of change, where environment is changing dramatically 	<ul style="list-style-type: none"> Why are we here? How can we achieve our goals in this very different future?
INNOVATION	<ul style="list-style-type: none"> Looking for new angles, new solutions or partnerships. Can be in response to groupthink or to explore implications of new disruptive technology or change. Scan the horizon. 	<ul style="list-style-type: none"> What new opportunities are arising? Including to do things differently?
SECTOR VISION AND ENGAGEMENT	<ul style="list-style-type: none"> To bring a loose group of incumbent and new stakeholders together to think collectively about an existing sector or network Anticipate and shape the future 	<ul style="list-style-type: none"> What might our joint futures look like?
LEADERSHIP	<ul style="list-style-type: none"> Consensus building/Strategic alignment/Change management to a new normal – accessing finance too 	<ul style="list-style-type: none"> Our community needs hope, cohesion and a sense of action today – can we use our future dialogue to build this?

SCOPING CIRCLE

SET YOUR PROJECT UP FOR SUCCESS BY UNDERSTANDING YOUR FOCAL QUESTION, CONTEXT AND APPROACH

Why would you use this? To understand which techniques to use or combine, you need to start with a clear statement of what you're being asked to do.

How can it help you? A scoping circle" is a set of six steps that you can use to help get this process started.

How it works Start with the question that you have the clearest answer to and work your way around the circle as many times as is useful.

DEFINE THE PROBLEM AND FOCAL QUESTION:

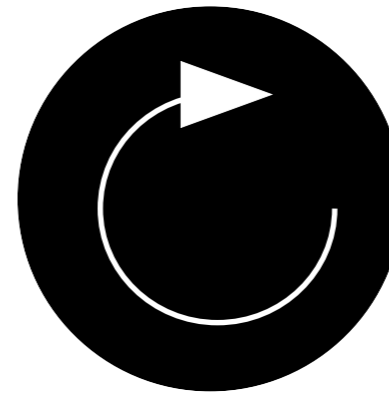
What is the challenge that needs a response? What question is not getting answered? What needs to be surfaced that isn't?

DESIGN YOUR APPROACH:

What meets these needs? What could go wrong? What should be avoided? What does thinking about the long term future help you do?

CONTEXT:

What does your system look like? What is this project trying to achieve? Where will you draw your boundaries? How does this fit with your core values?



SIGNALS AND SENSING:

Where will you look—and who will you collaborate with—to identify new insights and signals of change?

MANAGE CHANGE:

Who is the project for? What needs will it satisfy? Who might be upset or resistant to change? How will you include people in the process?

MAKE THE CASE:

How will evidence come together to make the case for change? What will be important for different audiences in your organization or sector?



SCOPING CIRCLE: USING THE TOOL

WHAT DOES THIS TAKE

 1-2 hours

 5-8 participants

 Medium

You can run this exercise as an individual, but it will produce richer insights as a group exercise. Try to include different perspectives, including the person who has asked for the project, beneficiaries, project team and innovative thinkers.

Although this is a simple tool, using it iteratively deepens your thinking considerably. Run it first to scope the project, then revisit this with different people, as you refine your thinking.

Having used the scoping circle, we suggest documenting the scope of the project in a scoping note. The scoping note should set out the project parameters—content, people and process—as well as more formal project management and governance arrangements.

Depending on your governance structures, this can be signed off with e.g. the project commissioner, or your governing board. This helps to ensure that everyone agrees on the scope and boundaries of the project.



STEP BY STEP

Step 1 Take 10 minutes to introduce and discuss your collective aims and ambitions for the project. You should share your existing focal question or framing.

Step 2 Next, split into two. Each group should spend 20 minutes to complete an initial scoping note. You can [download](#)¹⁷ a blank template or draw this on a flipchart.

Start with the step that you can think of the clearest answer to and then progress round the circle coming back to the original question when you've finished. You can go around the circle several times until you are happy with the answers.

- Define the problem and question
- Design your approach
- Signals and sensing
- Make the case
- Manage Change
- Context

Step 3 Come back together to share your perspectives and have a conversation about the similarities and differences. Try to understand these. Continue to work as a group, going around the circle several times again, as needed, until you are happy with the answers. In the last 10 minutes, think about what else you need to do and who you need to engage with to test your ideas or gather additional insights.

TIPS AND TRICKS

The **focal question** for the project is critical as it guides all aspects of the project design. It should be something all key stakeholders can agree on.

Choosing the right question is hard – with the wrong question the scope can become too broad or too narrow, or tangential to the real topic of interest.

The **foresight typology** on [page 20](#) can help you to think about your reason and purpose. There is often one dominant reason for wanting to do so— ask questions to get clarity on this, and challenge the answers.

You should spend time talking to others' about your question, understanding what is in and out of scope, and seeking out diverse perspectives.

FIND OUT MORE

Use [context mapping](#)¹⁸ or [mess maps](#)¹⁹ to help you explore the context and system in a visual way.

Explore different approaches to [horizon scanning](#)²⁰ and build your sensing networks²¹.

SCOPING CIRCLE: HEALTH SYSTEMS

This example illustrates how you can use the Scoping note. It is based on the case of Canterbury District Health Board, New Zealand (see page 9), however, this is a fictional scoping circle. It aims to show how the scoping circle could have been applied to help scope their foresight project as they set out to transform a broken health and social care system and re-establish trust in their community.

DEFINE THE PROBLEM AND QUESTION:

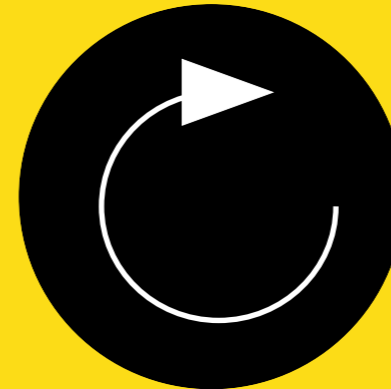
- The Health Board has neither the money nor the staff available to meet future demands for healthcare.
- There are growing reputation and morale issues.
- The project combines leadership, sector vision and engagement.

DESIGN YOUR APPROACH:

- We need to redesign healthcare, but this will require everyone delivering healthcare to change together.
- A greater focus is needed on prevention.
- We are looking for a single vision that different organizations and communities can come together and believe in.

CONTEXT:

- The current health system is unable to meet future demand. Trust is low and falling. Stakeholders are not aligned.
- The Canterbury health community needs to be at the center of the process—they should be able to drive change and have more power and agency over how health is provided.



SIGNALS AND SENSING:

- We need to be aware of the latest in healthcare innovation and changing health needs.
- There are shifts in how services are being funded across New Zealand and in Canterbury. Including integrated approaches to health and wellbeing and social care.

MANAGE CHANGE:

- We need to take 18,000+ healthcare workers and key patient groups and social services too.
- The process needs to be community- and people-centered
- The board needs to be involved, especially finance, to ensure change is viable and supported.

MAKE THE CASE:

- This is not just about technology, but what the workforce, patients and other citizens can do differently with it. What will the experience feel like for citizens, including indigenous communities?



SEVEN QUESTIONS

7 QUESTIONS IS AN INTERVIEW TECHNIQUE THAT ALLOWS YOU TO GATHER INTELLIGENCE ABOUT THE FUTURE

Why would you use this? 7 questions²² is a technique for gathering strategic insights by interviewing a range of internal and external stakeholders.

How can it help you? This technique can be used to identify conflicting or challenging views of the future and extract deep information about underlying concerns in a policy area. It helps to stimulate thinking in preparation for a futures workshop. As a first step to gathering intelligence from stakeholders, it is particularly useful for obtaining the engagement of senior stakeholders to any project or issue. It can be used with individuals, groups or as part of a workshop. The finding from which can feed into backcasting, wind tunneling or any other visioning activity.

How it works It can be used with individuals, groups or as part of a workshop. Use the 7 questions provided to conduct semi-structured interviews with carefully selected stakeholders.

1. ORACLE

What would you consider to be the critical issues for the future of [the theme]?

2. OPTIMISTIC

Imagine in 10 years' time, what would a positive outcome look like for [the theme] and what would be the signs of success?

3. PESSIMISTIC

What would you see as a bad outcome? How might this come about?

4. LOOKING FORWARD

Which important decisions need to be made in the short-term to ensure a successful long-term outcome?

5. CONSTRAINTS

What might stop these decisions from being made taken?

6. LOOKING BACK

What can we learn from our experiences? What mistakes have been made in the past that we can learn from?

7. LEGACY

If you had a mandate for change, free of constraints, what would you do to ensure a successful future for [the theme]?



SEVEN QUESTIONS: USING THE TOOL

WHAT DOES THIS TAKE

 **1 hour per interview, plus write-up time**

 **15–20 participants**

 **Low**

The 7 Questions technique was pioneered by Shell²³ in its strategy development process. It is a powerful tool for gathering opinion from diverse stakeholders on the strategic issues that need to be addressed in a given policy area, and for highlighting areas of agreement or conflict about the way forward.

This technique allows you to gain insight from both internal and external stakeholders, through interviews which will give insight on a focal theme or issue you have identified. Before undertaking interviews it is important to define the issues that you wish to explore, this could include developing a hypothesis you would like to explore using the interview data. It is useful to start interviewing early in any project as interviews help to define the scope of the project and its critical issues.

STEP BY STEP

Step 1 Define your question and scope Before you start, make sure you have a clear hypothesis or scope for the project (you can use the [scoping circle](#) to help think about this).

It's often helpful to share the question and scope with interviewees to help them reflect ahead of the interview.

Step 2 Select your interviewees It is important to think about who to interview early on in the project. You should interview a mix of internal (e.g. project commissioner, key thinkers in your organization or community) and external stakeholders (innovators or 'unusual suspects') who can bring interesting and challenging perspectives.

Aim for a mix of 30% internal and 70% external interviewees. The number of interviews depends on the scope of the project and the range of its stakeholders but to get representative results you usually need 15 to 20 interviews.

Step 3 Conduct your interviews Each interview will take about 40 minutes. Interviews are semi-structured, using the seven questions.

You should give interviewees space to speak as much or as little as they want, allowing them to follow their train of thought, and being comfortable with silence. Do not rush to prompt, it's important to let the interviewee follow his or her train of thought without interruption. However, you may need to prompt for additional information.

Allow for approximately one hour of time to write up each interview. You may want to send a write up of the interview to the interviewee for them to verify, particularly if there are contentious issues or if you are planning on using the interview to produce an issues paper for wider circulation.

Step 4 Sense-making The 7 questions typically surface different types of insight, and it can be helpful to map or code the themes that emerge across all your interviews. You can expect:

- Insights about the project question and scope
- Important or interesting trends and drivers of change
- Ideas about positive and less desirable futures
- Enablers or barriers to change

A simple way to start using the data is to map the themes that people have talked about into barriers and enablers. Alternatively you can use your data to refine your question or hypothesis.

Once you have done this, come together with your team to reflect on what you've learned and how to take this forward.

The insights gathered can act as a stand alone activity to engage stakeholders to start thinking about the future, or the exercise can form part of a workshop, or alternatively the output can feed into other scenario development and visioning activities.



SEVEN QUESTIONS: USING THE TOOL

TIPS AND TRICKS

It's often best to conduct interviews face to face; ideally in the interviewee's office or a place of their choosing. If logistics are tricky the interviews can be done remotely—if this is the case, try to do them using a video call, rather than on the phone, as you can connect and engage more if you can see the interviewee.

If it is possible, take two people to the interview. One can lead the questions, both should take notes. If this isn't possible, seek the interviewee's permission to record the interview.

Practice active listening. Try to capture the interviewee's language and turns of phrase in your notes. Often insight is found in the nuance of the interview.

Have a few prompts or questions on specific topics ready in case interviewees find the open ended questions difficult.

Don't worry if you are not able to get through all seven questions. The first three—Oracle, Optimistic, Pessimistic—are particularly important for identifying the key forces shaping the future. The next three—Looking forward, Constraints, Looking back—for understanding how to create change. The final question—Legacy—is often quite powerful as it helps give the interviewee agency over the future, and can lead to powerful and emotive responses.

FIND OUT MORE

This [Futures Toolkit](#)²⁴ explores two versions of 7 questions and how to use them.

**We choose our future;
We create it by what we
do or fail to do.**

Wendy Schultz



2. THINK DIFFERENTLY ABOUT CHANGE

UNDERSTANDING WHAT IS CHANGING IS CRITICAL TO IMAGINATIVE AND CREATIVE FUTURES WORK

Once you've got clear on the question, purpose and scope you're setting out to answer (see Section 1), and you've started to get a sense of the system you're interested in, what next?

There are many ways to design a futures exercise, and many tools. However, we consider there to be three fundamental steps that are needed when depicting futures.

1. Identifying what is changing
2. Taking a systems approach
3. Exploring alternative futures

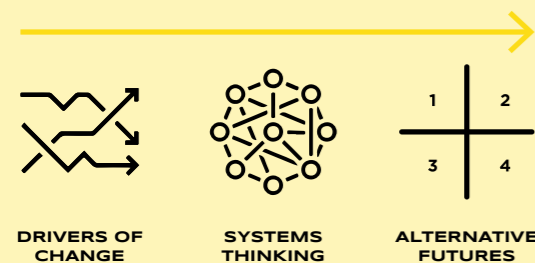


Figure: Fundamental building blocks of foresight²⁵

WHAT ARE YOU LOOKING FOR WHEN EXPLORING CHANGE?

In futures work we are looking to understand what is changing in our external, or contextual environment. The change that we're interested in tends to come from the outside.

We're all familiar with this kind of change, but we aren't always able to appreciate its impact on our sector, or organization.

In foresight work, these drivers of change are often global or sectoral issues and trends that shape our future societies and markets. "In cause and effect, it's the cause" (Learning from Technology Foresight Connections).

Focusing on drivers of change highlights the history and context that have shaped the present, as well as the megatrends that will likely affect all areas of society in the future, for instance over the next 10–15 years. This includes global shifts and changes, such as aging populations, climate change, and shifts in values.

We need to look beyond boundaries to identify potential wild cards and emerging issues (weak signals) that may have an impact, even looking to the fringe for new sources of inspiration.

The process for doing this is often called horizon scanning. If you are interested in finding out more then please check out the resources section.

WHY USE SYSTEMS THINKING?

Systems thinking can be used to explore how alternative outcomes of drivers will affect the overall system, and to test for unexpected consequence and shocks as the system adapts.

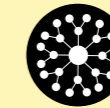
This process tests the way we understand the world. Systems mapping can be used to identify and to explore key relationships, to challenge assumptions, and to understand how a system might evolve over time. A systems map can be kept up to date, and is able to evolve as new information comes to light or the future unfolds.

We only touch on systems thinking lightly in this section, using three horizons. Again, check out the resources section for more information.

TOOLS TO USE:



Pace layers Explore change at different paces.



Futures wheel Identify direct and indirect consequences of a particular change or development.



Three Horizons Explore short - medium-and long-term change to identify opportunities for innovation or transformation.

PACE LAYERS

EXPLORING CHANGE AT DIFFERENT PACES

Why would you use this? Pace layers is a framework for thinking about the different factors that drive change in a system, and how they evolve over time. Systems are in a constant dynamic of change, they are not static entities. Patterns of behavior develop over long periods, through the relationships of the parts, and interactions with their environment. They can also be volatile and change suddenly when factors converge. We often operate with short time horizons, at most a few years. We need to consider how things have changed in the past, are now changing and might change into the future.

How can it help you? Pace layers helps you explore change that might be happening at different speeds. There are six layers from fastest to slowest: Fashion, Commerce, Industry, Governance, Culture and Nature. These have been intentionally chosen by the designer of the tool (see further reading) though people sometimes choose to change these.

How it works Brainstorm ideas about what impacts your topic at each layer in the past, present and future, to build u-p your understanding of systems dynamics. The idea is that the top layers move faster, but the slower layers provide a stabilizing force and drive longer-term change: “Fast learns, slow remembers. Fast proposes, slow disposes. Fast is discontinuous, slow is continuous. Fast and small instructs slow and big by accrued innovation and by occasional revolution. Slow and big controls small and fast by constraint and constancy. Fast gets all our attention, slow has all the power”.²⁶

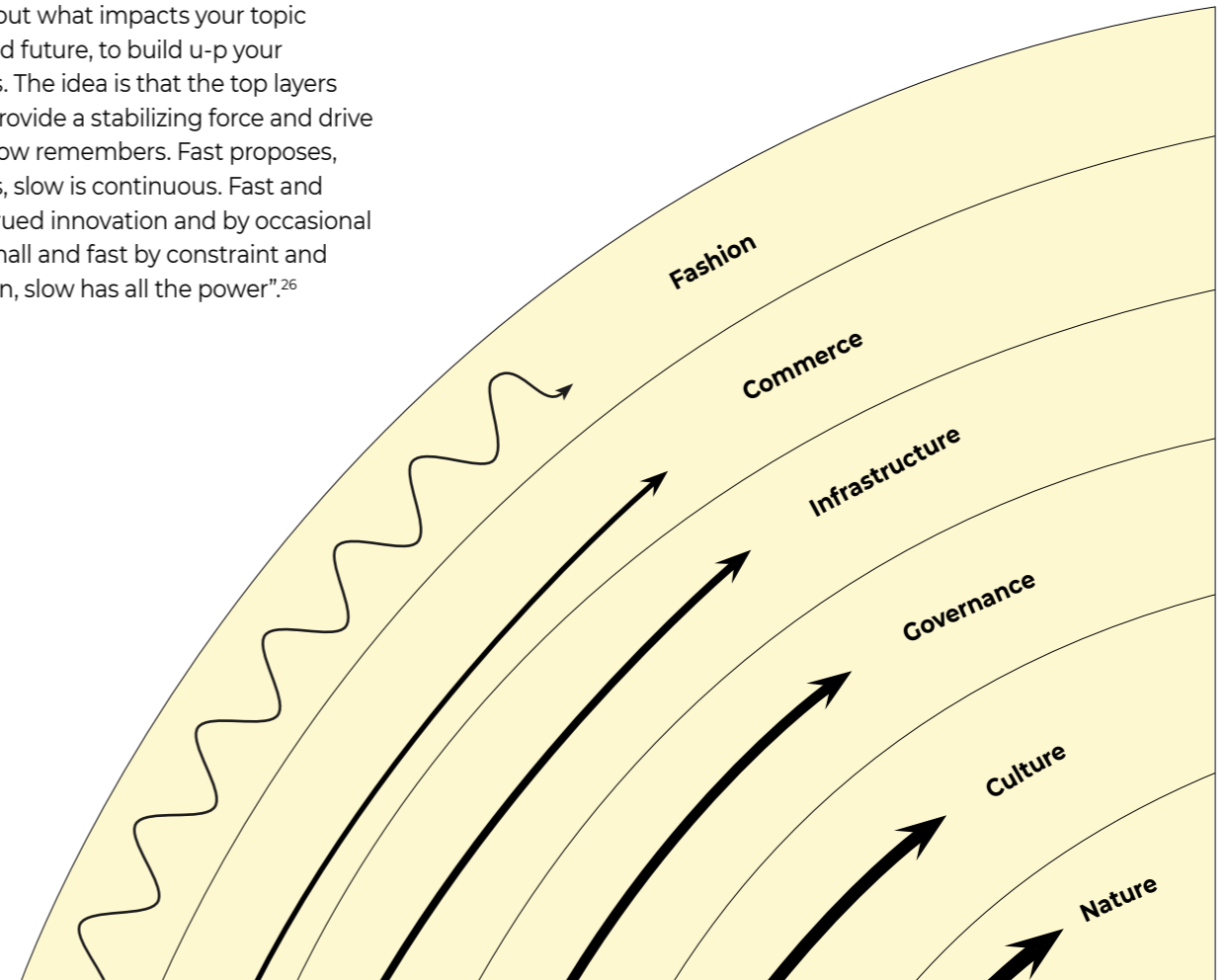


Diagram: Pace layers. Adapted from Pace Layering: How Complex Systems Learn and Keep Learning. Stewart Brand, MIT Press (2017)²⁷



PACE LAYERS: USING THE TOOL

WHAT DOES THIS TAKE

 20–60 mins

 1+ participants

 Low

Pace Layers is a helpful tool for thinking about the past, present and future of an issue. It was proposed in *The Clock of Long Now*²⁸ by Stewart Brand.

It provides a framework to think about different time horizons, as well as different paces of change.

It can help you to:

- Think imaginatively about change and how it might play out over different time horizons
- Identify the forces that are shaping the past, present and future of your question
- Understand how change in different layers could bring about systemic, or rapid change.

STEP BY STEP

Exploring the past, present and future

Step 1 Start with the **top three** layers—fashion, commerce, infrastructure. Brainstorm ideas about what is shaping your topic, working through the pace layers.

For each layer, you should think about what is changing today, what past changes are influencing the present, and what could change in the future.

You can use this [template](#)²⁹ to capture your ideas.

Step 2 Repeat for the **bottom three layers**. These layers typically will have longer time horizons.

Step 3 Review your layers and ask:

- Which changes feel particularly relevant over the time horizon you are exploring?
- What could happen to accelerate the pace of change in the bottom layers?
- What could happen to slow down the pace of change in the top layers?

TIPS AND TRICKS

There are different ways to use the Pace Layers model, the approach here is a simple three step process to help you start to use the framework.

You can extend the approach by mapping change over time, though the framework was intentionally designed not to include timescales.

It's important not to get too hung up on the specific layers. It's the process of exploring different paces of change that is more important.

Technology is deliberately not included as a layer, as this allows for the impacts of technology to be explored in the context of e.g. fashion, commerce, governance and culture.

FIND OUT MORE

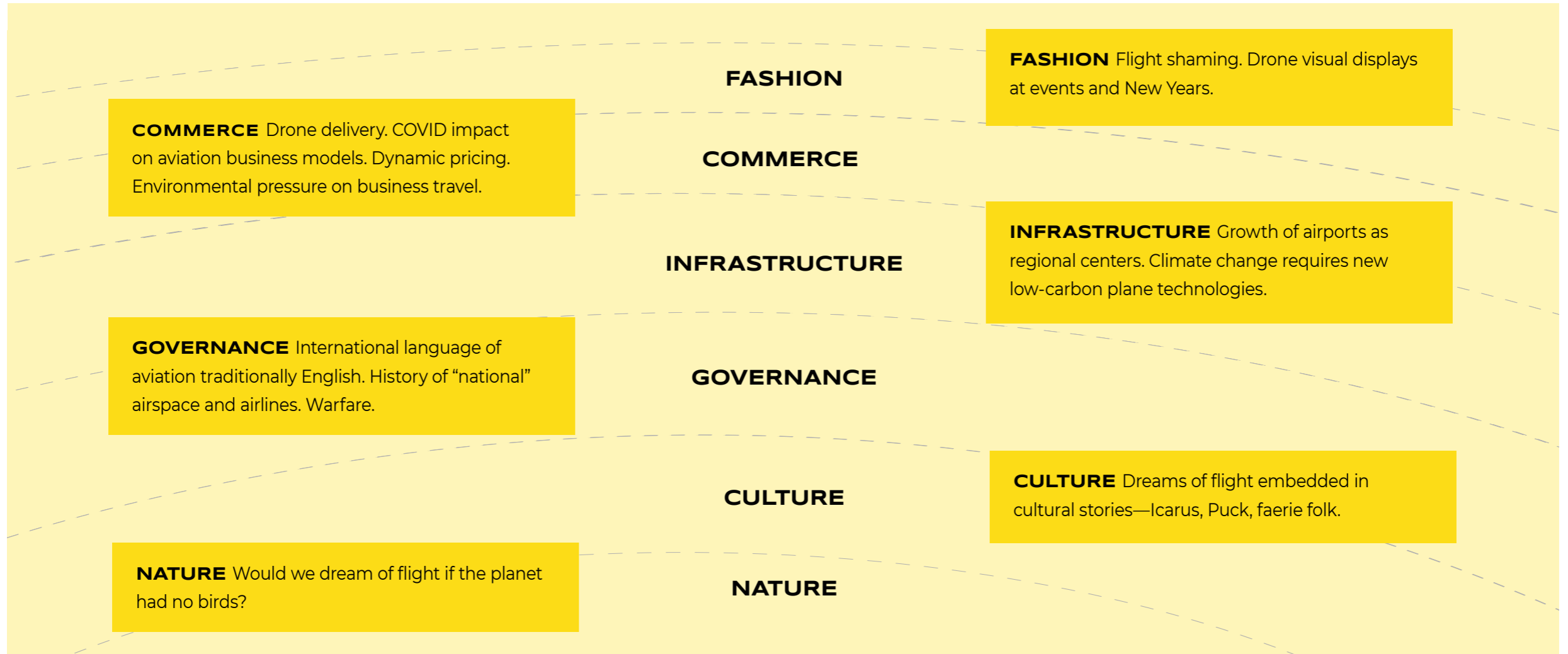
Read [Pace Layering: How Complex Systems Learn and Keep Learning by Stewart Brand \(2018\)](#).³⁰

Watch this [talk](#) by Stewart Brand and Paul Saffo from the Long Now Foundation.³¹



PACE LAYERS: AVIATION

This example illustrates how pace layers might shape aviation.



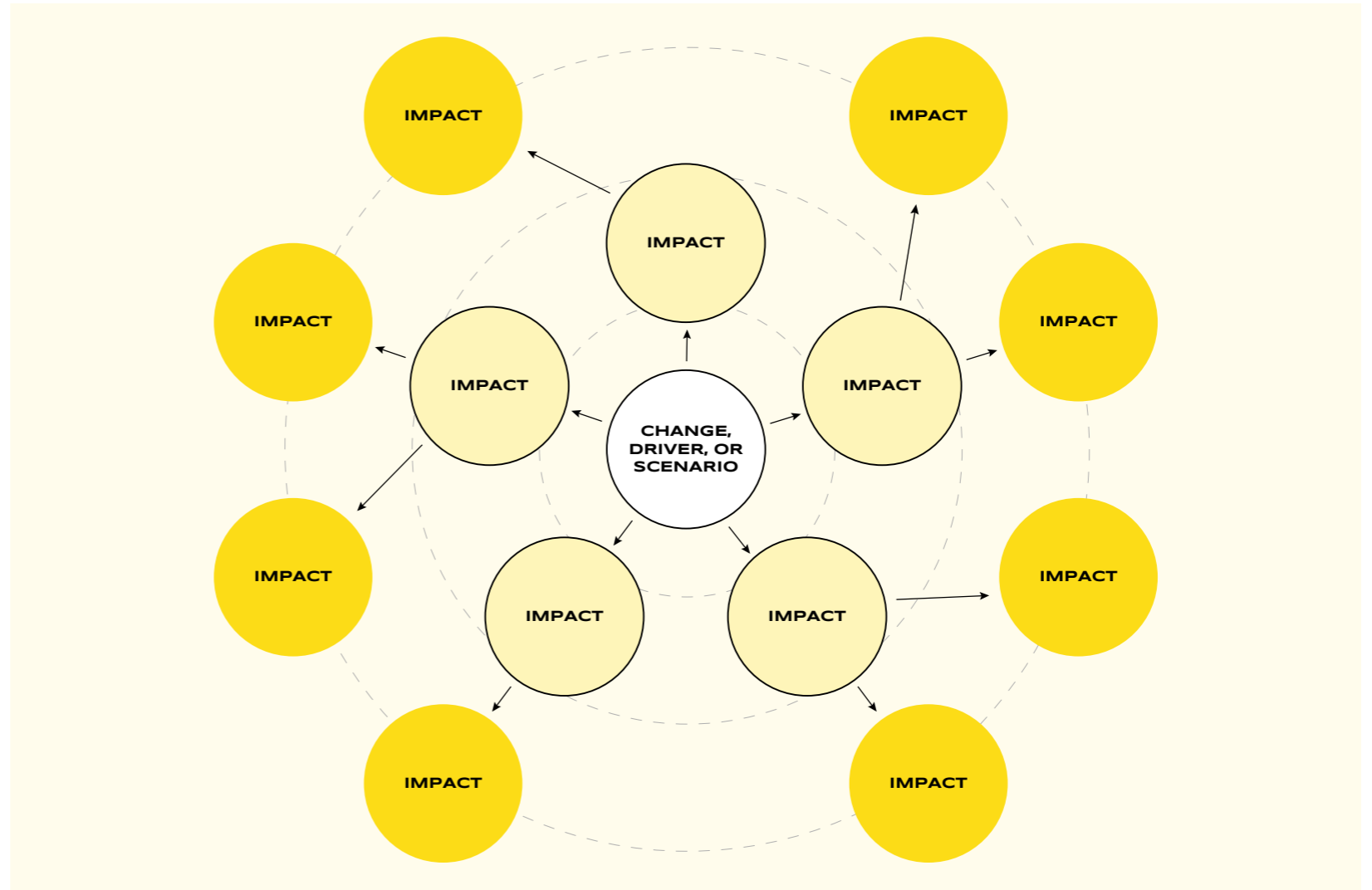
FUTURES WHEELS

EXPLORE THE DIRECT AND INDIRECT IMPACTS AND IMPLICATIONS OF A DRIVER, ISSUE OR SCENARIO

Why would you use this? The Futures Wheel³² helps you to explore emerging issues, imagine new possibilities, and identify risks and opportunities by thinking through first-, second-, and third-order impacts.

How can it help you? The Futures Wheel tool helps you explore the direct and indirect impacts and implications of a driver of change, emerging issue or future scenario.

How it works You start by placing an important change, driver, scenario or other issue in the center of the wheel (white). Then brainstorm potential first-order impacts in the next ring (light yellow). Then continue to brainstorm second- and third-order impacts, going one ring at a time.



FUTURES WHEEL: USING THE TOOL

WHAT DOES THIS TAKE

 **30-60 minutes**

 **3-4 participants per group**

 **Easy**

Designed by Jerome Glenn in 1971³³, the futures wheel is an intuitive and simple tool for thinking about the consequences of change, asking “so what” and “now what”?

It can be used to explore emerging issues, trends, scenarios and their implications. The tool provides a visual way to brainstorm and identify interesting and potentially counterintuitive consequences of change.

Building a futures wheel can be done rapidly alone or as part of a larger, group-based project. It works well as a collaborative activity, here we assume a small group of people are working together for 30-60 minutes on one specific topic.

Diversity is important. A futures wheel exercise is unlikely to produce valuable insights if all of the participants think alike.

STEP BY STEP

Step 1 Getting started Introduce the futures wheel exercise and the change that you want to explore. If using a scenario, or providing background material, give people enough time to read this.

Make sure everyone has a clear understanding before you start Step 2.

Step 2 Explore the immediate impacts In your groups, start by putting the change in the middle of the futures wheel. You can [download](#)³⁴ or draw out the blank template.

Think about the immediate impacts of this change, asking: “If this happens, what might happen next?”. Write your ideas on post-its and add these to the first ring of the wheel.

Keep going until you have at least 5 good ideas.

Step 3 Explore higher-order impacts For each of your ideas, repeat the process to complete the second ring of the wheel. Try to make sure you are not just thinking about positive or negative changes.

Step 4 Explore higher-order impacts Repeat the process again completing the third ring of the wheel.

Step 5 Sharing your wheels Come back together in your groups and explain your wheels to each other. Listen out for connections or interesting ideas.

Step 6 Reviewing your wheels Spend some time in small pairs or work individually to review your wheels. Asking:

- What are the most important or provocative changes that you have identified? In the short- and long-term?
- What stories are these telling us about the future? Summarize these as a one-sentence story.
- How can you take advantage of or mitigate some of the consequences of this change? Who needs to be involved?

TIPS AND TRICKS

The instructions suggest completing a ring of the circle at a time, rather than following a train of thought to completion. This helps you think widely about different types of change, rather than following a single train of thought.

There are different ways to use Futures Wheels. For instance, the tool can be extended by:

1. Using color-coded post-its to represent desired/less desirable change — extend this further by doing this exercise from different points of view.
2. Using the STEEP categories (Society, Technology, Environment, Economy, Politics) or a similar framework to structure thinking.
3. Segmenting the wheel based on a set of topics or issues that are relevant to the question, based on your scoping activity (see Case Study).



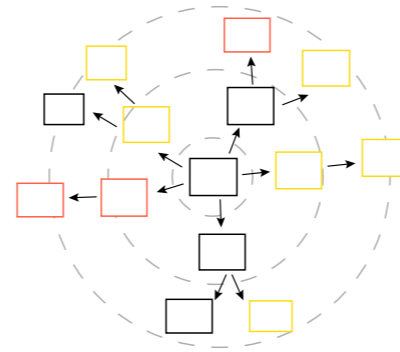
FUTURES WHEEL: USING THE TOOL

After completing the wheel, arranging impacts into a timeline can add further insights. This often serves as a prompt to push your thinking out further into the long term by running another round of adding third- or higher-order impacts.

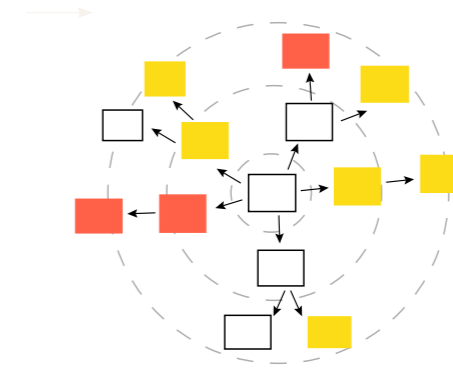
FURTHER READING

Read [The Futures Wheel](#)³⁵ described by its designer Jerome C. Glenn in The Millennium Project's Futures Research Methodology.

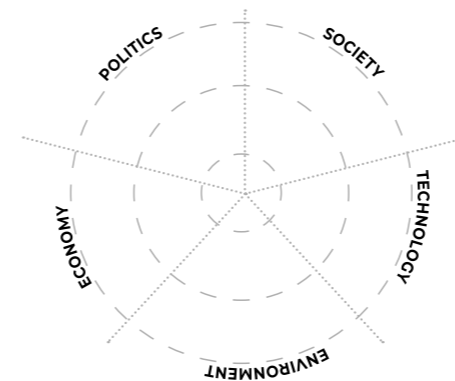
See how futures wheels are used in community dialogues in the WCVA [Building Better Futures toolkit](#).³⁶



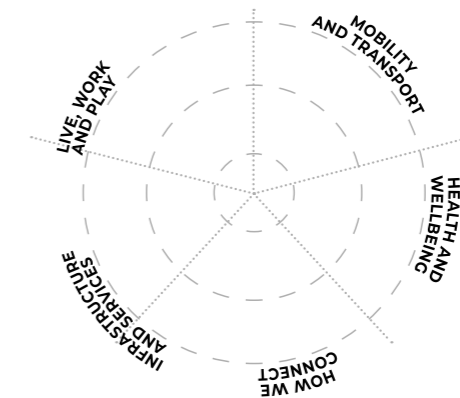
A simple futures wheel explores implications one step at a time, to identify interesting consequences of change.



Exploring sentiment using color-coded post-its to represent desired/less desirable change.



Structuring thinking using the STEEP categories to structure thinking.



Structuring thinking a futures wheel for the exploring the built environment.

FUTURES WHEEL: CLIMATE CHANGE

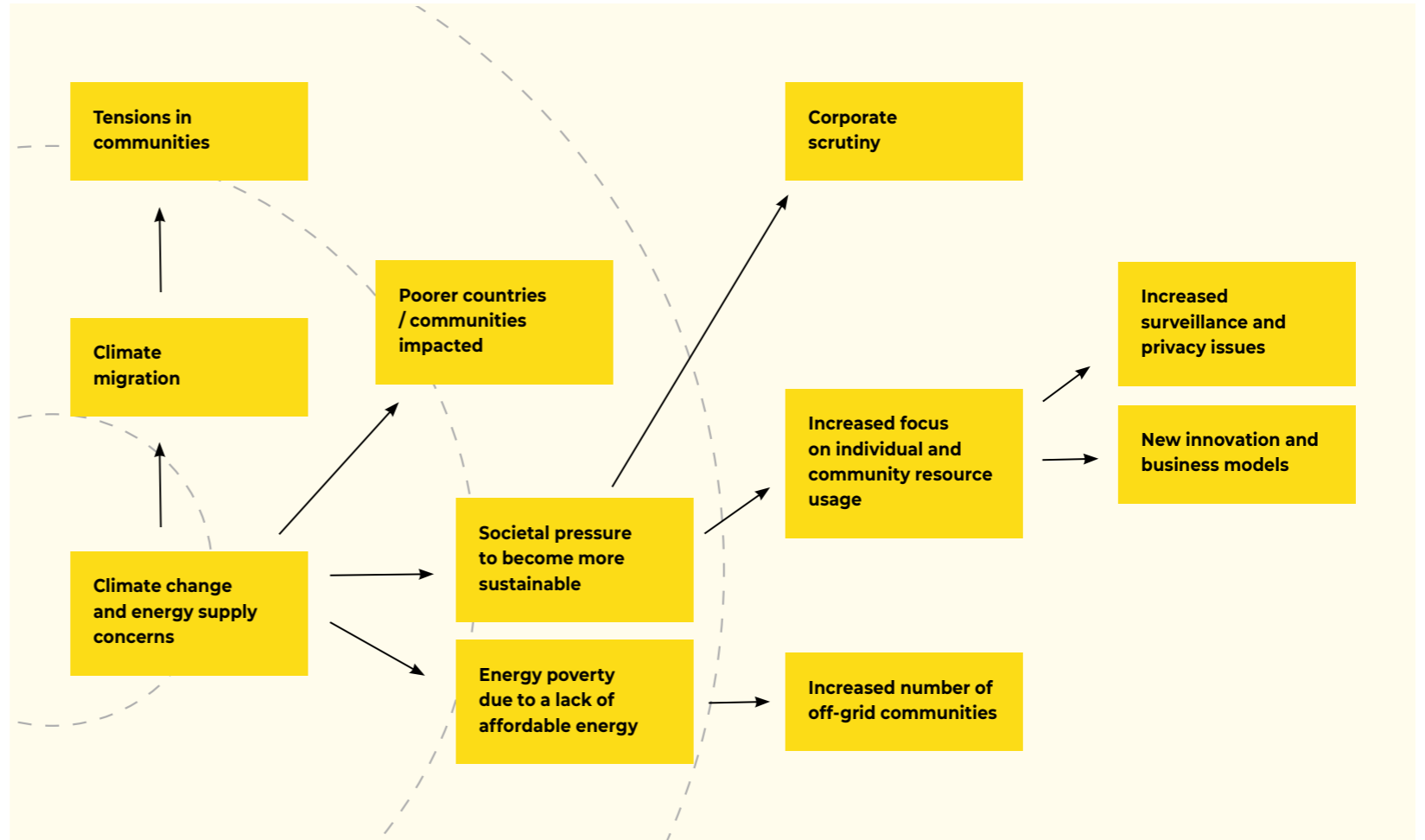
DESCRIPTION OF FUTURES WHEEL

This futures wheel is illustrative. It shows how you can start to build up implications one step at a time.

In this example participants identified climate change and energy supply concerns as a change that they wanted to explore using the futures wheel.

- They identified a set of first order impacts:
- Climate migration
- Risks around poorer countries and communities being impacted
- Societal pressures to become more sustainable; and
- Energy poverty due to a lack of affordable energy.

As they built up the wheel, it became clear that societal pressures may lead to negative implications around *surveillance and privacy*, as well as more positive *innovation* and new *business models*, focused on individual and community resources.



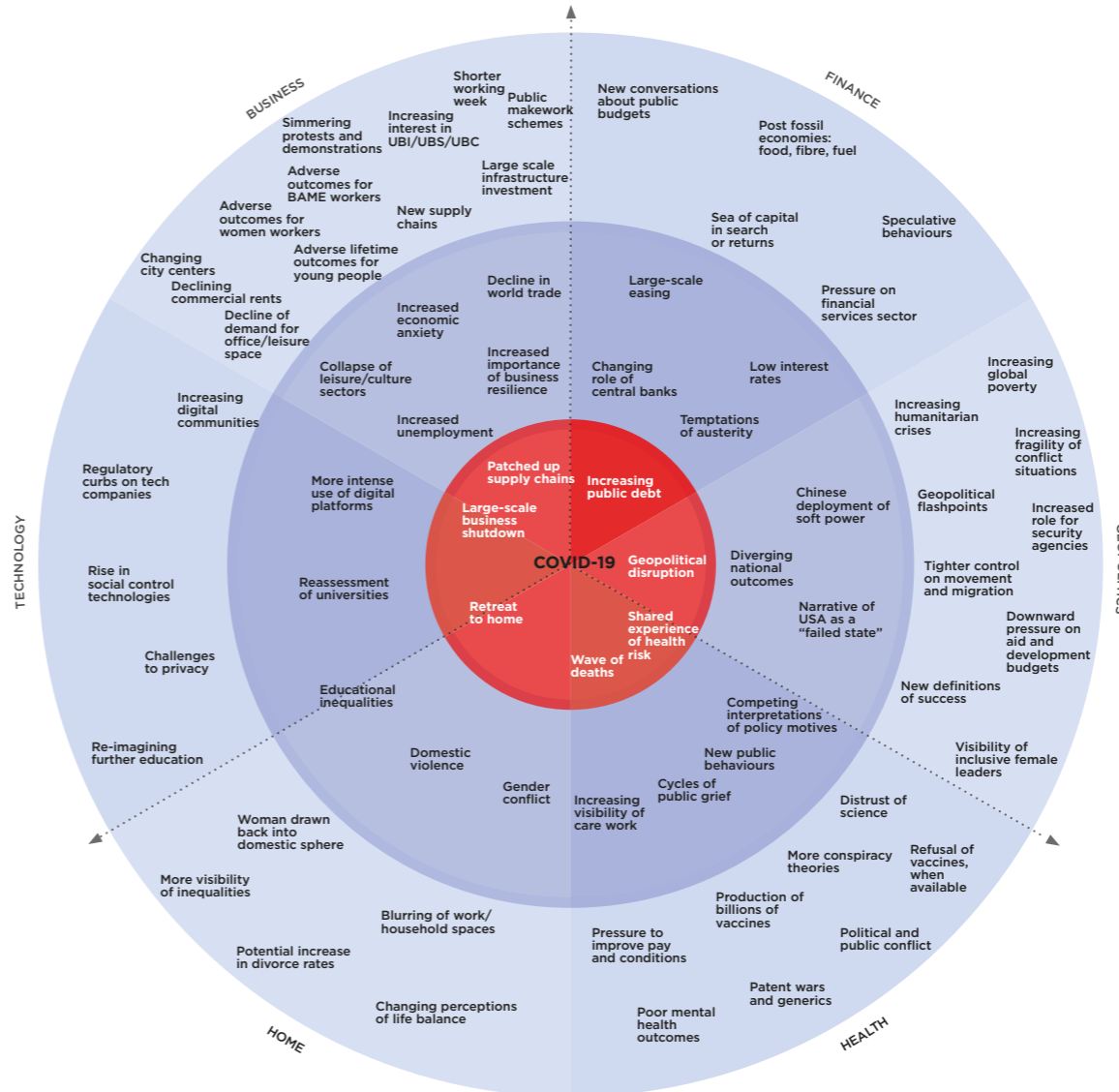
FUTURES WHEEL: COVID-19

This futures wheel was published by SOIF in a paper called “Beyond the Pandemic”³⁷ in January 2021. It follows that the consequences of the pandemic are playing out against the backdrop of a set of wider consequences.

It maps out a selection of the first order and second order effects that may emerge from the pandemic across six categories:

- Business
- Finance
- Technology
- Home
- Health
- Geopolitics

The arrows were intentionally omitted when developing this final visualization to allow the reader to explore their own logic (and for simplicity). You can read the full paper [online](#)³⁸.



THREE HORIZONS

EXPLORE SHORT- MEDIUM- AND LONG-TERM CHANGE AND IDENTIFY OPPORTUNITIES FOR INNOVATION OR TRANSFORMATION

Why would you use this? Three horizons is a framework about systems transition³⁹. It can be used as a simple tool to generate rich structured conversations about desired and undesirable change, how to get there, and the risks and opportunities along the way.

How can it help you? The concept of horizons is used to help you think differently about systems change. At H3Uni⁴⁰ they explain this by asking you to “Imagine you are looking at a view from the plains near the coast towards inland mountains. The first horizon is where the plains end and the foothills of the second horizon rise. Yet behind them are the high mountains of the third horizon. The plains may be agricultural, the foothills wooded and the mountains without trees and with glaciers. Each horizon is qualitatively different. The analogy here is that we need to be able to see different qualities that distinguish the short, medium and long term as more significant than the amount of time.”⁴¹

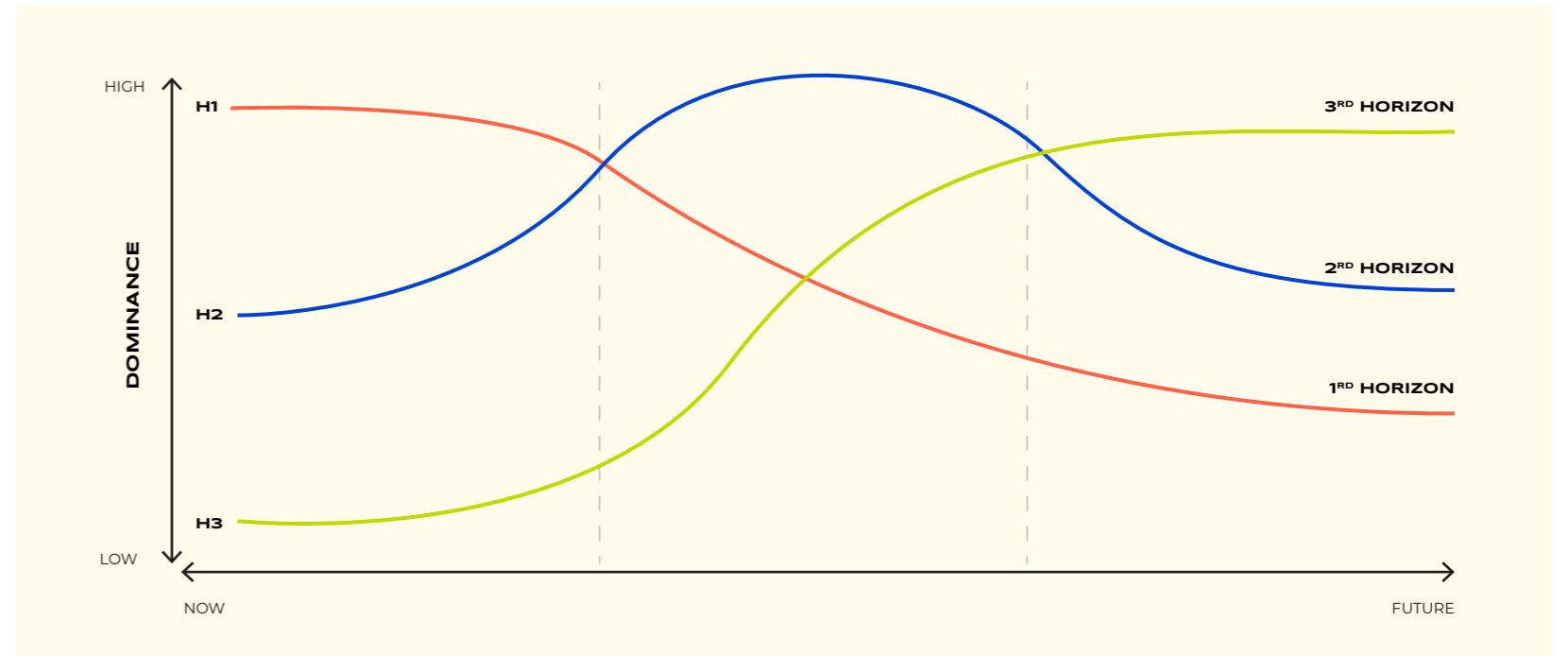
By exploring these horizons it is possible to identify key features of the systems that underpin each horizon, what can be done to encourage or discourage change, and identify opportunities for innovation or transformation.

How it works The three horizons are typically shown visually against an x-axis of time—from the present into the future—and a y-axis of the dominance of systems and ideas from less dominant ideas about the future to the current dominant view of the world.

The **first horizon** represents the current dominant system—sometimes described as Business as Usual. As the world changes some aspects of this system become less fit for purpose, others are worth conserving.

The **second horizon** The second horizon is a world in transition, a temporary system, though that doesn’t necessarily mean it will be short-lived. It is the land of the entrepreneur, creating innovations that help prolong H1, and usher in the third horizons. This system gains dominance and then becomes less relevant in its turn.

The **third horizon** is the longer-term future. This horizon often emphasizes the new, the transformative, the visionary, and a break with past traditions and current assumptions. It is often taken to be a desired future.



THREE HORIZONS: USING THE TOOL

WHAT DOES THIS TAKE

 90 mins

 3+ participants

 Medium

Three Horizons can be used in different ways:

- To explore an issue or change and think about what future(s) this could create (Option 1)
- To develop a vision and explore what you might need to do to bring this about (Option 2)
- To understand how to take advantage of opportunities or risks if a particular scenario were to emerge (Option 3)
- Whichever option you are using, you'll need to have an agreed focal issue, for instance, "what is the future of xyz?" or "should we build capacity in abc?", you also need to decide how far ahead do you want to look: ten years, 20 years, or beyond?
- You might already have an issue or strategic question you are grappling with. If not, you can use tools like the Scoping Circle to hone in on a topic of interest first.

STEP BY STEP

Option 1: Exploring change

Step 1 Exploring Horizon 1 (Present) (20 mins)

Make sure that there is a shared understanding of the issue or change that you want to explore. Then discuss how far ahead you want to look?

Add your time horizon to a three horizons [template](#)⁴². You can download this blank template, or on large sheets of paper. Think about using a wall as it helps to have a lot of space.

Work individually or in small groups to capture thoughts about the following questions, then have a conversation about your different perspectives:

- What does the issue / change look like today?
- What is changing that is putting today's system under pressure?
- What are the defining values or features of the system today?

Step 2 Exploring Horizon 3 (Future) (20 mins)

Now move to Horizon 3 and continue to capture thoughts about the following questions:

- What might the future system look like? It is fine to have differences of opinions, try to understand the reasons behind the differences and capture these on the diagram.

- How would this differ from today? What are the defining values or features?
- What is changing that could shape this future? Think about different trends and drivers.
- What is happening today that could be a signal of an emerging future? Add your ideas to the template as pockets of the future in the present.

Step 3 Exploring Horizon 2 (Future) (20 mins)

Now think about Horizon 2. Generate ideas about what might happen in the transition:

- What would this system look like? Think about what would need to be in place?
- What are some potential opportunities, innovations, tensions or challenges during this transition?



THREE HORIZONS: USING THE TOOL

Step 4 So what? Reflections. (15 mins)

Review the three horizons diagram. Reflect as a group on the story or stories that you are telling through the map.

- Imagine that you are living in the future, how did you get here?
- What happened to cause the system to start changing? What were the early signals of change?
- How did you take advantage of opportunities or innovations, how did you manage or mitigate risks?

TIPS AND TRICKS

There may be a temptation for participants to focus too much on what they want (their vision), rather than what might be. If this happens, encourage them to think about different possibilities, and futures that may be less ideal. You can use three horizons to create a vision (see Option 2).

People can get overly focused on the shape of the curves. Let participants know they're not doing anything complicated! Reassure them that the curves only indicate that all horizons are present at the same time – but that each is dominant at different times.

FIND OUT MORE

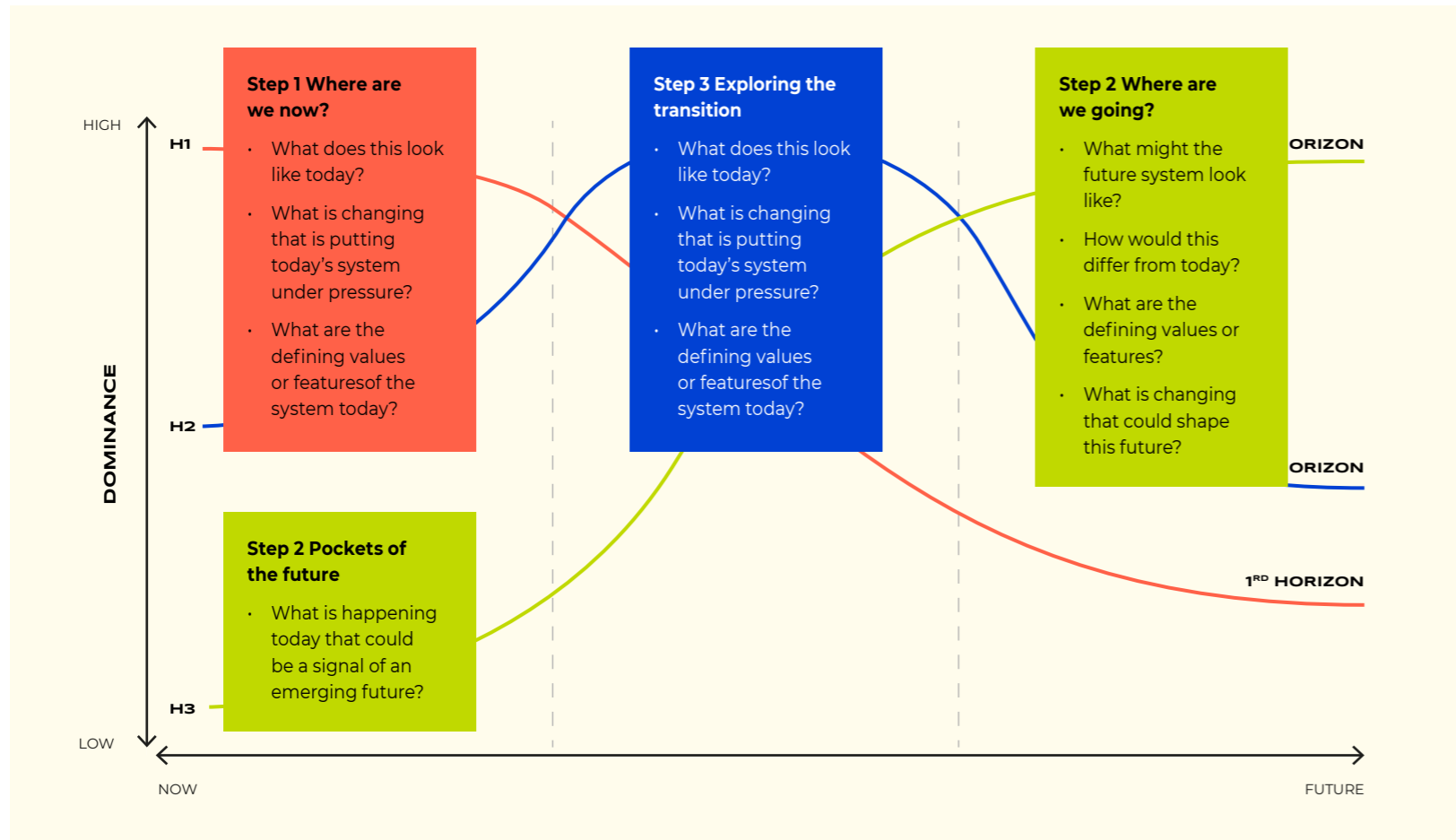
Visit [H3Uni](#) for more on the three horizons methods and how to use it.⁴³

Read *Three Horizons: The Patterning of Hope* by Bill Sharpe⁴⁴ for more about the tool and how to think about systems change.



THREE HORIZONS

OPTION 1: EXPLORING AN ISSUE OR CHANGE



SO WHAT? REFLECTIONS

Imagine that you are living in the future, how did you get here?

What happened to cause the system to start changing?
What were the early signals of change?

What opportunities, innovations or risks existed in the transition?

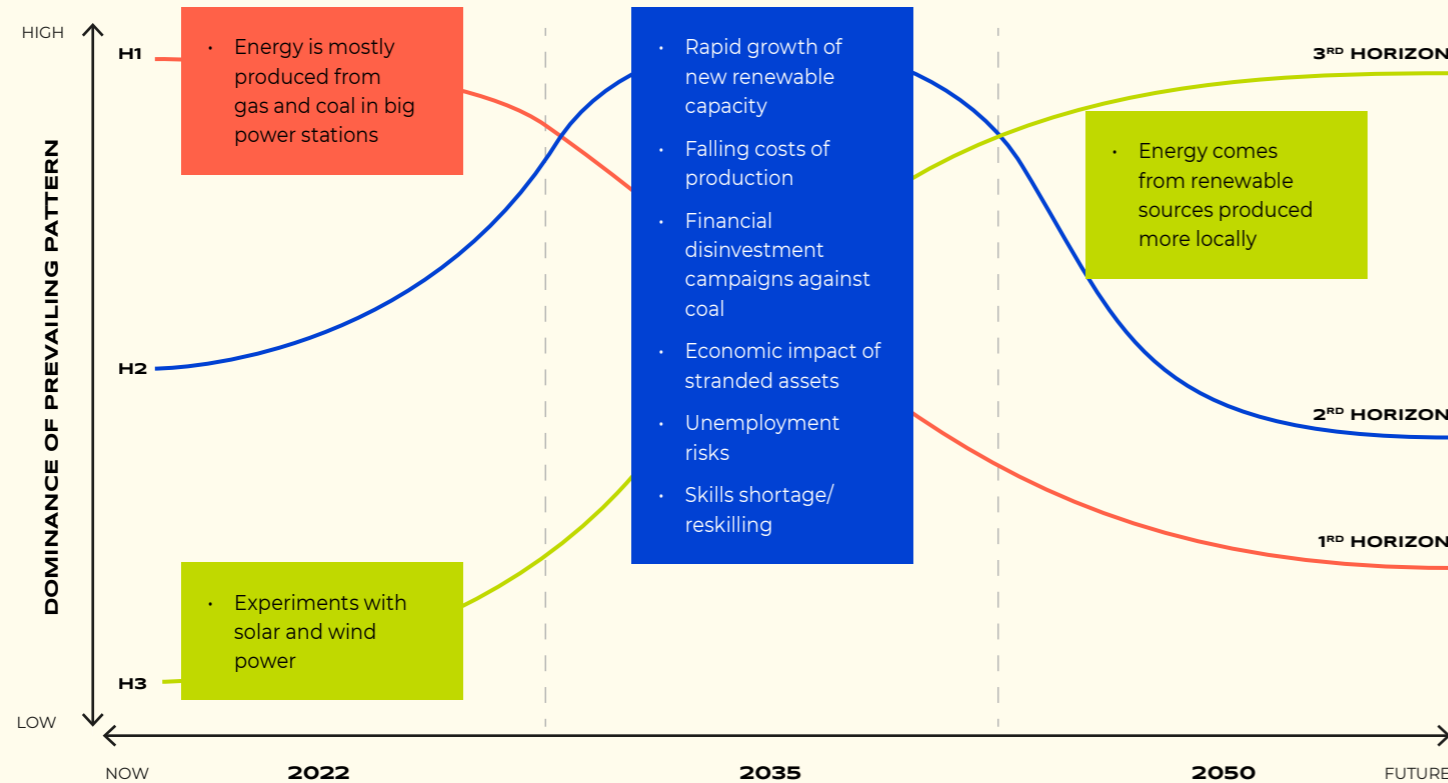
How did you take advantage of opportunities or innovations, how did you manage or mitigate risks?



THREE HORIZONS: ENERGY

SO WHAT? REFLECTIONS

A WORKED EXAMPLE ON ENERGY



Imagine that you are living in the future, how did you get here?

We transitioned away from a centralized energy grid, reliant on carbon fuels. Today we have local energy grids and renewable energy.

What happened to cause the system to start changing? What were the early signals of change?

The underlying economic conditions changed, with falling costs of renewables, improved technology, and better incentives for change.

What opportunities, innovations or risks existed in the transition?

As technology and costs fell, this opened up new markets and opportunities for local and off-grid energy. There were economic challenges and disincentives within the system that slowed the transition. A key barrier to change was the availability of skilled engineers, as well as more general sector skills.

How did you take advantage of opportunities or innovations, how did you manage or mitigate risks?

We managed to solve the issues around skills through educational schemes and re-training. We changed how we valued assets with new financing and asset management strategies that placed a great focus on sustainability.



THREE HORIZONS

OPTION 2: DEVELOPING A VISION

STEP BY STEP

Step 1 Think about the future, what would you want the future to look like? You can use a news headline or visioning exercise (see Vision) to help you do this, ask yourself:

- What would it look like to live in this future?
- How are the values of society different?
- How would you describe this future?
- How does this future reflect your core values?

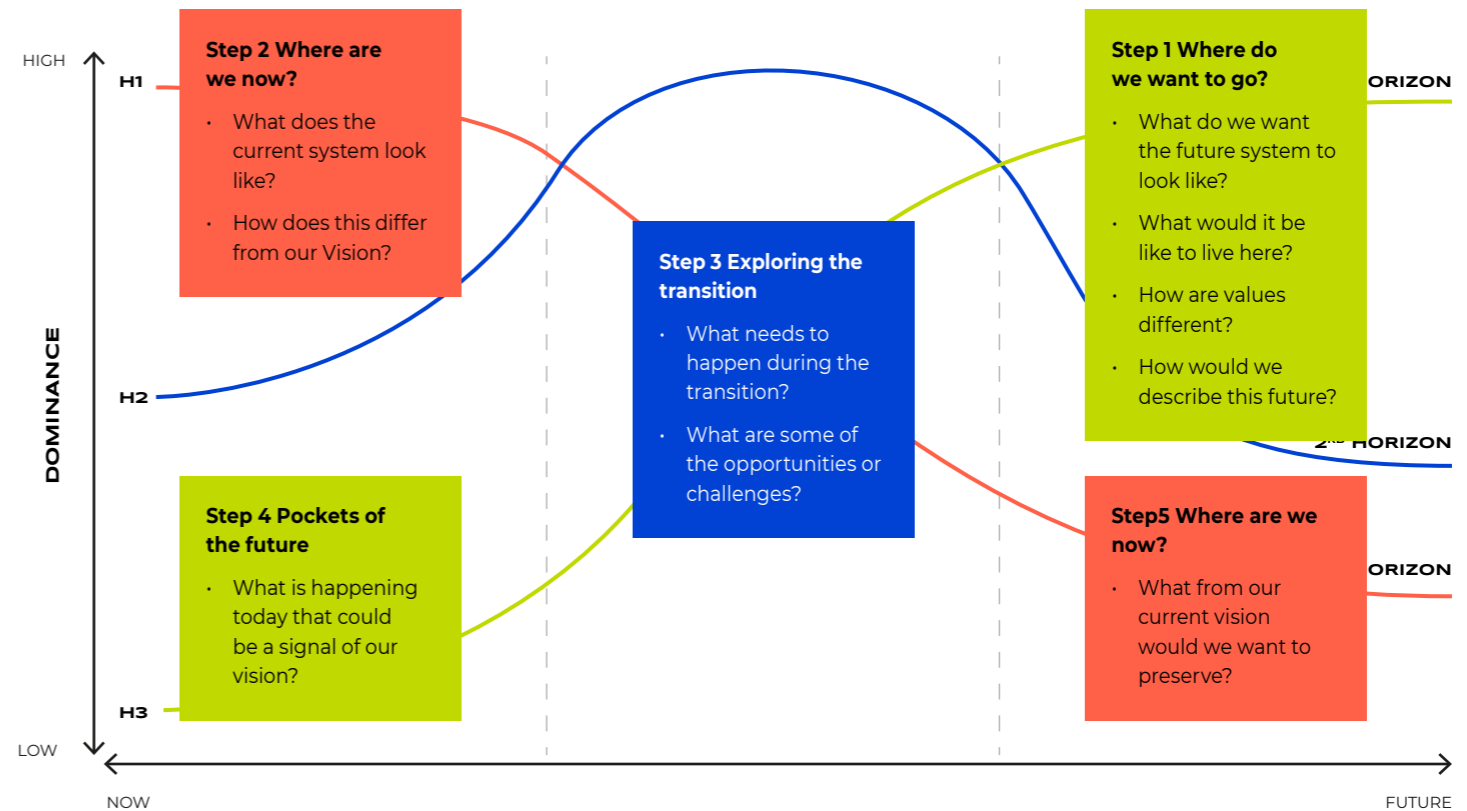
Step 2 Move to Horizon 1, and ask what does the current system look like? How does this differ from our Vision?

Step 3 Move to Horizon 2, what needs to happen during the transition? What are some of the opportunities or challenges during the transition?

Step 4 Think about the pockets of the future in the present? What is happening today that could be a signal of our vision?

Step 5 Ask yourself, what from the current system would we want to preserve?

At the end of the exercise reflect on what you can start to do to work towards your vision. What needs to be done by others? What are some of the barriers to change?



THREE HORIZONS

OPTION 3: EXPLORING AN EMERGING SCENARIO

STEP BY STEP

You can follow the same steps as in Option 2, but this time starting with a particular scenario. Make sure you have a shared understanding of the scenario before you start.

Step 1 Start in Horizon 3 and assume that you are exploring a future in which your scenario has emerge. You should assume that you are living in a the world described by you scenario. What are the key features of this scenario?:

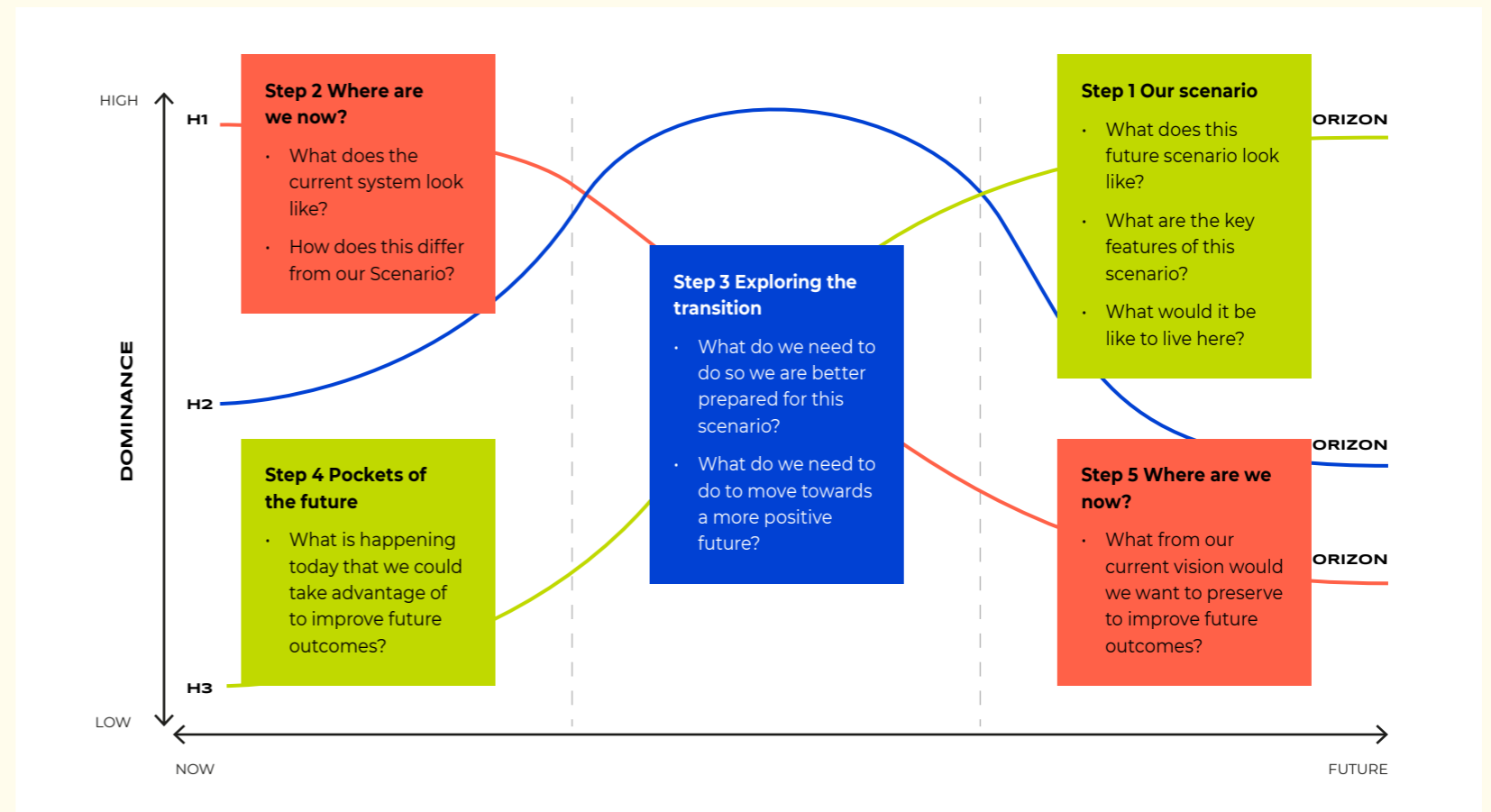
Step 2 Move to Horizon 1, and ask what does the current system look like? How does this differ from the scenario?

Step 3 Move to Horizon 2 and think about two questions:

1. What do we need to do so we are better prepared for this scenario? This is about preparing for a particular scenario. What would you need to do during the transition to be ready for this scenario?
2. What do we need to do to move towards a more positive future? Think about :
 - what are the more positive features of your scenario? How could you enhance these?
 - what are the more negative aspects of your scenario? How could you recover from or mitigate against these? This is about shaping the future.

Step 4 Think about the pockets of the future in the present? What is happening today that we could take advantage of to improve future outcomes?

Step 5 Finally, think about what from our current vision we would want to preserve to improve future outcomes?

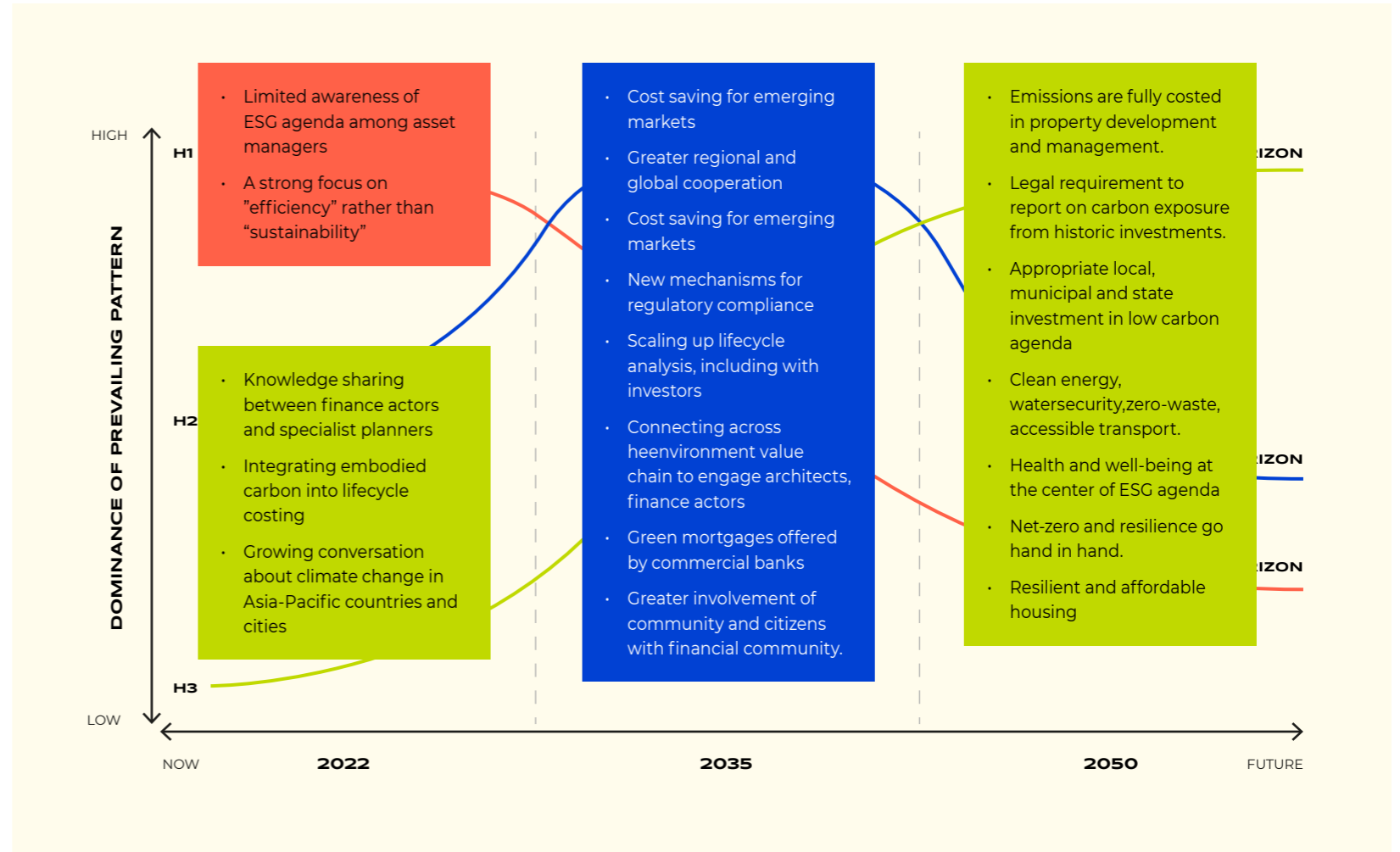


THREE HORIZONS: SUSTAINABLE URBANIZATION

A THREE HORIZONS EXERCISE EXPLORING SUSTAINABLE URBANIZATION

This Three Horizons example explores how sustainable urbanization could look in urban environments in Asia by 2050. It has been adapted as an example.

It comes from a workshop where participants explored four key themes: resilience, technology, planning and financing. It has been adapted and made anonymous for this purpose. The three horizons model shown is from a group exploring financing.



3. IMAGINE ALTERNATIVE FUTURES

CREATE CONTRASTING, COHERENT FUTURES USING DRIVERS OF CHANGE AND IMAGINE NEW POSSIBILITIES.

When a system is well-understood, it can be used to explore alternative futures. This is necessary as the future is non-linear, and therefore is unpredictable.

There are many effective tools and methods for this, including scenario building. The key point, however, is to be able to move away from a fixed idea of the future to identify alternative, yet credible, futures.

There are many different ways to do this. We are sharing two in this toolkit. The first is a simple,

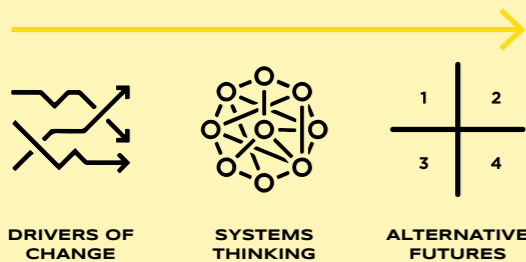


Figure: Fundamental building blocks of foresight

structured approach to creating a set of scenarios. The second, helps you rapidly imagine alternatives by coloring the future.

USING SCENARIOS TO THINK SYSTEMATICALLY ABOUT THE FUTURE.

Scenarios are a way of managing uncertainty about the future.⁴⁵ A successful set of scenarios helps you to shift your thinking beyond the constraints of today so we can prepare for a wider range of eventualities, and imagine new possibilities.

Each scenario should be distinctively different from the others. They should be easy to understand and combine both logic and story-telling to quickly understand the strategic relevance and implications of the scenario set.

“A scenario is a story with plausible cause and effect links that connects a future condition with the present, while illustrating key decisions, events, and consequences throughout the narrative.” (Futures Research Methodology Version 3.0, Glenn 2009).⁴⁶

WHY THINK ABOUT ALTERNATIVE FUTURES AND SCENARIOS?

There are many different ways to imagine alternative futures. There are also a myriad of scenarios approaches. Some are more intuitive, others more technical; some values-driven, others more focused on structure.

You do not need to use scenarios. The key is to think about a plurality of futures, rather than a single, linear-view of the future.

The two that we introduce in this toolkit have been chosen for different reasons:

- The 2x2 scenarios method⁴⁷ is a useful tool in policy and strategy. It helps create a scenario framework that is logical, easy to communicate. It provides structure through which to imagine different futures.
- The Systems mythologies⁴⁸ are more intuitive and values-driven. The variation we have included is designed to allow you to use these quickly to generate novel insights.

For more information on other scenario methods, please see the [resources section](#).

TOOLS TO USE:



2x2 Scenarios Identify critical uncertainties and use these to imagine alternative futures.



Systems mythologies Rapidly imagine different systems using these thinking hats.

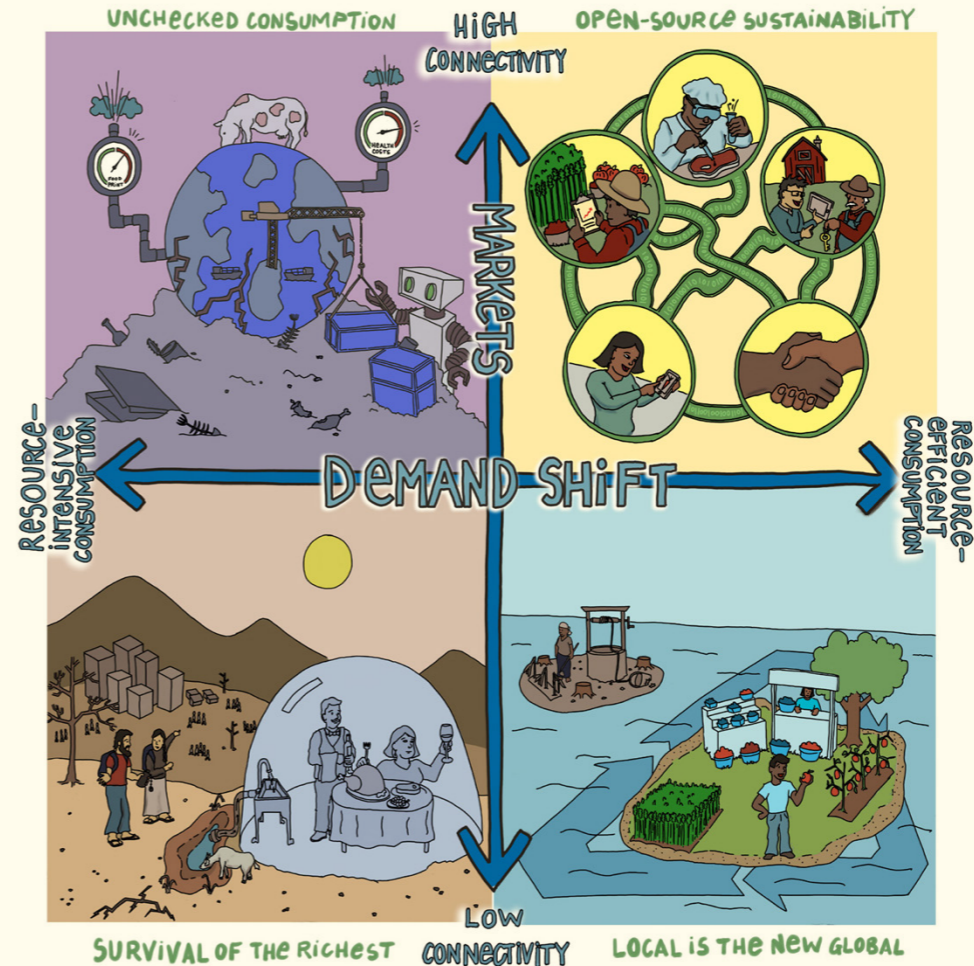
2X2 SCENARIOS

IDENTIFY CRITICAL UNCERTAINTIES AND USE THESE TO IMAGINE ALTERNATIVE FUTURES

Why would you use this? Scenarios help you to imagine how change may look in the future, imagining new and alternative possibilities.

How can it help you? Scenarios help you to gain rich insights into how the future could emerge by developing a set of alternative stories about the future. They can be used as a social learning process to help develop shared and challenging perspectives on the future. As a scenario set they allow you to imagine new possibilities and identify strategic opportunities and risks that can inform strategy, planning and decision-making today.

What it is There are many different scenario methods. The tool detailed here, a double uncertainty or 2x2 approach, is a structured approach to thinking about the future. It uses pairs of critical uncertainties—drivers of change that have uncertain or unpredictable future trajectories but will have high impact on the future—to create a simple scenario framework in which to imagine alternative futures.⁴⁹



Example scenarios: The World Economic Forum's scenarios for the future of global food systems in 2030.⁵⁰



2X2 SCENARIOS: USING THE TOOL

WHAT DOES THIS TAKE

 **2 hours**

 **4+ participants**

 **Medium**

The 2x2 approach is sometimes described as “the Shell approach” but originally comes from SRI, a West Coast futures consultancy in the 1980s. It was popularized in *The Art of the Long View* by Peter Schwartz.

It is a relatively structured approach to scenario building, based around the identification of two critical uncertainties through a Driver Mapping exercise.

Scenarios are not predictions. The idea is that they offer interesting—sometimes challenging—ideas about the future.

They are used to explore alternative ways that the future may develop. It is important to consider more than one scenario, and by having a set of scenarios, you can test how different interventions may work under different conditions.

STEP BY STEP

There are two key elements that you need before you start: a defined focal issue, and an agreed time horizon.

If you don’t have these yet, you can use the scoping circle to support your thinking.

Step 1 Driver mapping Introduce the focal issues and time horizon. Ensure there is a shared understanding.

Then split into small groups. Work individually, or in pairs, to generate a set of ideas about drivers of change that could affect your focal issue over this time horizon.

Each person should aim to identify four to five key drivers to share with the group. Encourage them to identify a variety of drivers from across the STEEP categories. You can use this [template](#)⁵¹ to help.

Step 2 Share and prioritize drivers Share your ideas as a group. As you share, have a discussion about these drivers and start to prioritize these on a matrix.

Work together to group similar ideas and consolidate them if appropriate.

Once you have shared, cluster these on a prioritization matrix ([template](#)) based on the groups view of the impact and uncertainty associated with the drivers.

Step 3 Identify the critical uncertainties Look at the top right corner of your matrix. These are your critical uncertainties. Try to identify two or three critical uncertainties to use in the next step, when you generate your scenario framework.

Keep a shortlist of other high impact drivers, as well as any ideas that feel like potential wildcards. You’ll use these later in the scenario-building process.

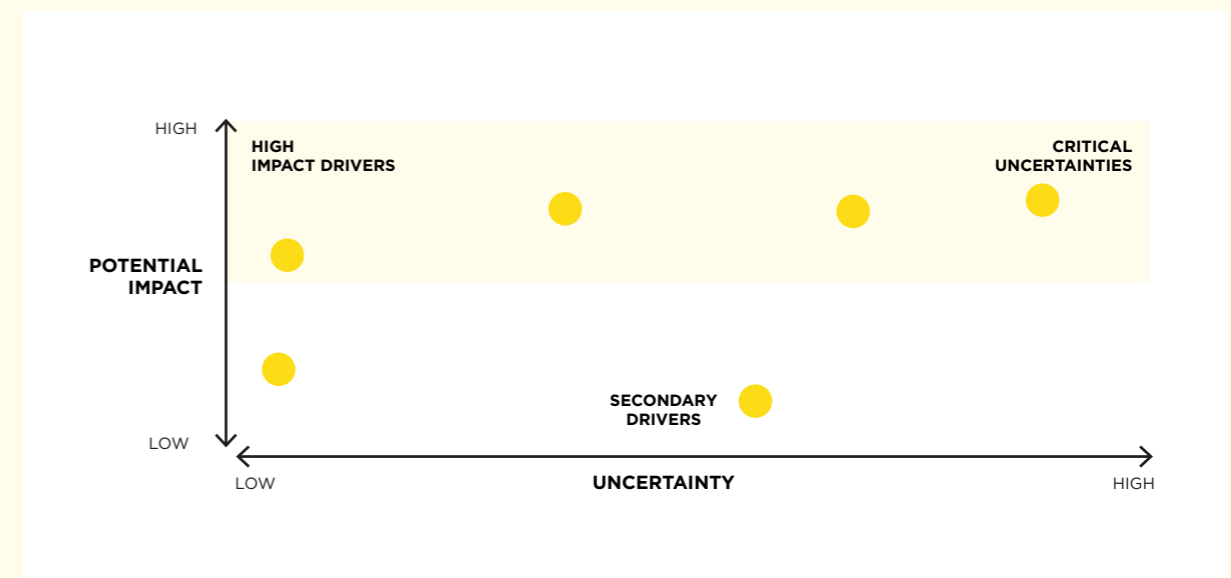


Figure: Prioritize drivers based on their potential impact and level of uncertainty.



2X2 SCENARIOS: USING THE TOOL

Step 4 Developing scenario axes Review and discuss each 'critical uncertainty' as a group.

Can you think of two quite different ways in which each one may manifest in the future?

Ask the group to describe the ways the drivers could play out in opposite ways.

The same driver can have multiple interpretations. It is important to explore different possibilities and decide what would work best to create contrasting scenarios through which to explore the focal issue.

For example, the driver 'Global security' could create different kinds of uncertainties.

Step 5 Set up your scenario axes Ask the group to think about which of their critical uncertainties might combine to generate a set of four interesting scenarios.

They want to select two drivers. These should not be obviously linked. Avoid having two drivers from the same STEEP category, or uncertainties that have an obvious relationship (cause and effect).

Choose your scenario axes and draw them up on a [scenario template](#).

For each scenario, have a quick discussion to check that they feel useful and worth exploring:

- Are they intuitive?
- Are they relevant to your focal issue ?
- Are they meaningfully different ?

Once you have a set of axes that might work, give each quadrant a title.

Step 6 Developing the scenarios Introduce the shortlisted drivers of change from Step 2 (drivers mapping). Which other uncertainties feel important to explore? What might they look like in each scenario? Which drivers are high impact (but relatively certain) that need to featured?

Decide as a group how these drivers might look in each quadrant before continuing to develop stories.

The WEF, working with Deloitte Consulting, used a used a 2-axis approach to explore "How will food systems nutritiously and sustainably feed 8.5 billion people in 2030?"

Looking out from 2017, they identified two critical uncertainties:

- 1. Demand shift:** exploring resource-intensive and resource-efficient demand for food and agricultural commodities and whether it will be environmentally friendly.
- 2. Market connectivity:** whether there would be open trade, trusted and resilient commodity markets, inclusive of technological innovations.

The two uncertainties, were used to create four potential future worlds. Survival of the Richest, Unchecked Consumption, Open-source Sustainability or Local is the New Global.

You can find out more and read the [scenarios online](#).

THE SCENARIOS: FOUR POTENTIAL FUTURE WORLDS

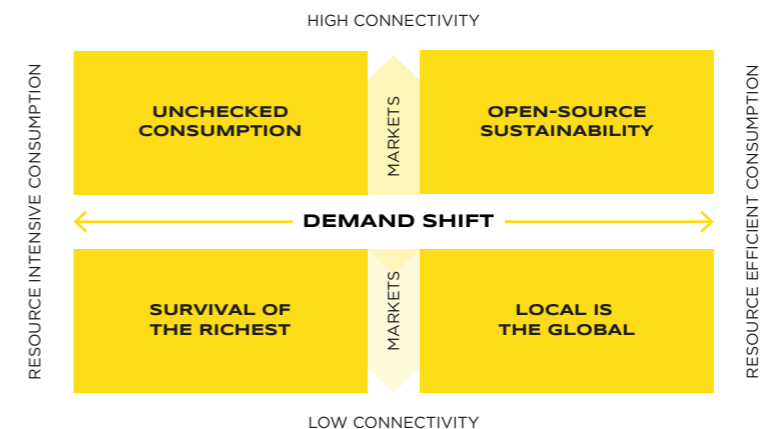


Figure: The World Economic Forum's scenarios for the future of global food systems in 2030



2X2 SCENARIOS: USING THE TOOL

Step 10 Write your stories

Now start to write a story that ties together the elements of your scenario. Stories do not have to be long, but they should help your reader understand the scenario and bring it to life:

- Be set in the future, written in the present tense.
- Help your reader understand how the world has emerged (e.g. once upon a time, and then...)
- Describe the key features of the world telling the story of how people and communities are affected.

To help you do this it can be helpful to think about what different characters might be doing in the future. How are they living? What do they value? How are they impacted in this scenario?

Another useful technique is [VERGE](#)⁵², which is an ethnographic technique for exploring future change through six domains of change:

- **Define:** The concepts, ideas and paradigms we use to define the world around us
- **Relate:** The social structures and relationships which link people and organizations
- **Connect:** The technologies used to connect people, places and things
- **Consume:** The processes and technology through which we consume goods and services
- **Create:** The processes and technology through which we create goods and services
- **Destroy:** The ways in which we destroy value and the reasons for doing so.

When working with these domains consider them from different perspectives e.g. citizens, companies, governments, students, pensioners.

Alternatively, use news headline to bring your story to life, or think about what objects, or artifacts might exist in this future.

TIPS AND TRICKS

A good scenario is not an abstract analysis of trends. It tells a believable story set in the future and should involve the audience in the same way a short-story writer does.

You are not trying to predict the future. You are trying to describe one possible future, among an infinite number. You won't get it right, but you can make it meaningful and useful for your audience or 'client'.

A good scenario helps us to "reperceive the present"⁵³ — it illuminates the project question and brings new insight.

from a different (perhaps surprising) angle. It creates a future world that has implications for how best to respond to the challenge that has been set. It can be used to test possible responses to the challenge.

FIND OUT MORE

- Example [food scenarios](#) from the World Economic Forum (2017)⁵⁴.
- Read more about different scenario approaches and methods in this [short paper](#).⁵⁵
- Explore the [VERGE framework](#)⁵⁶ in this article by Richard Lum.
- Find out more about design fiction and experiential futures in this [article](#)⁵⁷.



EXAMPLE: MEGA SCENARIOS FOR THE FUTURE OF CALIFORNIA

Building on its work on issue-based future scenarios for the state, California 100 developed a set of scenarios⁵⁸ in partnership with the Institute for the Future.

These Mega Scenarios looked 10, 30 and 100 years into the future to explore how deep underlying drivers of change—technology, climate change, inequality and societies shared understanding — could impact California's future.

The scenarios suggested different options for what the state might look like in the future. Ultimately, this led to a set of public policy reports⁵⁹ exploring possibilities on topics from agriculture and food, governance, media and civil society, education, inequality, energy, urban planning and criminal justice.

California has seen several unlikely scenarios come to pass, including the worst global pandemic in over a century and a war in Europe that is exacerbating inflation in a variety of ways. The Mega Scenarios, supported by the listening sessions have been an important step to get Californians more prepared for future scenarios.

The scenarios used two critical uncertainties to create sets of four scenarios, or alternative futures for California.

A summary of the 10- and 30-year scenarios is provided here. You can read the full scenarios online.⁶⁰



Image: The mega scenarios and 14 policy reports. Click on the boxes to read or visit california100.org/research



EXAMPLE: CALIFORNIA 100 MEGATRENDS

THE 10 YEAR SCENARIOS

The 10-year scenarios asked “What kind of a state does California want to be ten years from now?”. They focused on two critical uncertainties:

1. Whether California would transform politically in response to emerging issues, or whether it would operate from a similar status quo as today.
2. Whether Californians would choose policies that are inclusive of the entire state’s population, or whether they would choose to divide the state into enclaves with policies decided at the local and community level.

The two uncertainties created four scenario spaces:

- **Texas done right:** freedom, choice, and diversity – at a price.
- **California New Deal:** transformative progressive reforms – at a cost
- **Together in the struggle:** with limited bandwidth, making the best of a difficult situation
- **Protecting one’s own** community (or self) preservation amidst adversity limited bandwidth

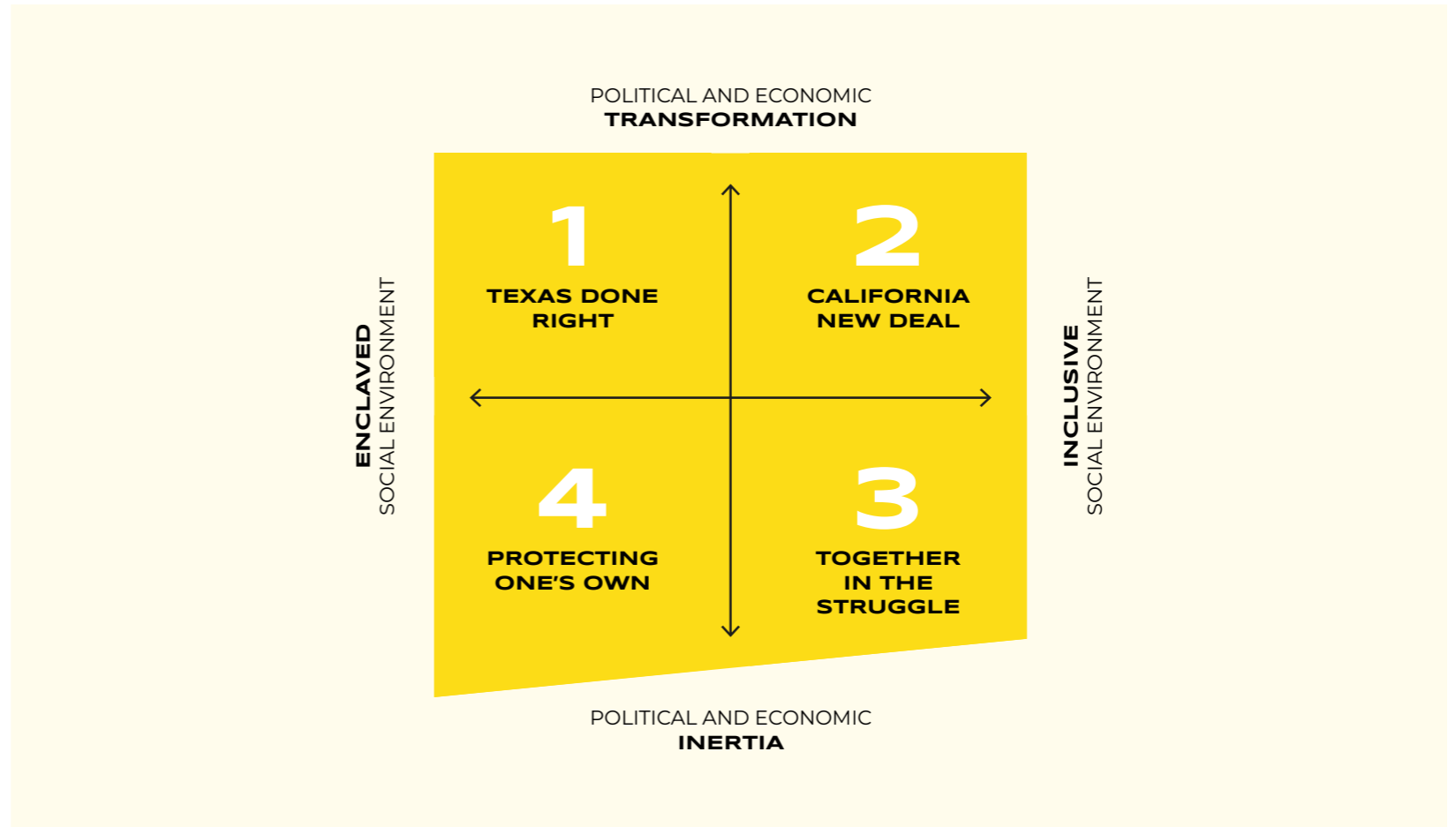


Image: Scenario framework for the 10-year scenarios



EXAMPLE: CALIFORNIA 100 MEGATRENDS

THE 30 YEAR SCENARIOS

The 30-year scenarios were extensions of the 10-year scenarios. As we move out further in time, this time focused more around long-term changes in two critical uncertainties:

3. At the level of global coordination amongst the nations of Earth to address the existential crises of climate, energy, war, disease, food, and other planetary issues
4. At the level of independence and alignment for the state of California in terms of its relationship with the federal government, and its relative profile in world politics.

The two uncertainties created four scenario spaces:

- **Seeds of a new world** A global network of cities steps up to provide agile, regional leadership
- **Getting it done** California sets its own agenda on a global stage, building allies
- **Don't worry** Working internationally to tackle existential threats, despite top-down control
- **Great Power Rivalries** held back by U.S. and global politics

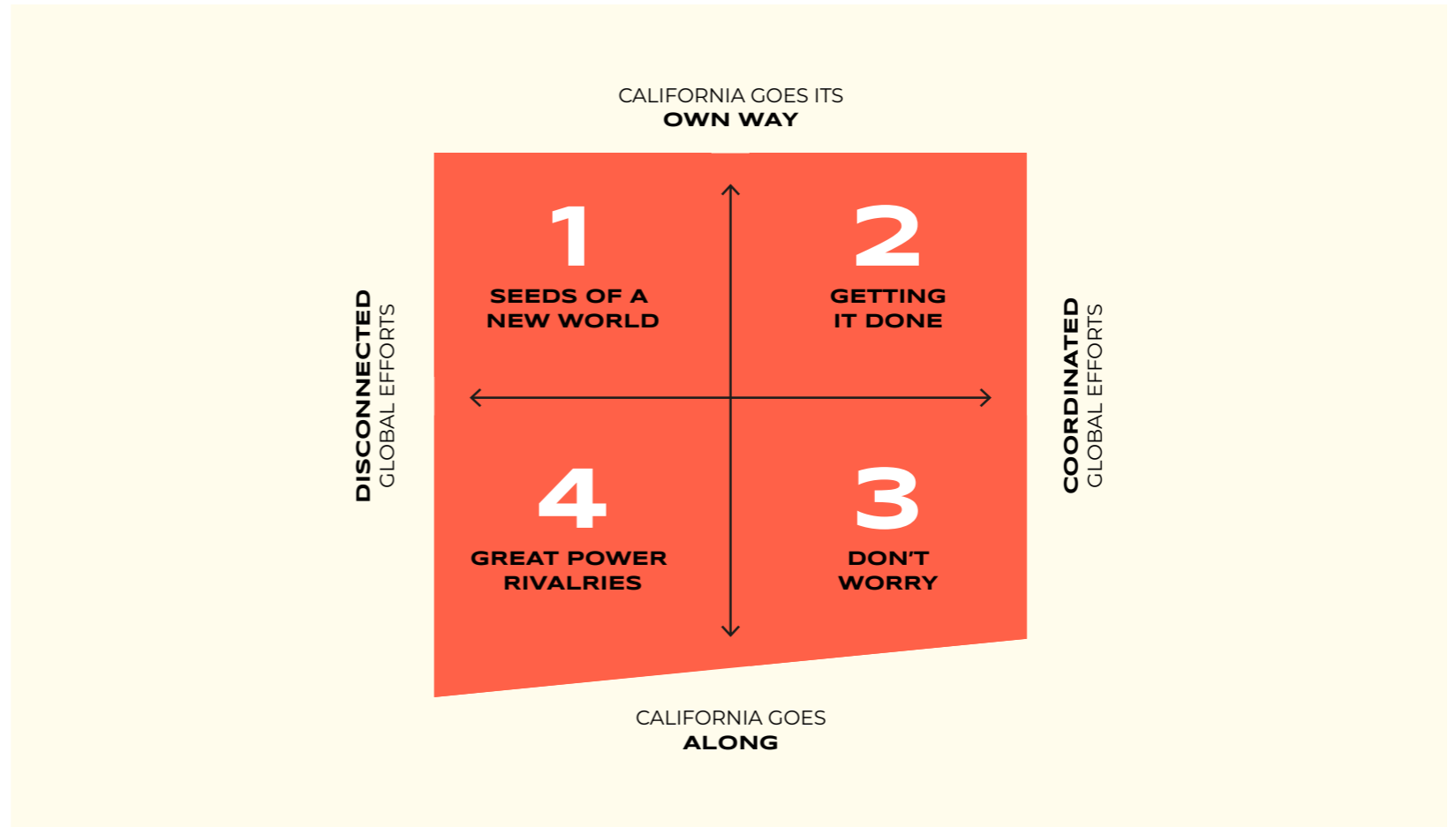


Image: Scenario framework for the 30-year scenarios



SYSTEMS MYTHOLOGIES

STEP QUICKLY AND EASILY IN AND OUT OF THE SHOES OF OTHERS — TO EXPLORE AN ISSUE FROM DIVERSE PERSPECTIVES.

Why would you use this? This method is designed to enable people to step quickly and easily in and out of ‘the shoes of others’. This helps you rapidly imagine different scenarios.

How can it help you? Systems Mythologies⁶¹ describes four archetypes of meaning, each represented by a color—blue, red, green and purple. Any issue can be explored through the lens of each archetype to generate insights.

How it works The approach presented here makes use of these four Systems Mythologies as a rapid assessment tool. Individuals or small groups first review a future-facing issue from the perspectives offered by each of the four color systems, and then identify and evaluate opportunities and risks emerging.

ISSUE, QUESTION OR TECHNOLOGY

Red System

How would it look as an advertised product, poised to dominate the market? How could it be used as a weapon, creating imbalances of power between those who have access to it and those who don't?

Blue System

What would this look like if it was embedded in the infrastructure of society, a utility or algorithm as fundamental as the power grid? How would it contribute to the automation of human labor in a future of computer controlled smart environments?

Purple System

What version of it will violate social norms, but potentially spark a new paradigm? What breakthrough design will be heralded as visionary by some, and as ludicrous by others?


Green System

How does it look when its hacked together in a garage and donated to the open-source movement? How could it empower individuals and communities to create and experiment, developing a following with a life of its own?



SYSTEMS MYTHOLOGIES: USING THE TOOL

WHAT DOES THIS TAKE

 **40-90 mins**

 **4+ participants**

 **Low**

Systems Mythologies was developed by the Institute for the Future (IFTF).⁶² It describes four archetypes of meaning, each represented by a color — blue, red, green and purple.

The approach here was developed by SOIF. It uses the mythologies as an approach similar to Edward de Bono's 'thinking hats'⁶³ or Marshall McLuhan's Technology Tetrads⁶⁴. It is an effective approach to imagining alternative futures.

It can help you to develop novel and contrasting views of the future.

STEP BY STEP

Step 1 Agree on the issue Agree on the issue that you want to explore and your time horizon. Make sure there is a shared understanding why the issue is important.

Step 2 Imagine the future from different perspectives Work through each of the colors—systems mythologies— one at a time (see next page for the descriptions and prompts). You can use this [template](#) to capture your thoughts.

- Spend a few minutes orienting yourself to the worldview of the people who live here—what enthuses and excites them?
- Identify what they would seek to do with the change, issue or question under review, and list these out.
- Go round all four, repeating this process and capturing your ideas about what the future could look like.

Step 3 Consider the so what Review your outputs for each color. In response to each, think about:

- What are the opportunities in the future that we could take advantage of?
- What are the threats ? (note: some opportunities may also be threats)
- What new questions is this raising that we might need to explore further or research?
- What are some of our personal or organizational blindspots?

Step 4 Prioritize Prioritize your answers. You can use a voting approach, or just have a conversation about the opportunities, threats, questions or blindspots you think are most important.

TIPS AND TRICKS

We recommend that you start at the Red or Blue System description and work clockwise. The order is deliberate as we believe that this leads to a richer conversation based on our experience using this approach. But feel free to ignore this!

Consider your own perspectives. As individuals, would you consider yourself a red, green, blue or purple thinker? How could you use this to be intentional about creating diverse teams?

Who else might you want to consult to bring additional insights?

FIND OUT MORE

Read the [systems mythologies](#) toolkit from IFTF.⁶⁵



SYSTEMS MYTHOLOGIES: THE MYTHOLOGIES

The **blue** archetype values structure, logic, and objectivity. It is the color of planners, scientists, accountants, referees, engineers, and coders.

Blue roles follow set rules to achieve predetermined outcomes. Strategies are centralized, all-encompassing designs that attempt to address the entire system from one set of principles.

Blue is a central command console with labeled buttons and blinking lights that monitor and adjust every aspect of the system.

Blue environments are giant machines, designed for achieving specific goals by following an established circuit. They are laboratories, power grids, data centers, traffic infrastructure, and hospitals.

Prompts:

- What would this look like if it was embedded in the infrastructure of society, a utility or algorithm as fundamental as the power grid?
- How would it contribute to automation of human labor in a future of computer controlled smart environments?

The **green** archetype values inclusiveness, emergence, and creativity. It is the color of grassroots movements and thriving ecosystems, of residents, community organizers, musicians, settlers, farmers, and artists.

It is playful and organic, and will grow according to its own innate potential and unique personality. It's a canvas begging to be painted, and an organism in search of its true self. Green feels alive and relatable, but it doesn't take orders.

Green roles respond to the natural rhythms of their environment.

Prompts:

- How does it look when it is hacked together in a garage and donated to the open-source movement?
- How could it empower individuals and communities to create and experiment, developing a following with a life of its own?

The **purple** archetype values mysteries, hidden truths, and the unknown. It is the color of, visionaries, sorcerers, shamans, spies, priests, and aliens.

Purple roles peek behind the curtain of the known world to the world beyond.

Purple thinkers step outside of the box and any metaphor involving boxes. Purple strategies include voyages, dreams, experiments, magic spells, and expeditions

This is at the edges of our understanding, strange worlds and new paradigms.

Prompts:

- What version of it will violate social norms, but potentially spark a new paradigm? What breakthrough design will be heralded as visionary by some, and as ludicrous by others?

The **red** archetype values heroes, competition, and winning. It is the color of agency, urgency, and blood. It is passionate and driven, and will do whatever it takes to succeed. Red is behind every war and every love affair, and will rear its head any time a line gets drawn in the sand.

Red roles drive the story forward and don't back down until they've won.

Inside a red system, individual players are free to make their own choices, and are responsible for their own survival. Red is a marketplace and a battlefield.

Prompts:

- How would it look as an advertised product, poised to dominate the market?
- How could it be used as a weapon, creating imbalances of power between those who have access to it and those who don't?

Source: Adapted from [IFTF systems mythologies](#).⁶⁶



SYSTEMS MYTHOLOGIES: SPACE

THIS EXAMPLE EXPLORES THE FUTURE OF OUTER SPACE.

Looking at this through the four systems lenses, we might expect to see the following types of observations. Obviously the more specialist insight that is brought to bear on this discussion, the richer the outcomes will be.

Opportunities, for example, might include the ability to stabilize space activity, and reduce the risk of bad actors, by engaging fully with 'Blue' proposals on regulating space.

They might also include using the 'open source' mapping activities of Green actors to supplement other communications analysis.

Threats might include the risk that an anonymous friendly satellite is spotted by Green actors.

New analysis might include a review of the prospects for Red actor interplanetary mining. Given that most reports suggest it is difficult to make viable, some further analysis might focus on unintended consequences of failed attempts to develop mining in space.

Blind spots might include some social analysis of the possible effects of the growth of Purple perspectives on space and the earth, which might include new forms of consciousness or activism.

Red system

Red systems thinking sees space as a resource to be exploited. Space tourism, of course, but beyond that an opportunity—potentially for mining and resource extraction. Expect ownership or property claims to be made for parts of the moon. Red thinkers will also look for geopolitical advantage from data collected from space.

Green system

Green systems thinking sees space as a 'commons' that should be managed for the public global good. In this lens there are concerns about the impact of space debris on astronomy, and of the way in which unmanaged debris creates risks to other space users. Green activists start an open source database tracking satellites and other space activity, to attribute activity as part of a campaign to make space actors responsible for external costs.

Blue system

The blue system sees space as being managed through a structure of agreements and conventions—in the same way that the Arctic has been regulated. Blue thinkers will be looking to reinforce existing agreements on the use of space, perhaps looking for a Convention on Space to reinforce existing agreements. Similarly, they might be looking for agreements about the use of data gathered from space.

Purple system

Purple thinkers will be asking about what types of surprises the new wave of space travel and exploration will afford. For example, they might wonder if increasing the numbers of people who have seen the earth as a whole from space might start to change people's consciousness about the earth.

Figure: Exploring the future of space through the systems mythologies.



4. NAVIGATING UNCERTAINTY

NAVIGATING UNCERTAINTY TO IMPROVE DECISION-MAKING TODAY.

Ultimately, the purpose of futures work is to improve the decisions we make today. The key benefits⁶⁷ of a strategic foresight approach is that it helps you to:

Build vision Make strategic choices to shape the future you want

Manage risk Build preparedness for alternative possible futures

Awareness and Agility Create future-ready and alert organizations that can adapt as the future evolves

THE TOOLS IN THIS SECTION PROVIDE A SYSTEMATIC APPROACH TO DO THIS — BRINGING THE FUTURE BACK TO THE PRESENT.

The idea is that once you have understood your alternative futures, you need to understand what you would like to happen (vision).

You can then work backwards to think about how these futures might emerge (back-casting).

You can then test your policies, plans and strategies to see if they will help you to work towards your vision, or to mitigate against less desirable outcomes.

This helps you identify what you want to do today— to create a better future or prepare what might happen—and what you need to do if systems start to move towards an alternative future.

By rehearsing your futures, you can be ready to respond to emerging futures or shocks.⁶⁸

TOOLS TO USE:



Vision Understand your preferred future.



Backcasting Start in the future and work back identify new pathways and possibilities.



Wind-tunneling Stress-test policies, strategies and goals against different future scenarios.

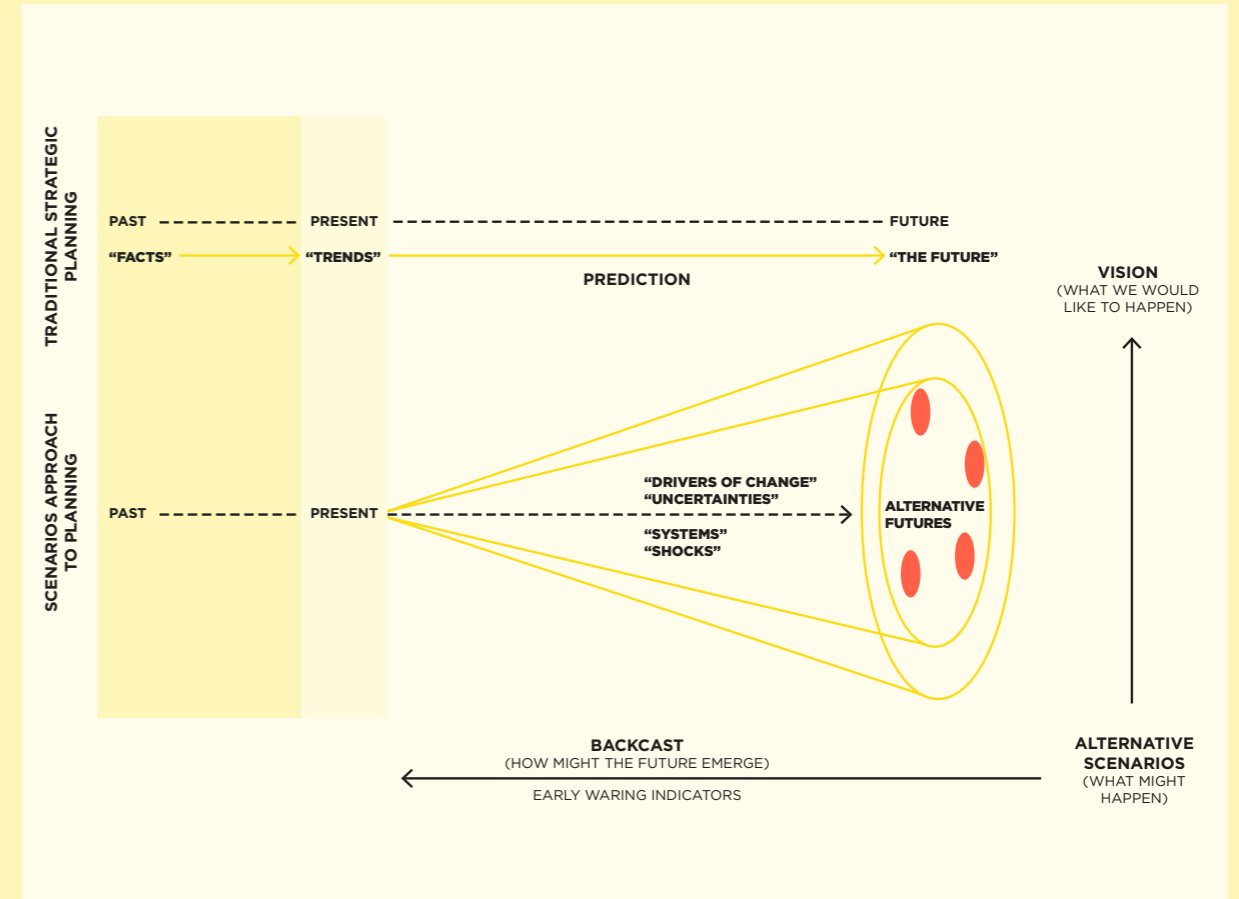


Figure: Bringing the futures back to the present. Foresight approaches differ from forecasting and other attempts to predict the future using linear trends. Foresight explores possible futures (Missing red dot), to help you prepare for alternatives, and to understand your preferred future or vision.

VISIONING

UNDERSTAND YOUR PREFERRED FUTURE.

Why would you use this? Visioning helps you understand your preferred future.

How can it help you? Visioning is an important step as it helps you understand what you want the future to look like and how it fits with your core values. It creates a sense of agency and direction over the future.

How it works A visioning exercise can be a useful next step after a futures wheel, scenario development, or other exercise that helps you think about alternative possibilities or change. The approach outlined here helps you think about what success would look like in the future using news headlines from the future.



Image: Rib Mountain, United States.

By Matt Noble



VISIONING: USING THE TOOL

WHAT DOES THIS TAKE

 45 mins

 4+ participants

 Low

Taking time to imagine a collaborative preferred future helps to move the conversation away from what we expect will happen towards what is possible.

Although you can't control the future, visioning gives you clarity over how you might influence it and what matters to you and your community.

A well-crafted vision is aspirational and helps motivate people to come together towards action.

You can use this tool to develop a generic vision for the future, or to imagine a vision for a focal issue, or a particular change that you have identified as important or interesting to explore.

Revisit insights from a 7 questions interview, particularly the optimistic and epitaph questions. When starting with a set of scenarios or three horizons exercise also look for changes that you want to enhance or discourage in different scenarios, to inform visioning.

STEP BY STEP

Step 1 Create your news headlines Work as individuals or in pairs to come up with ideas about a news headline from the future that reflects your “wildest dreams”. Depending on your focus this could be for your country, a particular city or community, or an issue that you care about.

For instance If what you want is for food systems in California to be more sustainable on its 200th anniversary in 2050, you could write:

- California enters new century of sustainable farming.

Step 2 Share your headlines Have a discussion about what they are telling you is important to your group.

Step 3 Imagine what success looks like Now think about what success would look like if you could overcome barriers to change and transform the future, for instance:

- There is no hunger and zero waste in California in 2040

Step 4 Share your ideas Share and capture your ideas as a group:

- Why do we think these issues are so important?
- What would it mean for us to achieve this?

Capture your ideas as a vision statement, for instance:

- We envision a California where we have collectively achieved zero hunger, and zero waste. Everyone has access to affordable, nutritious food. There is a strong circular economy, with local, sustainable food production.
- Think creatively about the verbs you can use for instance: to dream, to fight, to hope, to need.



VISIONING: USING THE TOOL

Step 5 Think about change Think about what else is important to enable this in the future. This includes change that may be outside of your control:

- What will it be like to live there?
- What is outside of our control that we would need to happen to enable this future?
- What can we do to achieve this?
- What is holding us back?
- What are the values that are important in our vision?

If using scenarios, or futures wheels as inputs, reflect on the changes or implications that you thought were positive or negative.

- What do you want to enhance? How can you do this?
- What would you want to discourage?

Step 6: Capture your vision Capture the key elements of your vision into a short narrative and agree this as a group. Your vision statements should include outcomes relating to people, places, communities (or even species). As you craft your vision, test this against the vision criteria (next page).

TIPS AND TRICKS

A good vision is steeped in clear values. Think about which values you would like to see out in the world, and how these relate to your core values.

Creating vision statements is an iterative process. Allow time to explore and refine the sentences proposed by the group.

Giving your vision a compelling name can help bring it to life quickly for your audience.

FIND OUT MORE

Explore how [Causal Layered Analysis](#)⁶⁹ and [Appreciative Enquiry](#)⁷⁰ can help you Vision.



VISION: FOOD SYSTEMS

A VISION FOR A SUSTAINABLE AND SECURE FOOD SYSTEM FOR 2030

The UK Government food strategy⁷¹ was developed through extensive industry consultation and discussions in 2008 and 2009. The resulting publication, Food 2030 set out the UK Government's priorities for tackling the "big food challenges" of sustainability, security and health. It is summarized below. It sets out a compelling vision that has clear end goals, embedded values. It identifies a key set of issues that need to be tackled, in response to external change. It also sets out a set of clear actions and who needs to be involved in creating change.

You can [explore the strategy here](#).⁷²

OUR VISION FOR A SUSTAINABLE AND SECURE FOOD SYSTEM FOR 2030. WHAT WE WANT BY 2030...

Consumers are informed, can choose and afford healthy, sustainable food. This demand is met by profitable, competitive, highly skilled and resilient

farming, fishing and food businesses, supported by first class research and development.

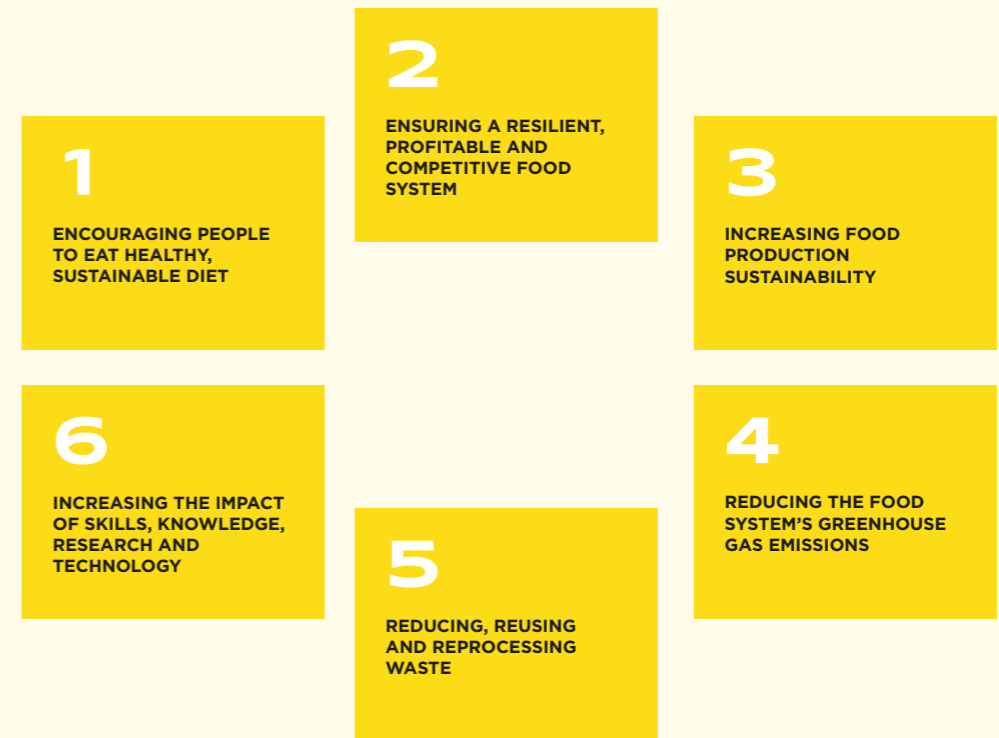
Food is produced, processed, and distributed, to feed a growing global population in ways which:

- use global natural resources sustainably,
- enable the continuing provision of the benefits and services a healthy natural environment provides,
- promote high standards of animal health and welfare,
- protect food safety,
- make a significant contribution to rural communities, and
- allow us to show global leadership on food sustainability.

Our food security is ensured through strong UK agriculture and food sectors and international trade links with EU and global partners, which support developing economies.

The UK has a low carbon food system which is efficient with resources – any waste is reused, recycled or used for energy generation.

THE STRATEGY IS STRUCTURED AROUND SIX CORE ISSUES FOR THE FOOD SYSTEM:



VISION: SUSTAINABLE DEVELOPMENT

SUSTAINABLE SINGAPORE 2015

Generations of foresight experience led the government to renew its focus on citizen-centricity through the Public Service Transformation in 2012. Shortly afterwards, Our Singapore Conversation attracted over 46,000 people who expressed their hopes and ideas for the future through facilitated dialogues with government officials.⁷³

The Sustainable Singapore Blueprint 2015⁷⁴ is a nice example as it sets an aspirational vision that was developed with its citizens, and a clear set of targets for a more liveable and sustainable Singapore, based on three pillars of sustainable development.

You can [explore the strategy and vision here](#).⁷⁵



2030 Targets

Today, we stand on the efforts of Singapore's pioneers and those who came before us in our quest to create a sustainable and liveable Singapore. We hope to build upon this foundation, set stringent targets to serve our people and environment, overcome constraints through innovative solutions, and turn obstacles into opportunities for growth. Each person plays a role in creating a liveable and endearing home, a vibrant and sustainable city, and an active and gracious community.

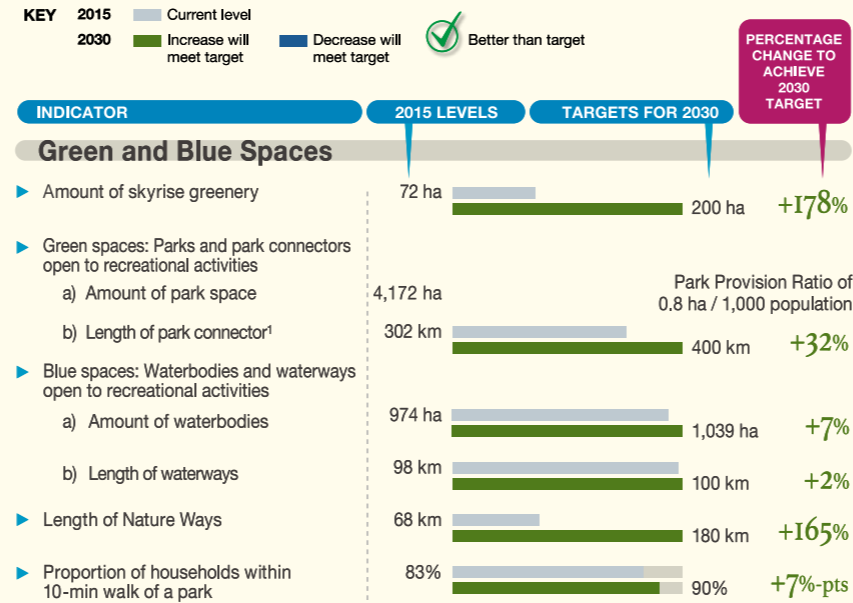


Figure: Visualization of targets for 2030 from the Sustainable Singapore Blueprint 2015.

DEVELOPING AND THINKING ABOUT CORE VALUES

WHY CORE VALUES?

The success of any type of collective action, either within an organization or across organizations, often requires clarifying and agreeing on core values and principles. This is especially for collective action under contexts of critical uncertainty, as core values serve as an anchor for collective prioritization and decision making under changing circumstances. Put very simply, we are much more likely to go far with a “coalition of the aligned” than with a “coalition of the willing” that has not yet aligned on shared values and principles.

CLARIFYING YOUR CORE VALUES

Concepts like innovation, resilience, inclusion, sustainability, equity, and human dignity are rich and resonant in many societies today. But what do each of these terms mean? Vagueness on concepts may serve some useful purposes, as organization leaders seek to build interest and initial buy-in among key partners or team members. Soon, however, the lack of specificity in core values will tend to cause misunderstandings, misalignment, and frustration.

BRAINSTORMING TO GAIN CLARITY ON VALUES

When defining core values, it may be helpful to consult a dictionary to gain a general understanding of how a society conceives of a particular topic. In many instances, however, your organization or sector may have a very different understanding of a particular value than what is included in standard dictionaries. Word association exercises, involving key partners and team members, can help your organization gain more clarity on its core values among internal audiences. Thinking further ahead, you may also find it useful to engage a select or representative group of your key external audiences, in order to better understand how your core values may resonate with others.

WORD ASSOCIATION: QUALITIES AND PROPERTIES OF A VALUE

One way to gain clarity on a core value is to think of all of the different attributes, properties, synonyms, and other related terms that people associate with the concept. Conducting a brainstorming

exercise—such as using bits of paper that are posted on a wall, or writing words on a big board with answers that are shouted out, or using interactive digital tools like “word clouds”—can help flesh out all of the different ways that people think about the qualities or properties of the concept. This is known in logic as concept intension, which is a collection of properties that are associated with a term.

WORD ASSOCIATION: REAL- WORLD EXAMPLES OF VALUES IN ACTION

Another important way to gain clarity on a core value is to identify examples where you have seen these values being demonstrated, either partially or fully. This is known in logic as concept extension, which is a collection of all of the examples (projects, activities, outcomes) that your internal audiences and external audiences may associate with your core value. Thus, for example, if your project or initiative seeks to advance sustainability, you should have a clear sense of “what success looks like,” using concrete examples that your key partners and audiences can understand.

GETTING TO A WORKING DEFINITION OF CORE VALUES

Once you go through your brainstorming exercises, it will be important to prioritize the terms that are essential to how your organization understands and communicates its core values. This involves a process of simplification and distillation, in order to get to a working definition of your core value that is clear with respect to what it includes and, by implication, what it does not include.



DEVELOPING AND THINKING ABOUT CORE VALUES

CALIFORNIA 100'S CORE VALUES

California 100 focuses on aspirational visions for the future that are grounded in reality, and in language that is easily accessible to a variety of audiences.

In California today, many institutions ranging from corporations and government agencies, to community organizations and philanthropies, have committed to core values and priorities like community inclusion, sustainability, and equity.

In addition, the disruptions and trauma caused by the COVID-19 pandemic and various natural and human-caused disasters have underscored the importance of resilience for many communities. Finally, California also conceives of itself as a global leader in innovation, with respect to science and technology and also with respect to its creative activities and methods of governance.

In keeping with the aspirational nature of the exercise, the California 100 team chose to lay out its core values in five simple words, whose acronym spells "I RISE." They define their core values⁷⁶ as follows:

- **Innovation** that improves private and public sector operations across various domains;
- **Resilience** that enables communities to bounce back from a range of natural and human-caused disasters;
- **Inclusion** that deepens community involvement in identifying and implementing solutions;
- **Sustainability** that promotes health and well-being over multiple generations, and
- **Equity** that ensures justice in the allocation of resources and life chances.

These core values, and associated explanations, were part of the initial request for research proposals that California 100 sent out prior to the public launch of the initiative, and they remain essential to the work that California 100 continues to do—from its public engagement and visioning work, to its work on advanced technology and its demonstration projects in policy innovation.



Figure: California 100's core values—Innovation, Resilience, Inclusion, Sustainability, Equity—spell "I RISE".



BACKCASTING

IDENTIFY THE FACTORS AND EVENTS THAT LED TO A SPECIFIC SCENARIO, AND STRATEGIES TO INFLUENCE IT

Why would you use this? Backcasting helps you understand the conditions that might cause your vision of a scenario to emerge. It can help you identify new initiatives to enhance desirable changes or mitigate against undesirable events. Backcasting can also help you monitor whether a specific scenario is emerging in reality by identifying early-warning indicators.

How can it help you? Backcasting is an important step as it helps you to connect future change back to the present, identifying novel pathways for change.

What it is Backcasting takes a future scenario as given and work backwards from that future to the present to collectively make sense of the conditions, changes and events that might lead to it. This creates a shared sense of how the future might emerge. Interventions can then be identified to influence each step towards that future, starting from the present.

Backcasting assumes there are many potential routes to the same future – creating multiple backcasts helps identify patterns and determine whether any specific events are critical.

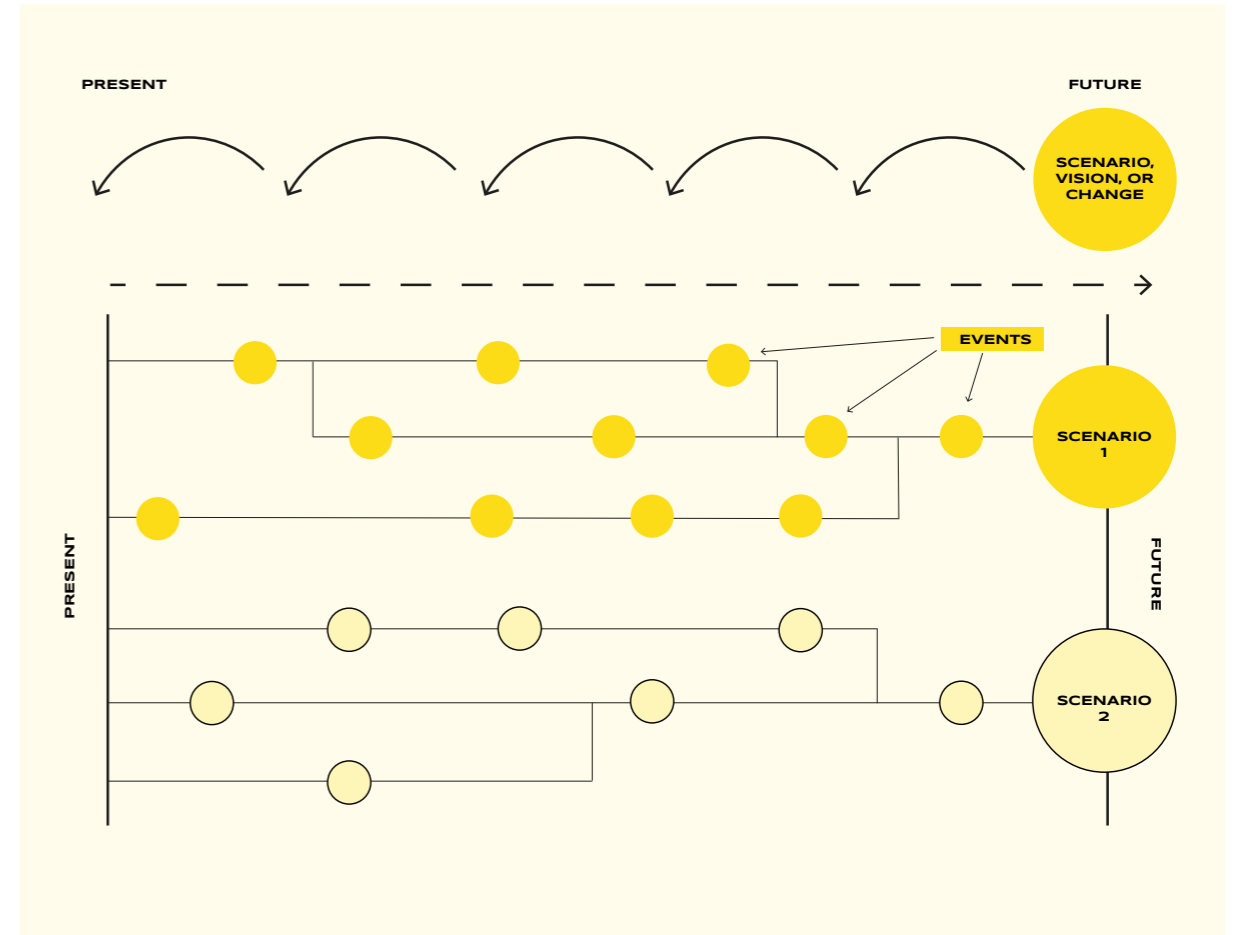


Figure: Visual depicting stepping back from the future to the present. You can use a single backcast (top) to understand how the future could emerge. Multiple backcasts (bottom) can help you understand alternative pathways and identify indicators or signals of change that you can then monitor.



BACKCASTING: USING THE TOOL

WHAT DOES THIS TAKE

 45 mins

 4+ participants

 Low

Backcasting is a simple tool but can be powerful, helping you to see new possibilities for creating change.

Unlike traditional planning, Backcasting starts in the future and works backwards, asking “What happened right before to make this happen?” This approach can help you understand what needs to happen today and tomorrow to make a specific scenario or your Vision more or less likely to arise.

Taking time to imagine a collaborative preferred future helps to move the conversation away from what we expect will happen towards what is possible.

STEP BY STEP

Step 1 Set the scene You can backcast from a scenario, vision, a news headline, or any other description of future change.

Before you start, make sure that all participants are familiar with what you are backcasting, and agree on a time horizon.

Step 1 Set up your backcast You will be moving backwards in around 5 steps from the future back to the present day.

A simple way to start your backcast is to draw out a timeline with an arrow pointing from the future back to the present. Divide this into e.g. five sections (see example).

You can work on a flipchart but the bigger your canvas the better!

Step 2 Agree what the future looks like Start by writing down four or five key features of the future scenario, vision or change. If you are using a vision, this may be your end goals.

Step 3 Take your first step Now take a step backwards in time.

For each feature or end goal that you have defined, think about how we get there? What would need to happen before this?

For instance if you are trying to work towards a net zero transportation system, you might need to develop certain technologies or capabilities, have certain infrastructure in place, or see shifts in consumer behavior.

Step 4 Keep stepping back Repeat the process, stepping back until you reach the present. We suggest you work on one feature at a time, or you can work across these as you step back.

As you step back, you may end up branching your backcasts, developing multiple pathways. This is good.

Step 5 Review your backcast Once you have completed your backcast, take time to review your thinking:

- Play your backcast forward. Check that it makes sense, is feasible. Questioning the cause and effect of each step can help identify missing milestones that are critical to the development of the scenario
- Test your logic. Are there any missing steps? What assumptions are you making?
- Think about change. What can you do to encourage or discourage this change? What do others need to do? What might be out of your control?

Step 6 Identify indicators These indicators can be tracked and monitored to give you an early warning sign that you are moving towards this future. For example, monitoring sea-level rises to identify when new housing policies need to be initiated, or changes in population demographics that require new approaches to healthcare or education.



BACKCASTING: USING THE TOOL

TIPS AND TRICKS

Complete as many backcast paths as time permits. There is more than one route to any future. Exploring and evaluating these different paths can help you identify alternative pathways and common events.

When thinking about change be clear about who needs to be involved, not just the how and when.

Backcasting can be a useful step towards developing a roadmap.

FIND OUT MORE

See this [example](#)⁷⁷ from the UK Government of using backcasting for policy-planning.

Example of a [roadmap to Zero Carbon](#)⁷⁸ transportation developed using backcasting



BACKCASTING: LIVEABLE CITIES

NORDIC CITIES BEYOND DIGITAL DISRUPTION

This example is from a 2015 publication by The Smart Retro Project coordinated by Demos Helsinki⁷⁹. Through the project a set of scenarios were developed for the future of Nordic Cities. This scenario explored how nations could reach a global consensus that fundamentally changed the rules by which the global economy and individual societies functioned. The scenario included an ambition for global emissions to decrease by 50% by 2040 and for Stockholm to be ranked among the ten most livable cities in the world. By stepping back in time they identified a set of steps that they would need to achieve their goals.

Read the [publication](#) here.

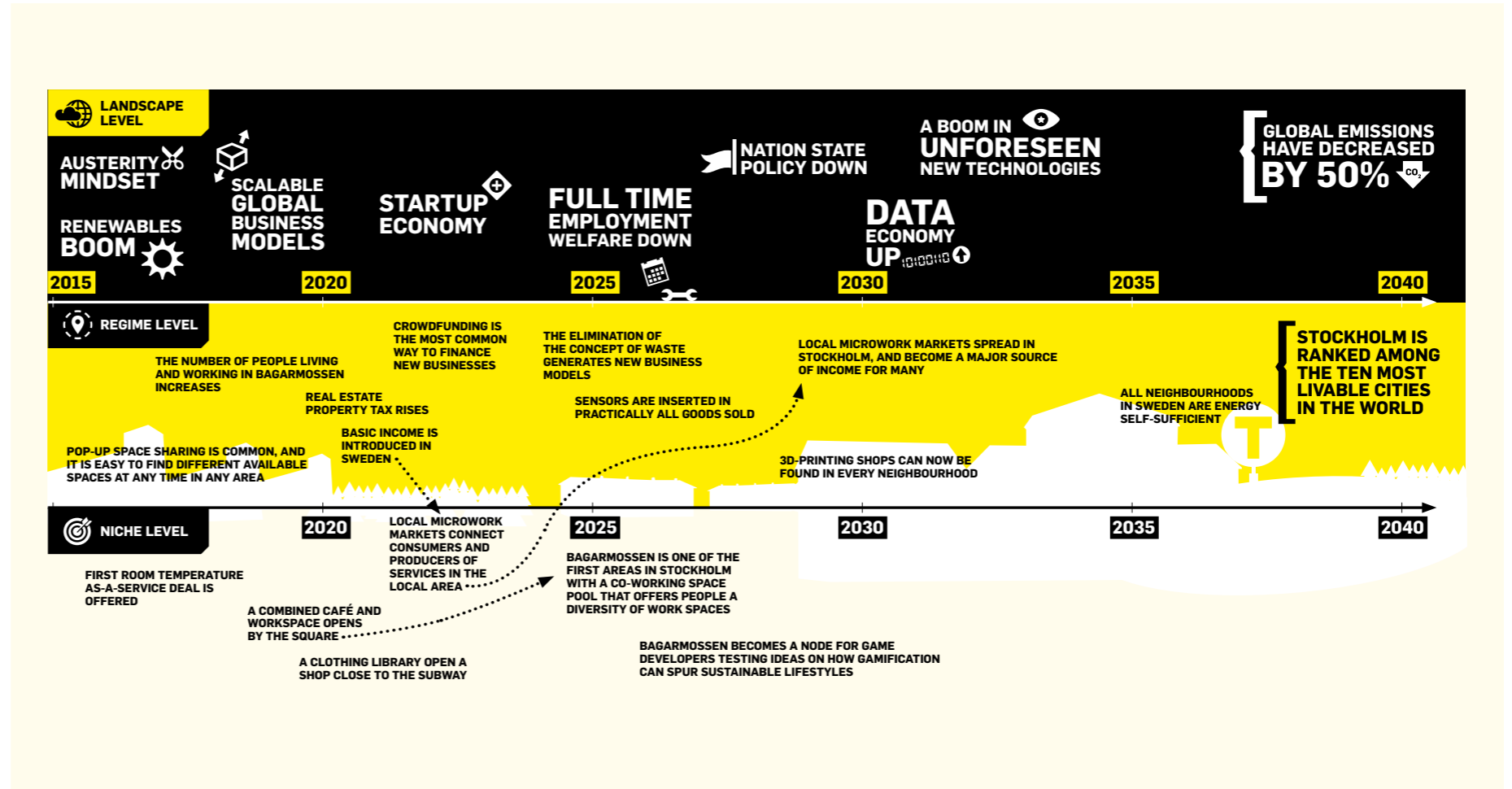


Figure: Visualization of the “Global Deal in Lahti” scenario. This scenario, set in 2050, was backcast to understand the key steps that were needed for it to emerge by 2050.



WIND-TUNNELING

STRESS-TEST STRATEGY AND POLICY OPTIONS AGAINST DIFFERENT FUTURE SCENARIOS

Why would you use this? To understand which strategies are most resilient, and what to prepare for in the event of a particular scenario.

How can it help you? Wind-tunneling helps you to identify which policies, strategies or tactics are more effective across a range of scenarios. This helps you identify priorities for decision-making. It helps you to make your policies, strategies or tactics more resilient. It helps you decide what to do now, and what you might want to do later, as the future emerges. Use the outputs to inform strategy and policy planning, risk monitoring, and assessing impact and capability.

What it is Wind-tunneling takes a systematic approach to assess policy options, strategies or tactics across a range of scenarios. The output is a matrix that rates the effectiveness of strategies/policies across a range of scenarios.

SCENARIO	FORTRESS NIRVANA Pro-poor, secure	ANOTHER BRICK IN THE WALL Elite, secure	MIDNIGHT IN THE GARDEN Pro-poor, insecure	FOUR HORSEMEN Elite, insecure
OPTION				
1. Funding Broker	✓	✗	✗	✗
2. Technical Assistance	✗	✓	✓	✓
3. Advocacy	✓	✓	✗	✓
4. Corporate Social Responsibility	✓	✓	✓	✓
5. Partnership Broker	✗	✓	✓	✓
6. Maximise Income	✗	✗	✗	✗
7. Whatever communities want	✓	✗	✗	✗

● Robust
 ● Significant
 ● Important but risky
 ✓ Works
 ✗ Does not work

Figure: Update legend to “Example showing how to assess options using scenarios. In this example, a set of policy options are being assessed against four different scenarios. Adapted from Scenario Planning. Guidance Note. UK Government (2009)”.⁸¹



WIND-TUNNELING: USING THE TOOL

WHAT DOES THIS TAKE

 **1-2 hours**

 **4-8 participants**

 **Medium**

Wind-tunneling helps you stress-test strategy and policy options against different future scenarios.

If you have a set of futures scenarios, wind-tunneling helps you understand which strategies are most resilient across all scenarios. It also helps identify specific interventions that may become important in the event of a particular scenario.

Wind-tunneling can employ both quantitative and qualitative analyses to stress-test policies and strategies under different scenarios. The output is a matrix that rates the effectiveness of strategies/policies across a range of scenarios and your vision.

To use wind-tunneling you need to have a set of scenarios to test, and a set of policy options, strategies or tactics.

STEP BY STEP

Step 1 Getting started Introduce the scenario set that you are going to be using and your vision (if applicable). Give participants time to read these.

Next introduce the policies and strategies that the group is going to be testing.

Step 2 Split into teams Split into teams (of one or more). Each team should work on a subset of policies or strategies. The group should take a moment to consider how each strategy or policy might work in each scenario.

Step 3 Stress-test options in our scenarios In your groups, you should imagine that the scenario has emerge, placing yourself in the future, at the date of your scenarios.

For each strategy or policy option, decide:

- Would this work and have a positive impact in this scenario (it is robust)?
- Can we adapt our approach to be more effective (it needs modification)?
- Does this have no impact, or lead to negative outcomes (it does not work)?

Use the [template](#) to record your thoughts.

Step 4 Review your ideas Review all the options that you have tested as a group.

Try to identify:

- **ideas that are robust across scenarios**, in that they work in all or most scenarios. You should implement these if you have the resources.
- **ideas that are important in a particular scenario**. You should consider preparing to put these in place if this scenario starts to emerge (think about early indicators that you can track). Some of the ideas might be so important, or take time to implement, in which case do this today.
- **Ideas that need modification in more than one scenario**. How can you make these more effective

Step 5 Prioritize as a group

- Come back together and compare your ideas from across groups.
- Have a discussion about your ideas. Look at your robust and important ideas and have a discussion about whether you have the capabilities and financing to implement these?
- It is likely that there will be trade-offs. Try to identify a portfolio of ideas, that will help you have impact in different scenarios.



WIND-TUNNELING: USING THE TOOL

TIPS AND TRICKS

If you have limited time, rather than working across the scenario set, give each group one scenario to work with, then compare across groups.

FIND OUT MORE

Explore how the [European Commission](#) uses wind tunneling to support legislation and policy-making.⁸⁰

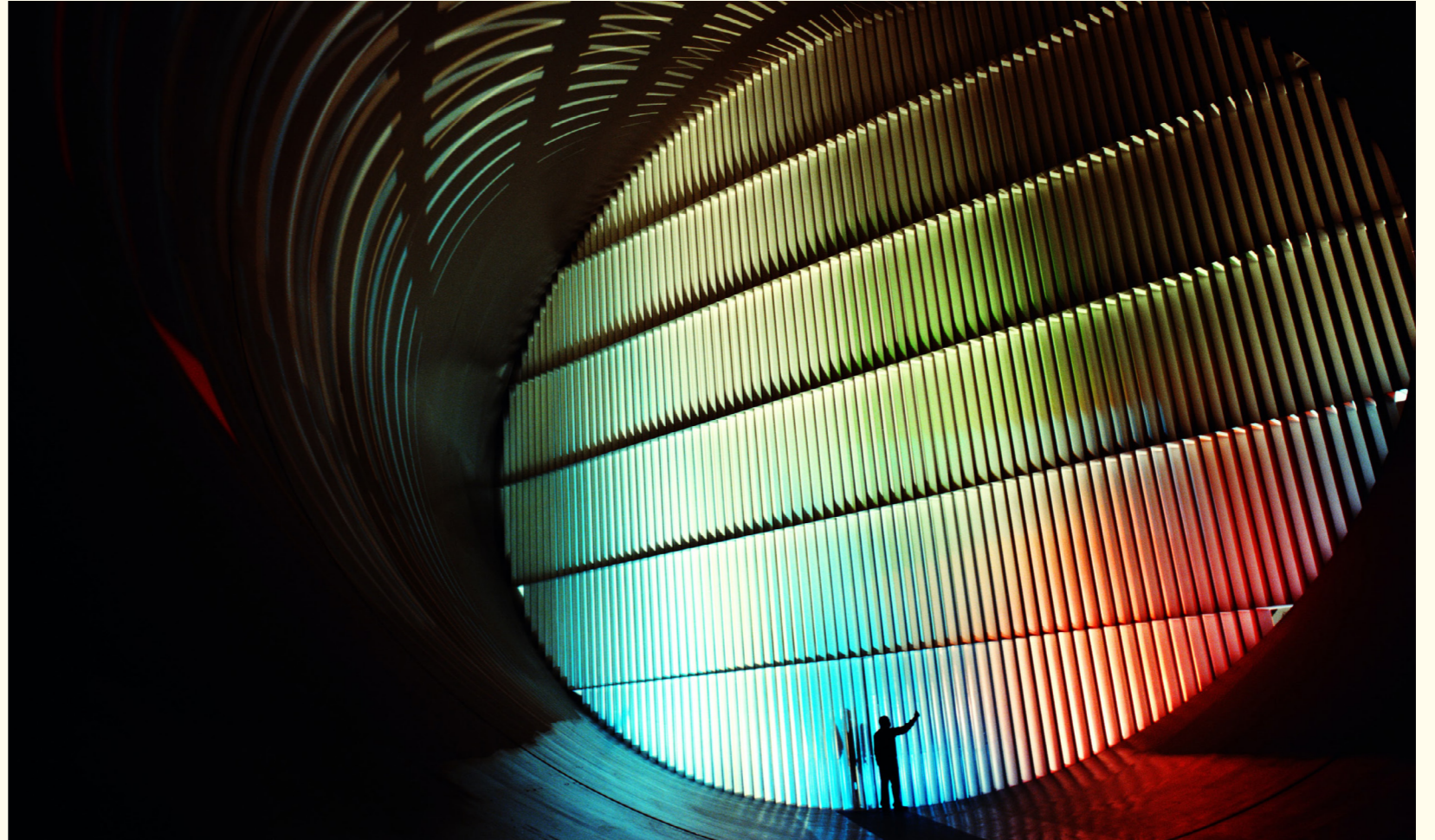


Image: Turning vanes in the 16 Foot Tunnel at Langley.

By NASA



WIND-TUNNELING: BREXIT AND HEALTH

USING WIND-TUNNELING TO UNDERSTAND HOW TO ACHIEVE QUALITY OUTCOME FOR PATIENTS AND CLINICAL TRIALS AFTER BREXIT.

This example is from a piece of work by SOIF commissioned by Cancer Research UK ahead of Brexit⁸². It took a futures approach based on horizon scanning, trend analysis and scenario planning to understand both the short- and longer-term impacts of Brexit, as well as the drivers that may influence how future trials are conducted, and the world in which trials operate. This approach helped to identify a set of key recommendations that were stress-tested against different scenarios.

Figure: Example of wind-tunneling policy options against a set of scenarios. This example comes from work in 2018 to explore how the future of clinical trials in the UK might be impacted out to 2028. It identified a set of priorities and recommendations for Brexit negotiations. It aimed to ensure a successful future for trials and a positive outcome for patients. [Find out more](#)

IMPLICATION	FULL ALIGNMENT	PARTIAL ALIGNMENT	NO ALIGNMENT	RECOMMENDATION
Alignment with the provisions of the EU Clinical Trials Regulation	<ul style="list-style-type: none"> UK replicates provisions of the EU CTR and negotiates access to the EU portal and database through a bespoke agreement. Harmonised approach to trials with minimal barriers. UK and EU can cooperate on trials maximising patient participation and access to trials and treatments. UK seen as an attractive destination for clinical trials as part of a unified UK and EU market. 	<ul style="list-style-type: none"> UK can replicate provisions of the EU CTR but does not have access to the EU portal and database. UK facing increased complexity and difficulty to sponsor EU trials, particularly for non-commercial trials and increased barriers to expanding trials internationally. Quality and frequency of trials conducted in UK decreases. Patients have fewer options and delayed access to trials and/or potential innovative treatments. UK a less competitive market for the placement of trials as an 'additional' market outside of the EU. 	<ul style="list-style-type: none"> UK and EU clinical trials regulation is not equivalent. Increased costs and delays to international trials. Quantity of trials conducted in UK decreases. Patients have fewer options and delayed access to treatments. Potential opportunities to innovate, but UK potentially less competitive compared to Full alignment. UK may choose to specialise or align with another international market e.g. USA. 	<ul style="list-style-type: none"> The UK government should continue to seek full regulatory alignment with the forthcoming EU Clinical Trial Regulation. This should include a bespoke agreement for access to the EU portal and database and to ensure the UK can take part in the centralised assessment process.
Funding	<ul style="list-style-type: none"> UK can participate in EU Framework programmes and funding either as an Associated country or through a bilateral agreement. 	<ul style="list-style-type: none"> UK can participate in EU framework programmes as a Third Country but is unlikely to be eligible for funding. New strategies may be required to support funding and investment in the longer-term. 	<ul style="list-style-type: none"> UK can participate in EU framework programmes as a Third Country but is ineligible for funding. New strategies will be required to support funding and investment in the longer-term. 	<ul style="list-style-type: none"> The UK and EU should agree full UK participation in EU framework programmes with access to funding for clinical research. A long-term strategic approach to funding of clinical trials is necessary in the UK to both ensure investment and to drive collaboration.

● Positive outcome
 ● Negative outcome
 ● Risk or uncertainty



TAKE A SYSTEMATIC APPROACH ON YOUR FORESIGHT JOURNEY



A FOUR-STAGE APPROACH TO FORESIGHT

A SYSTEMATIC APPROACH TO USING FORESIGHT IS IMPORTANT FOR IMPACT

The approach used in this toolkit has been adapted from SOIF's four-stage process⁸³. It has been tailored to focus on tools that decision makers can start to use today to generate new insights for strategy, planning and policy.

If you've arrived here after reading through the tools you will recognise the flow from Scoping through to Investigating Implications—we haven't yet discussed Integrating Futures. If you've jumped straight here, read on for more.

WHAT IS THE FOUR STAGE PROCESS?

The four stage approach is designed to help you be aware of the essential components of foresight work. It is informed by our experience implementing and researching foresight practice in over fifty countries.

The four stages—Scoping, Ordering, Investigating Implications and Integrating Futures—lead you through the steps necessary for successful foresight work.

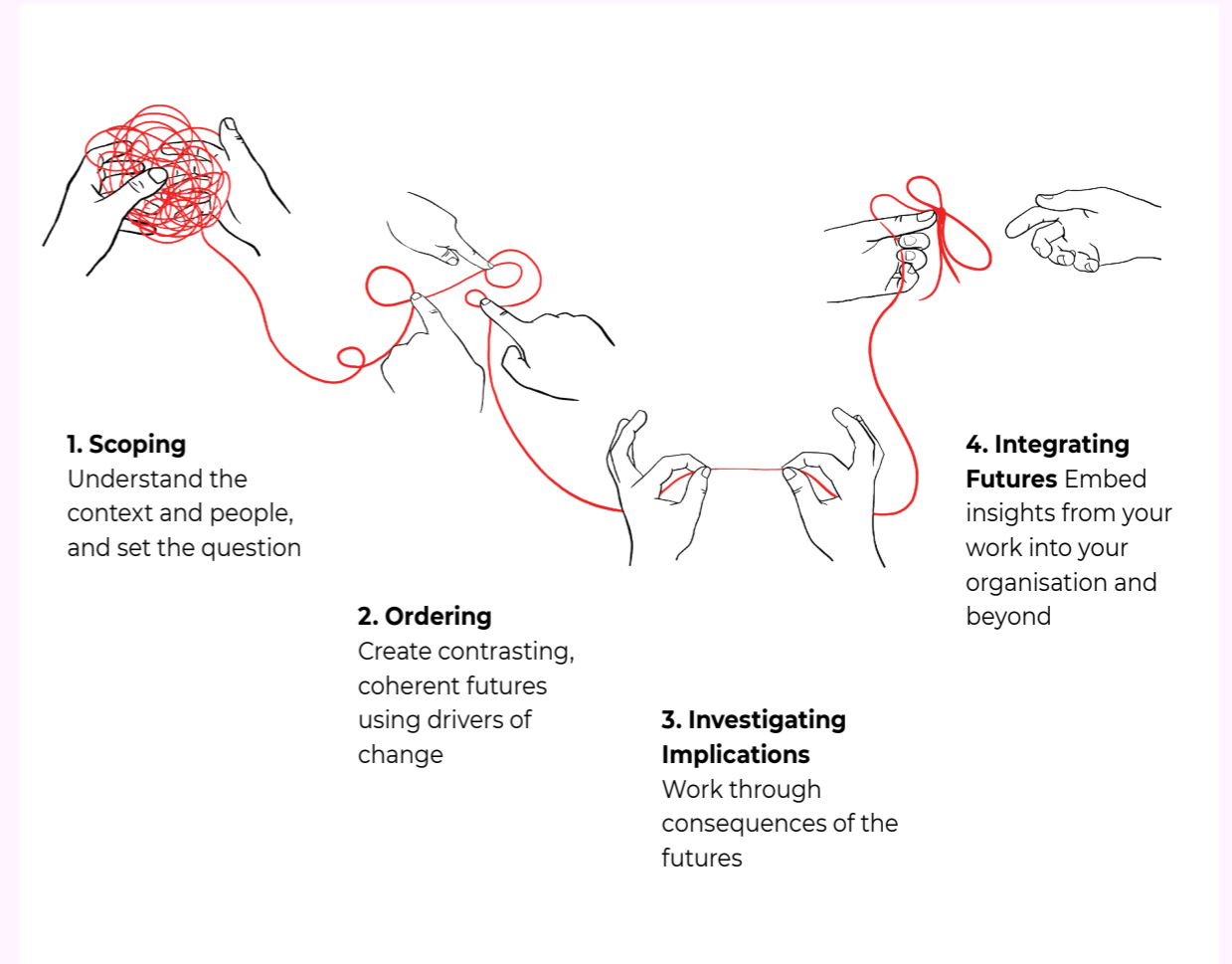
We illustrate the process of engaging with the complexity and uncertainty of the future as a journey, depicted in a string metaphor:

Scoping involves engaging with complexity and the messiness, or complexity, associated with the real world.

Ordering is a key step in engaging with uncertainty. It involves looking for patterns of change, drivers of change and dynamics that exist in our system and using these to create coherent ideas about alternative futures..

Investigating implications is the stage in which you tease out and work through consequences.

Finally, **Integrating Futures** is the stage in which you communicate insights, disseminate knowledge, and work towards change—tying everything in a bow.



1. Scoping
Understand the context and people, and set the question

2. Ordering
Create contrasting, coherent futures using drivers of change

3. Investigating Implications
Work through consequences of the futures

4. Integrating Futures
Embed insights from your work into your organisation and beyond

A FOUR-STAGE APPROACH TO FORESIGHT

HOW DOES IT APPLY TO FORESIGHT WORK

We use the same four stages in all of work...but the content, tools and approaches we cover varies depending on who and what we are working with.

Each organization, context, project and topic is different—the structure provided by applying the same four stages in each case allows a greater focus on the specific differences of content, culture, and outcomes.

The four stage process is a scaffolding to enable you to design a strategic foresight intervention to suit your particular objectives and available resources— time, budget, expertise, existing material and research.

Typically, we spend about a third of our time in scoping, a third integrating and the rest of our time ordering and investigating implications.

This helps to set up a project for success.

USING THE FOUR STAGE APPROACH

You can read a bit more about the four-stage approach and other tools you can use in this section.

For more information contact hello@soif.org.uk

SCOPING

UNDERSTAND THE CONTEXT AND PEOPLE SO YOU CAN SET AN APPROPRIATE QUESTION AND DESIGN YOUR INTERVENTION FOR MAXIMUM IMPACT

These tools help you reveal the core issue of interest, direct the project focus and set parameters to achieve meaningful change with the resources available, preventing projects from becoming too laborious and vast.

Why? To design for cost-effectiveness and meaningful change, so that projects are manageable.

What? An iterative framing approach, ensuring thorough mapping of the 4-stage journey, the tools to be used, and wider stakeholders.

How? The scoping note is one of the most important tools for project design.

SETTING UP FOR SUCCESS:

- Before you start, understand the reason for engaging with the future and the project purpose
- Engage with the project commissioner and those you want to involve in the work
- Go back and forth on the focal question until you are confident you have the right one
- Adapt your approach, tools and level of stakeholder engagement to best utilize your resources and your points of influence
- Use a scoping note to set out the principle project parameters—key stakeholders can refer to it at any stage
- Build external relationships and your 'sensing network'



7 questions & 5 whys
Questions that elicit views on the drivers of change influencing the future, and whys that dig deeper into the issue and stakeholder motivations. [7 questions & 5 whys](#)⁸⁴



Futures triangle
Shapes discussions of the future by exploring the weight of history, push of the present and pull of the future. [Futures triangle](#)⁸⁵



Stakeholder mapping
Visual representation of groups and individuals important to the project. [Stakeholder mapping](#)⁸⁶



Scoping note
Document that sets out the principal project parameters – content and process – the client and project team can refer to at each stage.



Scoping circle
A thinking tool to help you scope and design a foresight project. [Scoping circle](#)



Situation, complication, question
Helps you structure your project scope by understanding the status quo, disruptions, and the question you need to ask. [SCQA](#)⁸⁷

ORDERING

CREATE CONTRASTING, COHERENT FUTURES USING DRIVERS OF CHANGE, IN ORDER TO ENGAGE WITH ALTERNATIVES TO THE STATUS QUO

These tools help you go beyond forecasting and trends. They explore different alternative futures by examining components in different combinations, such as the interaction between drivers.

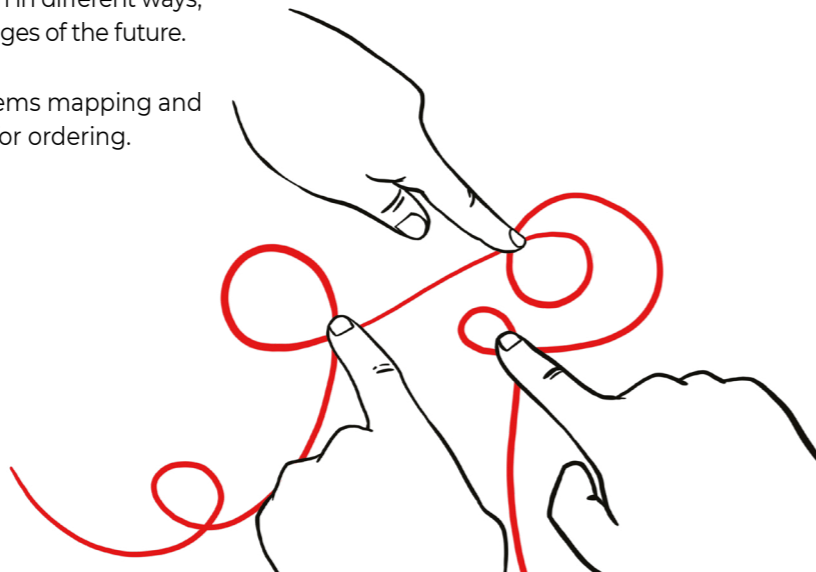
Why? To go beyond forecasting and trends to explore different elements in different combinations.

What? Identify the components and drivers of disruptive change and order them in different ways, especially to create divergent images of the future.

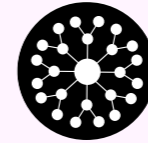
How? Scanning for drivers, systems mapping and scenarios are some of the tools for ordering.

SETTING UP FOR SUCCESS:

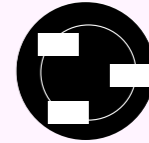
- Understand the purposes of—and differences between—futures thinking, prediction and forecasting
- Explore different shapes of change and understand how to engage with complexity
- Identify and use drivers of change to explore different futures
- Use appropriate methods to develop credible, coherent, and challenging alternative futures
- Build on others' analytical work—don't reinvent the wheel or get lost in detail
- Have fun, be creative, be bold and enjoy the unexpected!



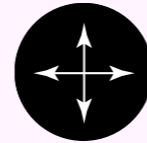
Drivers of change (STEEP)
Identifies the Societal, Techno-logical, Economic, Environmental and Political driving forces that determine macro-level changes and shape different futures.



Futures wheel
Graphic visualisation of direct and indirect consequences of a particular change or development. [Futures wheel](#)



Systems mapping
Understand cause and effect, by exploring how constituent parts interrelate and interact over time. [Systems mapping](#)



Scenario (2x2)
Approach most widely used to develop scenarios based on the analysis of drivers of change. [Scenario \(2x2\)](#)



Verge Explores change through domains of human experience: Define, Relate, Connect, Create, Consume and Destroy. [Verge](#)



Systems mythologies Step quickly and easily in and out of the shoes of others to explore an issue from diverse perspective. [Systems mythologies](#)



Casual layered analysis
Analyses and challenges theories, discourses and narratives used to explain a past, present or future situation. [CLA](#)



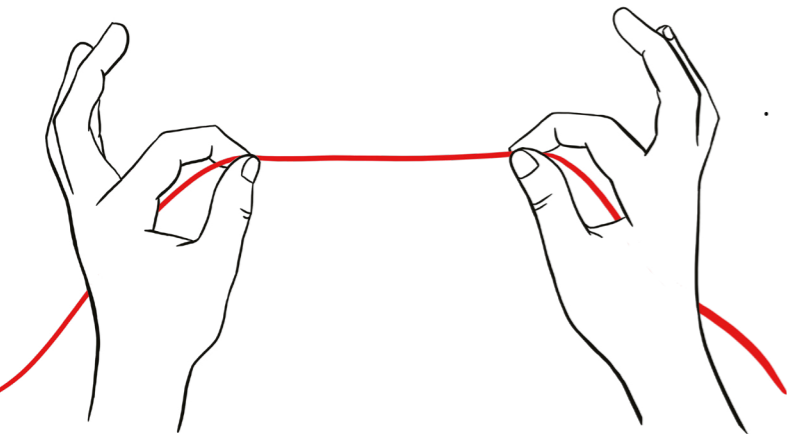
Archetypes Often used in forecasting and exploratory scenario work, archetypes reflect predetermined shapes of the future. [Archetypes](#)

INVESTIGATING IMPLICATIONS

SYSTEMATICALLY WORK THROUGH CONSEQUENCES OF THE FUTURES OVER TIME AND ACROSS DIFFERENT PERSPECTIVES.

These tools help you go beyond forecasting and trends to identify the consequences of alternative futures.

Why? To avoid jumping to conclusions too easily, or considering only – the obvious consequences of scenarios. Treating implications in a systematic way demonstrates the impact of possible future scenarios for decisions to be made today.



What? A systematic process of thinking through both general scenario implications and those for particular issues, questions or pending decisions.

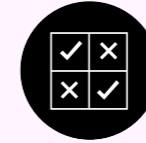
How? Visioning, wind-tunnelling, portfolio and options analysis, and backcasting are some of the tools recommended for understanding implications.

SETTING UP FOR SUCCESS:

- Choose and use tools—individually and in combination—to gain different types of insight
- Make strategic choices to shape the future we want and build preparedness for alternative possible futures
- Consider implications from different points of view, through multiple lenses, to gain richer perspectives
- Capture the attention of decision-makers by identifying immediate implications as well as medium- to long-term implications



Backcasting Takes a future scenario as given and guides users to identify possible factors and events that led to this scenario developing. This enables alternative future paths to be imagined. [Backcasting](#)



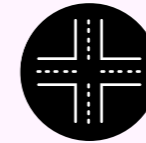
Portfolio analysis Compiles a set of policy responses that is both aspirational and resilient to different futures.



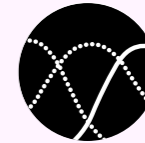
Power and interest maps Evaluates the expectations and impact of particular stakeholders. [Power and interest](#)⁸⁸



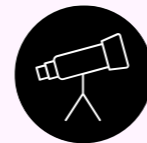
Prototypes and artefacts Created or imagined objects, or digital representations, belonging to a future scenario.



Roadmaps Sets a clear path to reach a future goal through collaborative development of long-term plans and strategies. [Roadmaps](#)⁸⁹



Three horizons Framework that connects the present with desired futures, identifies the conflicts between them and explores the divergent futures that may result. [Three horizons](#)



Visioning Adds a normative frame – principles, desires, goals - to scenario analysis without losing insights into change barriers and enablers. [Visioning](#)



Wind-tunneling Stress-tests goals and objectives against different future scenarios. It can also be used to generate new scenarios. [Wind-tunneling](#)

INTEGRATING FUTURES

DRIVE IMPACT AND CHANGE, BY EMBEDDING INSIGHTS FROM YOUR WORK INTO YOUR ORGANIZATION AND BEYOND IN THE WIDER PUBLIC SPACE.

These tools ensure that a foresight project has organizational and broader impact.

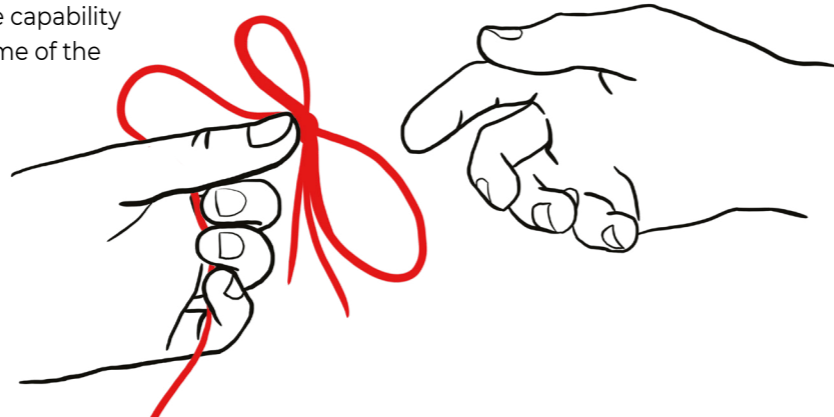
Why? Translating foresight into an organization requires foresight skills to prevent it from being seen as interesting rather than important.

What? Synthesized foresight outputs and implications which link to clear organizational entry points and levers, through advocacy, building and nurturing relationships, sharing information, advising and communicating.

How? Rapid prototyping, strategic communications, visual design, the capability matrix and “more of/less of” are some of the tools we recommend.

SETTING UP FOR SUCCESS:

- Formulate messages in an imaginative way using a range of media
- Create and roll out a foresight project implementation plan
- Embed foresight in organizational systems and planning processes
- Work with allies, make opportunities, use entry points, and overcome barriers to acting for the long-term in your organization
- Inspire others to be advocates of your work
- Establish systems to monitor change, and measure the impact and quality of insights from foresight
- Take an ecosystem approach to create future-ready organizations that can adapt as the future evolves



Prototyping (comms)
Rapidly tests and tailors communications messages for different media and specific audiences.



Capability matrix Identifies aspects of the organization that can be used to enable the organization to be successful in different futures. [Capability matrix](#)



More of, less of... Considers which parts of an organization should benefit from either more or less resources, by using scenarios and their implications. See [Capability matrix](#)



Dilemma resolution Navigate between contrasting and sometimes polarised points of view about change. [Dilemma resolution](#)⁹⁰



McKinsey 7s Analyses how well an organization, project or team is positioned to achieve its objectives. [McKinsey 7s](#)⁹¹

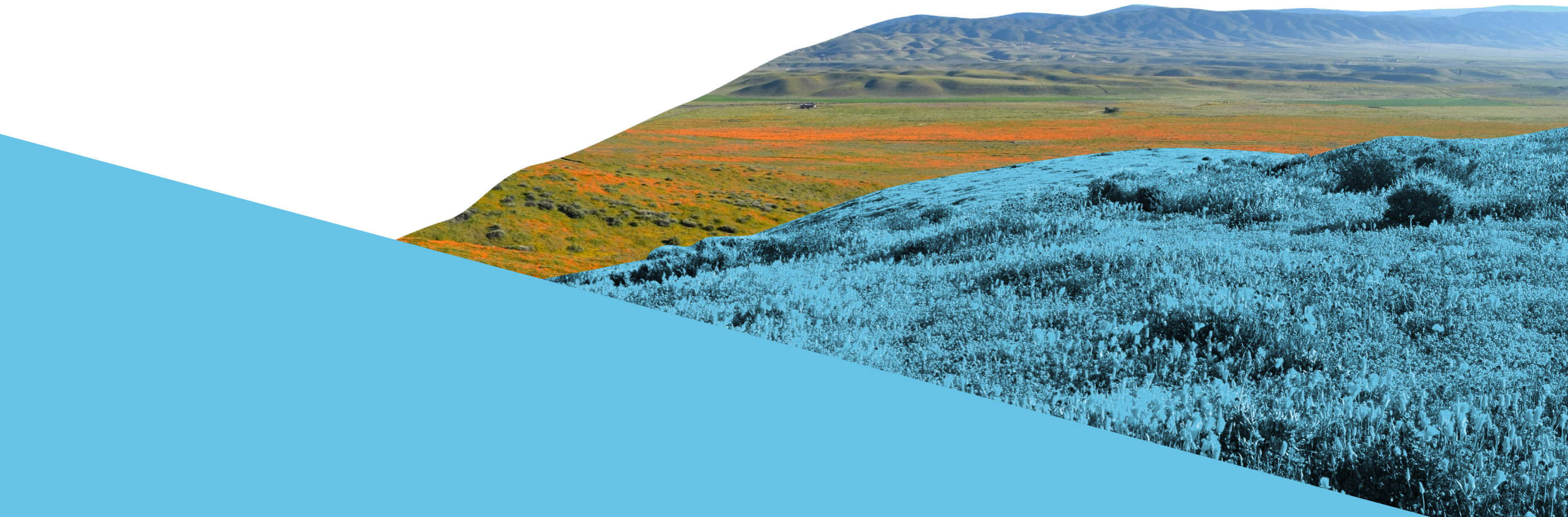


Strategic navigation Supports decision-making in a future-aware way by identifying a forward-looking set of indicators and markers.



Heart, head and hands
Ensure insights from foresight work connect deeply with your audience. [Heart, head and hands](#)

4 BUILD YOUR FORESIGHT ECOSYSTEM



INTEGRATING FUTURES WORK

WHY INTEGRATE FUTURES?

Strategic foresight is not a silver bullet, or a “solution”, it’s rather a profound belief in the importance of building a culture that can engage with systemic change and disruptions over time. If applied appropriately and systematically, foresight can help you to improve your policies, strategies and plans, as you navigate towards your vision of the future.

Especially where a proactive approach to innovation is needed, strategic foresight can help harness the potential of future trends and mitigate its negative impacts. Foresight is central to our ability to make effective decisions today and tackle future challenges. It is not a luxury; it is a necessity.

However, while strategic foresight can provide lots of insights about the future, it can ultimately fail to create change.

A focus on integration is important as it helps ensure that project insights are communicated effectively, and that your audience (whether in your organization or the broader ecosystem) have the skills and capacity to make sense of the insights from your work.

It also helps you to build future-focused organizations and ecosystems that are resilient and anticipatory over time.

In this section, we share a simple recipe for **communicating futures**—heart, head and hands—and SOIF’s **ecosystems approach to building foresight capability**.

INTEGRATION AND TRANSLATION TO IMPACT: THE HOLY GRAIL OF FORESIGHT.

There are three questions that people often ask:

- How do we ensure things actually change?
- How can we become the kind of organization that does this well?
- How can we tell what works?

These questions are not easy to answer. Change takes time. It can be hard to attribute success. A general challenge in many strategy and policy processes is that an effective process often becomes ‘invisible’ during the journey, with results seen as inevitable or common-sense.

It is also harder to prove what might have happened if nothing had happened—the counterfactual can be hard to prove—and in complex environments, it can be cause and effect.

However, there is a growing body of evidence about the impact of foresight work, the ingredients that help to ensure that foresight is effective, and how governments and other organizations can build their ecosystems to incentivize long-term thinking, using foresight and other approaches

BOX: A GROWING SET OF EVIDENCE ABOUT THE IMPACT OF FORESIGHT WORK AND HOW TO BUILD ECOSYSTEMS.



Features of effective systemic foresight in governments around the world This report explores how eight governments have developed their foresight ecosystems over time. Building and sustainaining their capacity and capability to use foresight. [Read more.](#)⁹²

Additional reading:

- [Corporate foresight and its impact on firm performance.](#) Rohrbeck (2018)⁹³
- [Learning from the Future.](#) J. Peter Scoblic, Harvard Business Review (2020)⁹⁴
- OECD OPSI’s work in [anticipatory innovation governance.](#)⁹⁵

COMMUNICATING FUTURES WORK: THINKING ABOUT HEART HEAD AND HANDS

COMMUNICATING FUTURES WORK

Communication is key to ensuring the outputs of any foresight project are impactful, and not just seen to be merely interesting.

There are many ways to communicate futures insights and we've shared a few examples here. The key thing to remember is that the people you are communicating your insights to haven't had the same rich experience of the future that you have had.

And you can't repeat the experience for them.

But you need to find a way for them to internalize enough of your experience so that they can engage with the critical insights, and act on them.

It's critical to understand your audience, who you are engaging with, why, and what will help them learn. You then need to formulate messages in an imaginative way in a format that will match their learning and information styles.

THINKING ABOUT HEART, HEAD AND HANDS

Effective communications speak to the heart, head and hands of your audience:

Heart: Does your narrative about the future engage emotionally? Does it excite or alarm? Does it have an 'aha' moment?

Head: Does your narrative about the future add up? Does it create a reason to believe?

Hands: Does your narrative about the future have a path to the future that can start now? Or at least in your next planning/innovation cycle?

A simple way to use this is to start by thinking about **who** your critical audiences are (try not to have more than three).

Then think about **how** you want to communicate. For each audience decide on your communications approach, including the format and distribution channels.

Finally sketch out the key messages you think your audience needs to hear from your project. How can you make these messages resonate with the **heart, head, or hands?** Try to come up with at least one message for each of these.

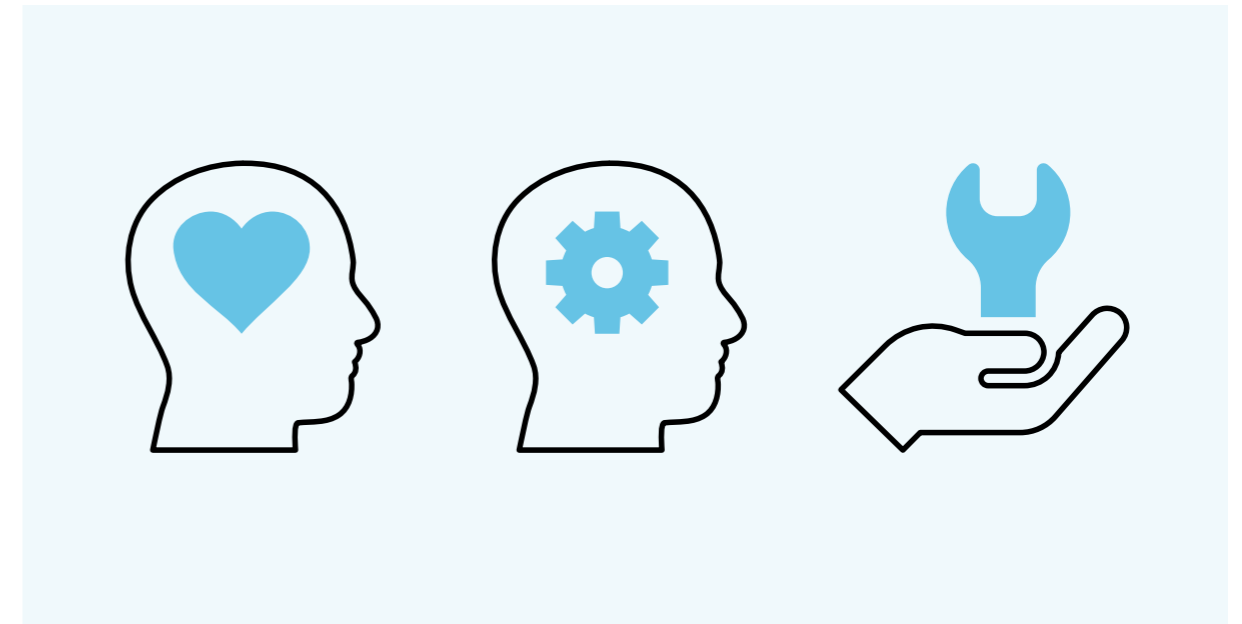


Figure: Effective communications will appeal to the heart, head and hands.

CASE: FUTURE FOOD ENVIRONMENTS

AN EXAMPLE: EXPLORING THE FUTURE OF FOOD IN URBAN ENVIRONMENTS

This example comes from a project exploring Urban Food Futures in the UK⁹⁶. The project asked “what will the food environment in inner cities be like in 2035?”. The insights from the project were communicated through different products—a report, an interactive website and roadmap about the future, and a series of artifacts and personas that engaged the head, heart and hands:

Head: the food system generates billions of (pounds) dollars in external costs for both the environment and the health sector. So this is a market failure.

Heart: Why is food a market at all? What if everyone had the right to healthy, affordable accessible food?

Hands: encourage the companies that are already doing this; regulate the companies who are producing unhealthy food (e.g. with a lot of processed content); support the development of community enterprise or non-profit companies in under-served areas.

You can explore the outputs [online here](#).⁹⁷



Figure: Diagram from the Urban Food Futures report. This image shows how four intervention points can combine to create better food environments.



Figure: Artifact from Urban Food Futures. This is a fictional product that explores the concepts of restrictions and strict regulation being placed on food.

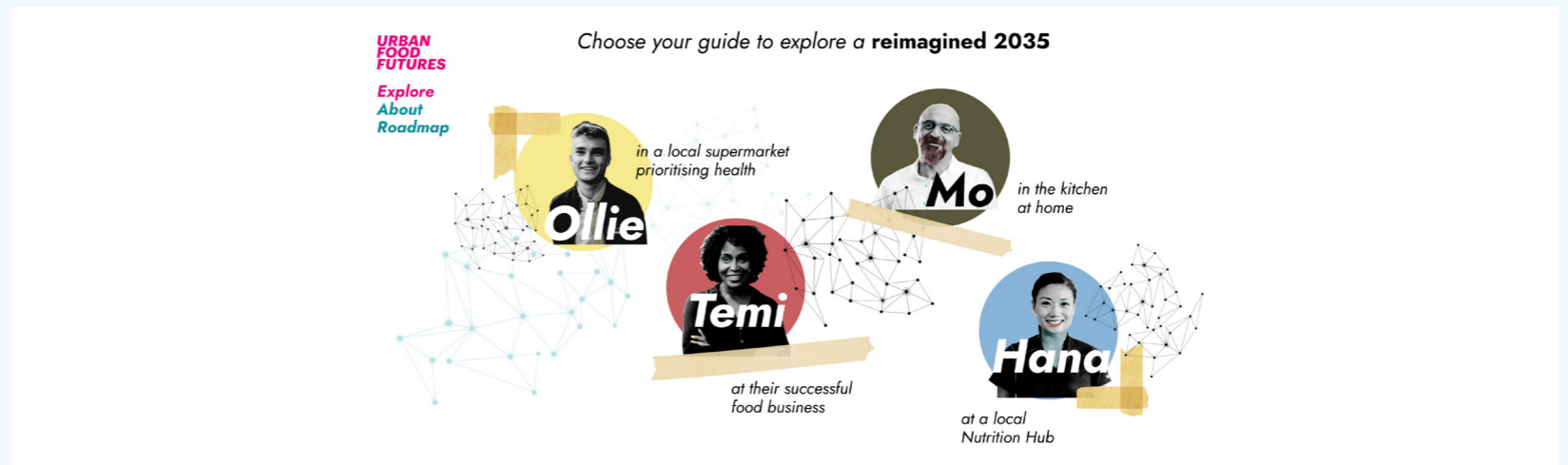


Figure: A set of personas from Urban Food Futures. These personas were used to bring the roadmap and ideas from the project to life.

TAKING AN ECOSYSTEMS APPROACH TO DEVELOP YOUR FORESIGHT CAPABILITIES

Foresight is often thought about in terms of structures, processes and tools. However, for sustainable and deep impact it needs to be considered as an ecosystem of mutually reinforcing and reliant elements that together provide the type of ongoing long-term thinking required of today's decision makers.

This ecosystem contains the people, organizations and institutions that can help ensure that there is a focus on the long-term; a healthy supply of foresight, as well as demand; and that the ecosystem is being curated and nurtured over time.

There is no silver bullet, however, by looking at what is seen to have worked in practice, it is clear that there is a set of features, or ingredients, that can help build foresight capability across people, institutions, processes and culture.

How you choose to sequence and invest in these will depend on your context and existing capabilities.

In any government, this will likely include efforts within the legislature, executive, judiciary and audit, as well as work with independent and arms' length bodies, citizens and media.

You can read more [here](#).⁹⁸

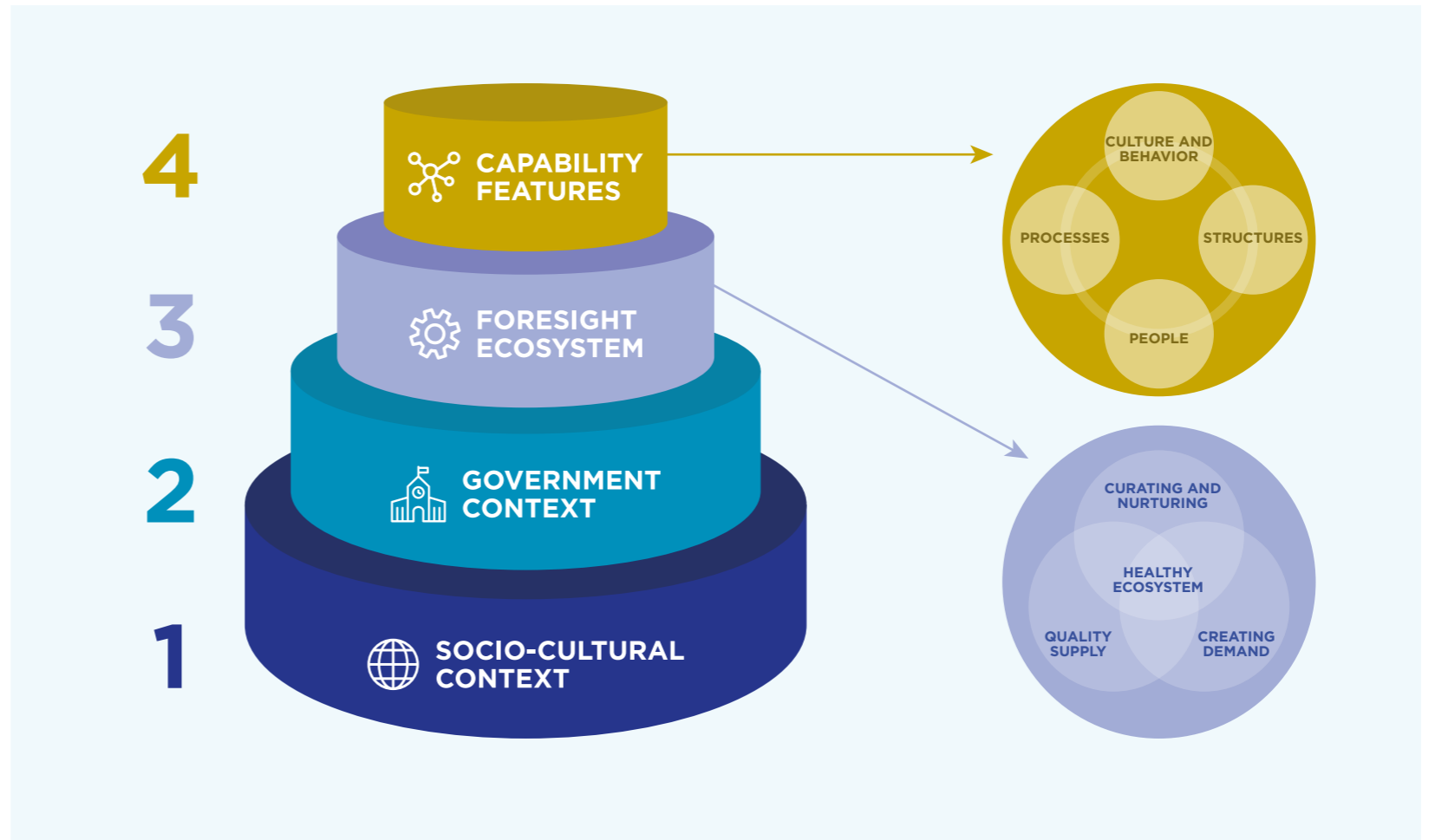


Figure: SOIF's foresight ecosystem model is designed to help you build your foresight capability and capacity and sustain this over time.

TAKING AN ECOSYSTEMS APPROACH TO DEVELOP YOUR FORESIGHT CAPABILITIES

BUT WHERE DO YOU GET STARTED?

Whether you are looking to build your capacity and capability as a team, or as part of this wider ecosystem, the capability matrix on the next page can help.

The capability matrix on the next page can help you to consider how to this.

BUILDING CAPABILITY ACROSS GOVERNMENT (EXAMPLES)

Legislature

Finland's Committee of the Future - future trends, 17 Members of the Finnish Parliament, "generate dialogue with the government on major future problems and opportunities" and engage with public.

Executive

Singapore's Centre for Strategic Futures (CSF) and Strategic Foresight Unit (SFU) connects Cabinet, ministries, business and civil society. The EU Ministers for the Future network is now established across the EU.

Judiciary

The Netherlands' Supreme court is an activist player and dynamic driver, through The Oslo Principles on Global Climate Change Obligations and find court cases taken by Dutch children against the government

Audit The United States Government Accountability Office (GAO) established the Center for Strategic Foresight to identifying, monitoring, and analyzing emerging issues facing policy-makers".across the federal, down to state, up to multilateral level, and connects to assessing policy future-preparedness.

Public and arm's length bodies Finland's Sitra funds innovation and has a responsibility for promoting wellbeing, and connecting into Universities. Sitra reports to Parliament and is not responsible to any particular governmental party. Wales' Future Generations Commissioner is an independent body looking at the wellbeing of future generations.

Citizens and Media Le Grand debat du Climat and regional Infrastructure investment dialogues are recent examples of dialogue in France.

USING THE CAPABILITY MATRIX

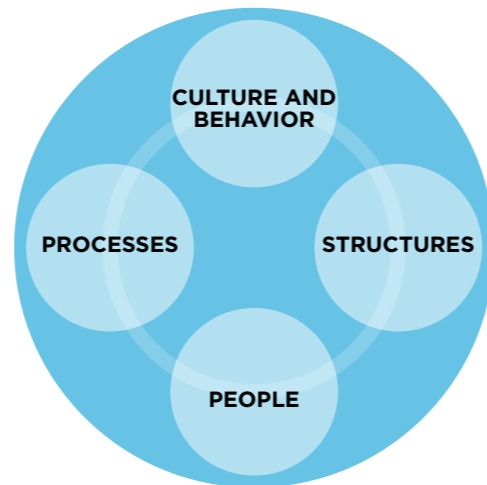
UNDERSTAND HOW TO DEVELOP YOUR FORESIGHT ECOSYSTEM AND ASSESS YOUR FORESIGHT CAPABILITIES

The capability matrix helps us to become an organization and system that is prepared for the future, inclusive of diverse voices in an anticipatory manner, and continually reforming as the future unfolds. It makes foresight actionable, helping us to align the institutional planning and thinking process.

Why would you use this? To think about how to build the capacity and capability of your team, organization or ecosystem, and identify steps you can take to do this.

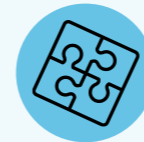
How can it help you? The capability matrix can be used to understand your current capabilities and identify practical steps to build your foresight ecosystem. It is part of a broader framework that has been developed by SOIF based on our experience and drawing on practice-based learning from across government, private and non-profit ecosystems.

How it works Use the capability matrix to think about your existing capabilities and identify opportunities for institutionalizing foresight across your ecosystem.



Culture and behavior

- focus on creating commitment
- bring policy-makers into foresight
- meet policy-makers where they are
- support short-term work with long-term perspective
- generate shared ownership and buy-in



Structures

- have central units sitting in or near the heart of government
- build and foster capacity in departments and agencies
- work to have courts, elected officials and audit officials involved
- put in place coordinating and sharing groups



People

- make sure that there are in-house skills and capacity
- invest in the development of the next generation
- have visible consistent champions
- support and nurture people working in strategic foresight
- build local and international experts



Processes

- work across all of government and use all government levers
- deliver a small number of set piece activities
- develop their own work
- draw on diverse methods and disciplines
- invest in ongoing research and innovation around strategic foresight

Figure: A common set of features for building future-oriented, resilient and adaptable systems.⁹⁹

USING THE CAPABILITY MATRIX

WHAT DOES THIS TAKE

15 mins +

1+ participants

Medium

The Capability Matrix is a simple but powerful tool for thinking about how to start building your foresight capabilities at a team, organization or at ecosystems level.

It focuses on four sets of features that are necessary for building capability:

- Culture and behavior
- Structures
- People
- Processes

You can use these as prompts to generate ideas for building your own capability, then use the personal reflection exercise to start translating your ideas into actions.



STEP BY STEP

Step 1 Getting started Start by introducing the capability matrix to your team. Split into small groups to brainstorm ideas for how you can build capability in each of the four areas.

Step 2 Share your ideas Split into small groups to brainstorm ideas. Capture your ideas on a [template](#).

As you do this think about:

- What exists today?
- What are the barriers and opportunities?
- What are our strengths and weaknesses?
- What could we do differently?

Step 3 Prioritize your ideas Take a look at your collective ideas:

- What would you prioritize doing today?
- What ideas will take time or need resourcing?
- Who needs to be involved?
- How can you sequence interventions over time to catalyze change?

Be specific—agree what actions will be taken, who will take responsibility for them, and when they will be implemented.

Step 4: Think about what actions you can take Having gone through this process, start to think about the next steps in your personal foresight journey, and what actions you can take to integrate foresight into your organization, work or community:

- What actions might you want to take more often?
- What behaviors do you need to repeat more often?
- What actions would you like to take less frequently?
- What behaviors do you need to repeat less frequently?

Use the [more of / less of template](#) to capture your ideas. Capture your ideas for actions over the next week, month and year.

TIPS AND TRICKS

Don't boil the ocean. You can't do everything. Try to identify a few key intervention points to focus on.

Think about whether you need to build supply (skills, projects, scanning capabilities) or demand (helping decision makers understand and see the value of futures work, or building requirements for futures thinking)

There are simple steps you can take to building culture and skills, such as training, project-based learning, peer-learning and building networks.

The sequencing and mix is important. Don't spend time developing amazing products if no one is there to use them; identify your champions and help build supply to meet demand; ensure there is commitment and substance behind networks.

FIND OUT MORE

Read [Features of Effective Systemic Foresight¹⁰⁰](#) for more insights on the ecosystems capability model.

CAPABILITY MATRIX: FINLAND

Finland has strong institutions for foresight across the system including in the legislature, the executive and funded non-departmental public bodies. It is an example of a well-structured and well-connected ecosystem for long-term thinking.

- A. The Government Report on the Future engages with the public, third sector, private sector and universities.
- B. The Parliamentary Committee approves the Report and uses it to set strategic priorities. The Committee produces its own futures reports.
- C. Ministries are required to produce futures reviews to inform government programming.
- D. The financially and politically independent think tank, Sitra, reports to Parliament with a remit to fund research and innovation, and to provide insight to the government on the long term.
- E. The Government Foresight Group promotes foresight at a national and network-wide level to link foresight and decision-making processes.

- F. The National Foresight network—hosted by the Prime Minister’s Office and Sitra—connects the Government Foresight Group with foresight hubs across the private sector, academia, regional councils, and the wider research and innovation system.
- G. The government participates in international foresight activity, including the Network of Institutions for Future Generations.
- H. Finland Futures Research Centre in the University of Turku is dedicated to futures studies in academia. Future makers training developed by SITRA is an example of the ambition to develop skills and futures literacy across Finland.
- I. There is a perception that there is little conflict or competition within the system, with space for cooperation, support and knowledge exchange.

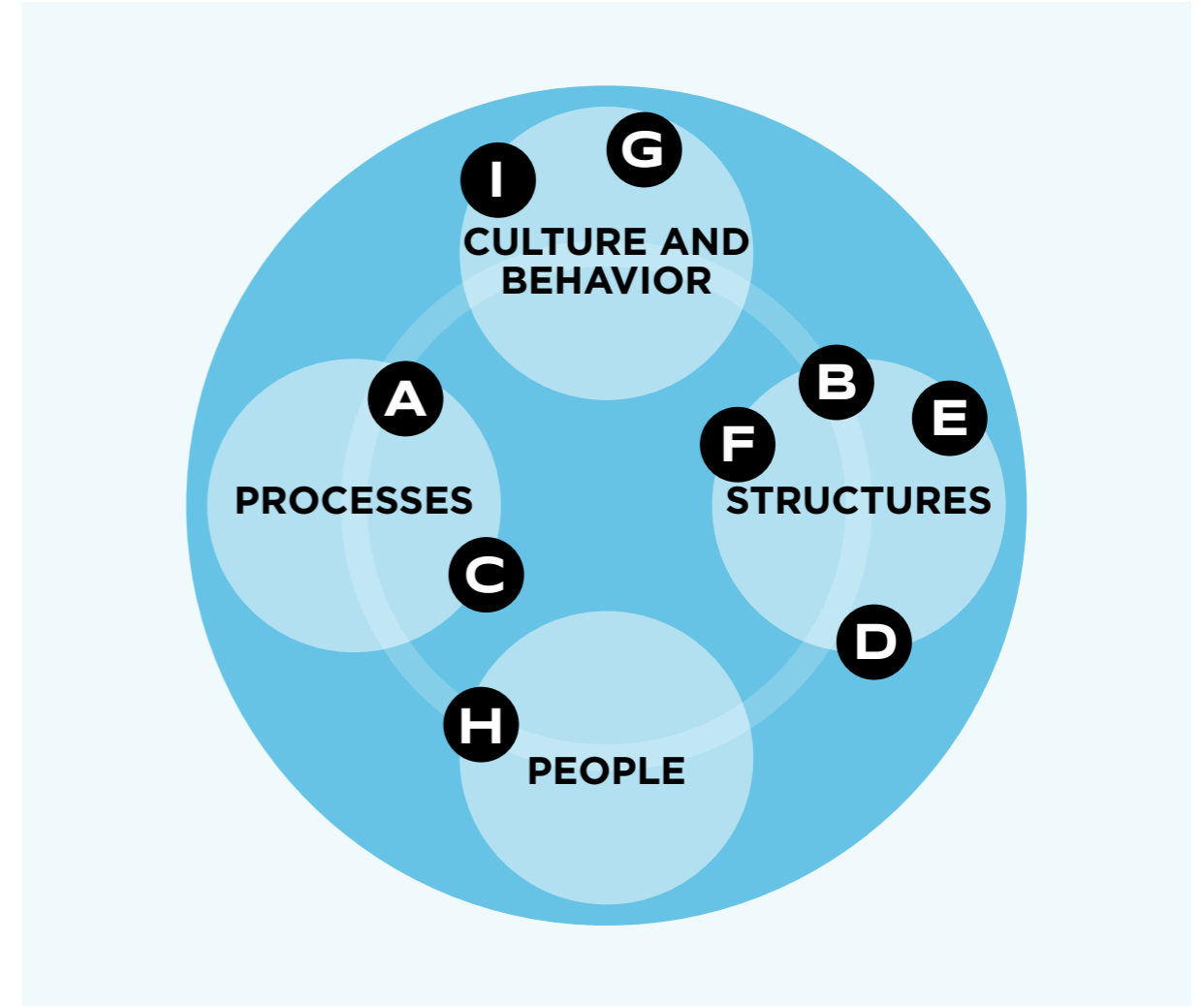


Figure: Key ingredients of Finland’s foresight ecosystem. Adapted from School of International Futures (2021).¹⁰¹

CAPABILITY MATRIX: NEW ZEALAND

Investment in foresight has been driven across specific departments and topics in New Zealand. A sense of stewardship is one of the drivers of foresight activity.

- A. The Public Service Act 2020 requires long-term insight briefings to be produced by the chief executive of each government department every three years. The briefing, which is unclassified, addresses medium and long-term threats and opportunities.
- B. The 2019 Wellbeing budget and 2020 budget setzout investment in activities for the long-term.
- C. New Zealand draws on methods from the Maori to bring together multiple views and manage complexity. The concept of stewardship originates from Maori culture.
- D. A number of specific departments and systems focus on the future, including the New Zealand Defence Force, Ministry of Foreign Affairs and Trade, libraries and archives, and Inland Revenue.
- E. The strategy unit of the Inland Revenue Department—the public service department responsible for tax revenue and advising tax policy—uses foresight methods in their work.

- F. There are limited parliamentary mechanisms though the Parliamentary Commissioner for the Environment has scrutiny and review capacity to support long-term management of resources, including preventative measures.
- G. There is a history of foresight in crisis response and risk management—centrally coordinated with strong integration into communities and the private sector.
- H. Semi-formal networks bring together public servants interested in foresight, but are typically unfunded. Academia and non-profit organizations play a role in supply and knowledge transfer.

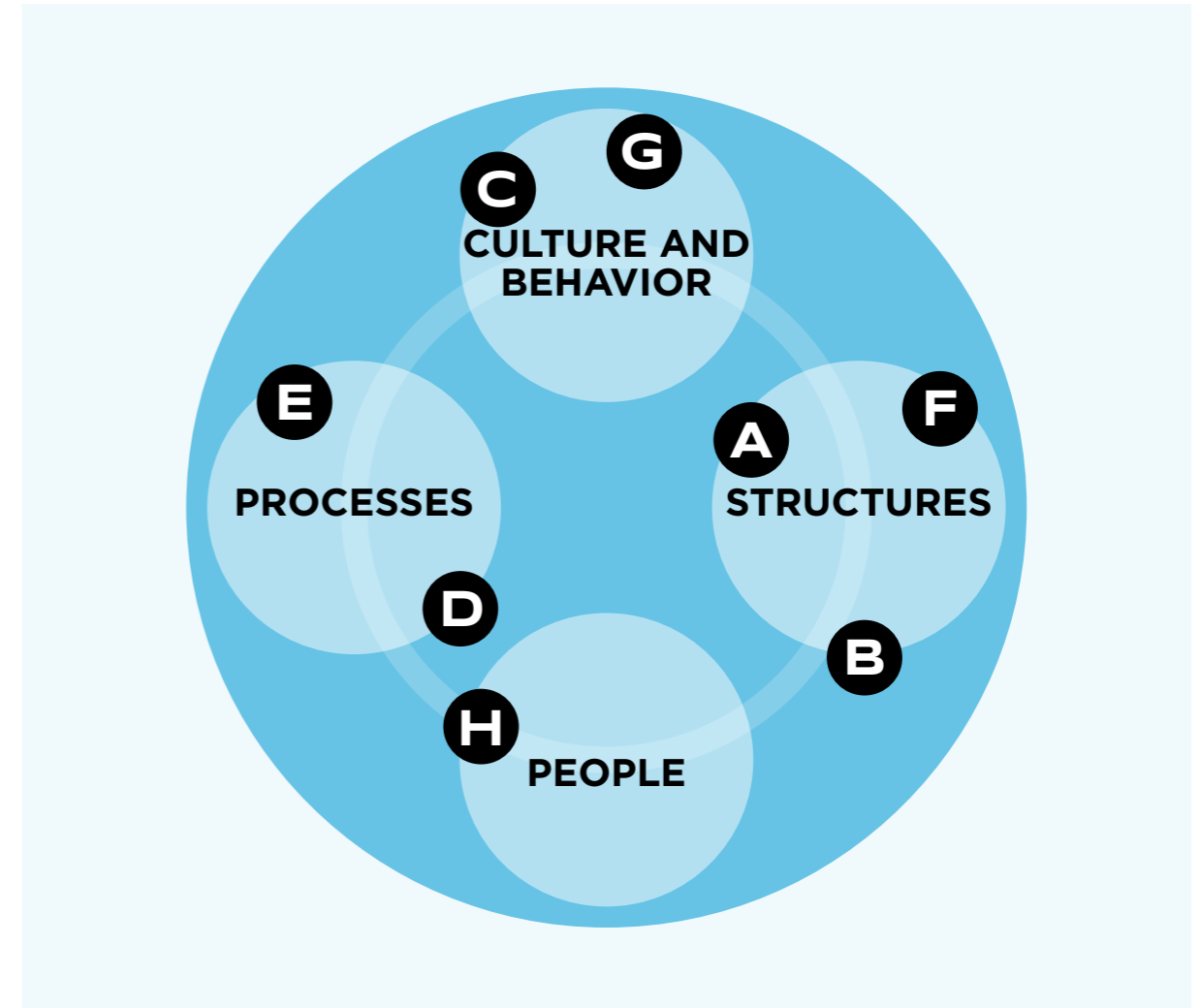


Figure: Key ingredients of New Zealand's foresight ecosystem. Adapted from School of International Futures (2021).¹⁰²

5 CONNECT AND LEARN



CONNECT AND LEARN

CONTINUING YOUR LEARNING JOURNEY

A journey to transformation is a personal, organizational and system-wide journey. We need to be mindful of our own personal practice when striving to make sense of things in an uncertain world: using the tools you have at your disposal and paying attention to our cognitive biases. What we learn inspires us to build future-alert organizations and communities.

We are part of a wider community of interest and advocacy. One that is growing and continually changing. We learn from each other and support each other with examples of what we have achieved.

As you continue on your journey, we encourage you to connect into existing networks and communities and to see yourself as part of a wider community.

To help you get started, we are sharing the following networks, communities and resources. We hope that you will find them useful, but remember they are just the tip of the iceberg. Should you need specific support or contacts, including to regional networks then, please get in touch with us at SOIF and California 100.

Communities

- **Asia-Pacific Futures Network** Global foresight network focused on the uptake of futures and foresight across Asia-Pacific www.asiapacificfutures.net
- **Association of Professional Futurists** Community of futurists dedicated to promoting professional excellence, the value of strategic foresight and futures studies apf.org
- **California 100** A transformative initiative focused on inspiring a vision and strategy for California's next century california100.org
- **Federal Foresight Community of Interest** A US based network for federal for agencies to share best practices, foster cross-agency support, and develop new and innovative ways to apply and improve the use of strategic foresight ffcoi.org
- **Foresight for Development** Foresight community focused on promoting the use of foresight for Africa's future foresightfordevelopment.org
- **Forum for the Future** A non-profit focused on sustainability www.forumforthefuture.org
- **Long Now Foundation and Meetups** A growing network of meetups from the Long Now Foundation www.meetup.com/topics/longnow

- **Next Generation Foresight Practitioners** An international network of young change makers envisioning inclusive and equitable futures nextgenforesight.org
- **Public Sector Foresight Network** Network for people involved in foresight for public sector organizations. www.publicsectorforesight.org
- **The Millenium Project** Independent, non-profit global participatory futures research think tank millenniumproject.org
- **World Future Society** <https://www.worldfuture.org>
- **Urgent Optimists** A global learning community that allows individuals to connect on their aspirational futures journeys. <https://urgentoptimists.org>

Learning and courses

- **The Institute for the Future** offers a range of courses with some scholarships. They also developed this online [coursera course](http://coursera.org). iftf.org
- **Metafuture School** offers a range of online courses including Futures 101, personal futures and conflict transformation classes metafutureschool.org
- **School of International Futures** runs an annual foresight retreat and online training courses focused on helping international leaders to unlock value from foresight. <https://soif.org.uk>

Toolkits

- [The Futures is Ours: Strategic foresight tool kit](#) from Save the Children
- WCVA [Building Better Futures Toolkit](#) for community foresight
- [Futures Frequency](#) a workshop method for building alternative futures, SITRA
- [The Futures Toolkit](#), UK Government Office for Science

Specific techniques

- Causal layered analysis and the Six Pillars Approach contact Sohail Inayatullah at metafuture.org
- Drivers of change visit driversofchange.com or see the [Center for Strategic Futures](#)
- Experiential futures and design. Get in touch with Stuart Candy at futuryst.com
- Design futures and rapid-prototyping. Scott Smith at changeist.com
- The Manoa Scenarios Method and Visioning Contact Wendy Schulz at www.infinitefutures.com
- Systems practice: take the free Plus Acumen course on systems thinking plusacumen.org/courses/systems-practice

GLOSSARY

FORESIGHT AND FUTURES TERMS

Business-as-usual The world and the organization will continue on the same lines. The extended present.

Co-creation Working together with different groups of people to explore ideas and solutions.

Complex or wicked problem A problem with many interacting agents with multiple identities. If you alter an agent, the effect is unpredictable and cause and effect are intertwined.

Complicated All components are knowable and definable and can be cataloged. The relationships can be described and cause and effect understood. An interaction will have a replicable outcome.

Driver of change “What’s a driver? In cause and effect, it’s the cause.” (Learning From Technology Foresight Connections, Smith & Mason, 2004).¹⁰³ Drivers are forces or factors of change that have the potential to “drive” a future in a particular direction. For example, climate change is a driver of change in the context of urban development (and many other contexts). Drivers may have an immediate effect on the system you are looking at, or may have a more diffuse impact on a number of direct drivers.

Emerging Issue/Weak Signal An early indication of a potentially important new event or emerging phenomenon that could become an emerging pattern, a major driver or the source of a new trend.

Horizon or Environmental Scanning The systematic examination of potential threats, opportunities and likely developments, including but not restricted to those at the margins of current thinking and planning. A good horizon scan will scan widely, involving a wide range of sources to map the underlying issues, and identify a range of weak signals, trends, wild cards of other developments, persistent problems, risks and threats.

Forecasting To predict or estimate (a future event or trend). Forecast implies less certainty about the event’s occurrence than a definitive prediction, but the terms are often used interchangeably. Forecast is usually applied to short-term futures—such as one year ahead.

Foresight The capacity to think systematically about the future.

Futures Academic discipline and research methods and tools used to develop foresight.

Probable future The future imagined based on an extrapolation of existing trends. Keep in mind Jim Dator’s comment that there is no such thing as a probable future.

Possible future Judged to be less plausible, based on its logical connection to the perceived reality. A possible future will still contain embedded assumptions about the future.

Preferred future or Normative future Having a preferred scenario, or future.

Plausible future Judged to be reasonable, based on its underlying assumptions, internal consistency, and logical connection to reality.

Resilience The ability to recover from difficulties quickly.

Risk A situation involving exposure to danger or an adverse outcome.

Risk Management The forecasting and evaluation of risks together with the identification of procedures to avoid or minimize their impact.

Sense-making A motivated, continuous effort to understand connections (e.g. among people, places, and events) in order to anticipate their trajectories and act effectively.

Strategic Foresight An organized and systematic process to engage with uncertainty regarding the future. “The ability to create and sustain a variety of high quality forward views and to apply the emerging insights in organizationally useful ways; for example, to detect adverse conditions, guide policy, shape strategy; to explore new markets, products and service” (Developing and Applying Strategic Foresight, Slaughter, 1997)¹⁰⁴

Systemic Relating to or affecting the whole of a system, rather than just some parts of it.

Systems thinking A holistic approach to analysis that focuses on the way that a system’s constituent parts interrelate and how systems evolve over time and within the context of larger systems. Systems thinking is a fundamental perspective of foresight; the lens through which futures thinkers view the world.

Trend General tendency or direction of a movement/ change over time. A megatrend is a major trend, at a global or large scale. A trend may be strong or weak, increasing, decreasing or stable. There is no guarantee that a trend observed in the past will continue in the future. Megatrends are the great forces in societal development that will very likely affect the future in all areas over the next 10-15 years. “A trend is a trend, until it bends.” (Ged Davis)¹⁰⁵



GLOSSARY

Uncertainty A degree of variability, lack of predictability or state of doubt about the future or about what is the right thing to do.

Wild Card There are multiple types of wild card. When people refer to wild cards they typically imagine so-called “black swan” (low-probability, high-impact) events (The Black Swan, Taleb 2007)¹⁰⁶. However there are a range of wild cards—see for instance Oliver Markey’s typology of Wildcards in the Compass Anthology. Or the three mascots of post-normal times: the Black Swan, Black Elephant and Black Jellyfish.

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